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Outside the Box will be a standing column designed to introduce new ideas and concepts from other resources and professions that may help stimulate a new way of thinking about total cost management. The views and opinions expressed are those of the authors and do not necessarily reflect the official policy or position of AACE International. We invite Source readers to send suggestions on other sources to editor@aacei.org.

CLICK to watch Ole Scheeren talk about “Why Great Architecture Should Tell a Story” presented by TED.

For architect Ole Scheeren, the people who live and work inside a building are as much a part of that building as concrete, steel and glass. He asks: Can architecture be about collaboration and storytelling instead of the isolation and hierarchy of a typical skyscraper? Visit five of Scheeren’s buildings — from a twisted tower in China to a floating cinema in the ocean in Thailand — and learn the stories behind them.

Ole Scheeren is a German architect and principal of Buro Ole Scheeren with offices in Hong Kong, Beijing, Berlin and Bangkok. He is chief designer and leading the company’s creative vision and strategic development.
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SOURCE DEADLINES: Submissions for the Source must be received at least 8 weeks in advance of the issue date. Send to: Managing Editor, 1265 Suncrest Towne Centre Dr, Morgantown, WV 26505-1876 USA, or e-mail editor@aacei.org. Viewpoints expressed in columns, features, and articles published in Cost Engineering journal and Source are solely those of the authors and do not represent an official position of AACE International. AACE International is not endorsing or sponsoring the author’s work. All content is presented solely for informational purposes.
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The theme for this President’s Message is personal heroes, membership, and board elections. 2016 is the 60th year of AACE International. Experts predict that 2016 will be a year of both great opportunities and motivating challenges. I recently experienced such a challenge myself when trapped in the middle of a natural disaster in Chennai, India.

In my last President’s Message, I mentioned my upcoming trip to Regions 7 and 8. The Region 7 trip involved visiting the existing United Arab Emirates and Arabian Gulf Sections, and also participating in the launch for the new Qatar Section. The Region 7 trip was truly spectacular, and I was blessed to meet hundreds of AACE leaders and members in the Middle East. I left Region 7 for Region 8, and participated in a successful launch for the South India Section. I also enjoyed a wonderful tour across the state of Kerala, India. Yes indeed Kerala lives up to the global tourism tagline as “God’s Own Country.”

Unfortunately, the subsequent trips to both Singapore and Shanghai did not go as planned. I was connecting on a flight through Chennai and got stuck in the worst flood in 100 years. This flood devastated the Indian state of Tamil Nadu, forced closure of the airport, damaged roads and bridges, killed hundreds, and forced thousands to evacuate their submerged homes, schools, and offices. I lived as a refugee for days amidst the catastrophe. Amazingly, one of my close AACE International friends launched a rescue mission.

Logan Anjaneyulu, CCP CEP PSP, learned I was stuck in the disaster and launched a social media WhatsApp group tagged “Julie in Chennai.” Logan and I were co-instructors of the AACE Annual Meeting educational seminar “Planning and Scheduling Certification Preparation Course.” Logan lives in San Antonio, Texas, works as a Director for Valero Energy, and is originally from Chennai. I am extremely lucky to know Logan as he has family, friends, and influential contacts within Chennai. Logan is responsible for my rescue, a personal hero and worthy of our collective thanks!

He learned of my need and within hours had over 20 participants engaged in a multi-continental rescue effort. The team was ever vigilant and worked without sleep for days on the rescue operation. The execution of this team and their precision were truly amazing. I was rescued by two young men, we waded through waist high water with my luggage in tow. Transportation was procured to Bangalore (a seven hour taxi drive through treacherous road conditions) and finally a flight back home to Los Angeles. Logan arranged that I was personally escorted the entire way. I am indebted and thankful for Logan’s dream team. This adventure is a testament to the power of friendships that are possible through AACE International. Relationships through AACE International are truly inspirational!!

The other theme of this President’s message is membership growth. We received the year end membership numbers for 2015 and membership numbers remain stagnant. Global business is experiencing economic stagnancy and the economy is fluctuating. Membership is also hampered as gas prices remain low and sectors of our membership are affected, especially those working where economies are dependent upon oil and gas. Surprisingly, our membership...
has not declined appreciably. This fact illustrates that our members understand the power of their Association, and the value of resources offered to sharpen their skills, knowledge, education, and certification, especially in a competitive marketplace. I encourage us all to actively seek out, promote, and participate in AACE International activities, and to promote regional and global cooperation to increase AACE membership. Please reach out to your co-workers and friends and share your compelling story about the value of AACE International. My firm LA Metro recently became a corporate member firm (COMP), and now over 50 percent of our project control staff belongs to AACE International. We are actively engaged in learning opportunities, encouraging certification for staff, have held section meetings on-site, and hope to host a certification prep course. This serves as one example of how one person can make a difference to improve business processes within their firm and benefit from AACE International. I look forward to hearing your success stories of advancing AACE membership when we meet next.

The final theme for this message is elections for AACE International Board of Directors. Annual elections are conducted electronically from Feb. 1 through 4 p.m. on March 15. The slate of candidates is found at: http://www.aacei.org/aboutUs/structure/elections/candidates.shtml

Your voice and vote are important to us and the Association’s future. Every candidate has written an election profile that illustrates who they are and what they believe is important. Please read their profiles and determine which candidate best aligns with your view. The voting process is quite simple. You merely need to know your member number expressed in six digits. Election of officers and directors interfaces via our website via an electronic ballot. The official election ballot for officers will be posted and available to each member and associate member on February 1, 2016.

Members will link to the voting site from the AACE website homepage. Once at the site, members will use their member ID and password to access the ballot and vote. A six digit ID is required. If your AACE ID number does not include six numbers, just add zeros in front of the ID to make it a six digit ID.

Each voter indicates their choice for the various officers. We embedded a security feature whereby voters may vote only once. A voter can print out a receipt that will include an individual verification number as proof of having voted.

Geographical regional directors are voted upon by constituents in their region. Any member or associate member with questions or other concerns is asked to contact Headquarters for assistance.

In closing, this year marks the 60th year of AACE International, and anniversary celebration activities are planned for the Toronto Annual Meeting. Registration began in January and we hope you will join us in Toronto. My next message will include more information regarding planned offerings for the AACE Annual Meeting. For more information refer to www.aacei.org/am/currentAM.

If you would like to contact our current president with questions or comments about The President’s Message please address your email to president@aacei.org. To engage in other discussions, check out AACE International’s Online Forums at www.aacei.org/forums.

“Building an Owner’s Project Management Maturity and Capability”
Webinar February 17, 2016

Pacific Gas and Electric Company (PG&E), one of the largest combined natural gas and electric utilities in the United States, is undertaking a multi-year initiative to build its Enterprise Project Management (EPM) organizational and technology capability. This presentation will provide an overview of the five year EPM initiative starting in 2016 to increase the company’s project management maturity in the area of processes/procedures, technology, governance, training, monitoring and controls.

The EPM initiative is being undertaken on the heels of the completion of a major project management technology upgrade, which took place between 2012 through 2015. The SAP Project Systems Integration (SPSI) was undertaken to establish a common Work Breakdown Structure (WBS), fully integrate SAP and Primavera P6 using the SAP Project Systems module, and standardize enterprise reporting using SAP Business Objects (BOBJ).

The scope of both of these initiatives is massive: impacting all major lines of business, including electric, gas, and power generation including over 5000 projects and 7000 people. The presentation will discuss the business case for change, the solutions being implemented, and the change effort involved.

For more information visit: www.aacei.org/mtgs/Webinars/
TOTAL COST MANAGEMENT
dude
Celebrating Sixty Years of AACE
Network with your peers!
ACE International Vice President Finance, Joseph W. Wallwork, PE CCP CFCC PSP, sees industry needs in project controls and believes AACE holds the keys to fill an otherwise nonexistent educational need. He says, “Finding good qualified people is always a challenge. AACE can help people obtain the education in project controls that is not available in schools, and by networking opportunities allowing potential job seekers and the managers looking for staff to meet.”

Wallwork’s personal experience with AACE began when he first learned of AACE from members who were with another company working on a project with him. He says, “They talked to me about AACE and invited me to come to a Metro New York Section meeting.” As he learned more about who and what AACE is, he decided to join and become an AACE member. He explains his decision was based upon personal goals to, “learn more and advance my career.” He adds, “I realized AACE gave me an opportunity to meet other professionals, learn from them, and to network to create opportunities for myself.”

After becoming an AACE member, he learned of AACE certifications and he started to consider becoming certified. He says, “My first certification was the CCE (now CCP). I wanted the certification to demonstrate to my employer my knowledge and abilities in order to advance my standing within the company. I later obtained the PSP and the CFCC, realizing that the certifications made me more marketable to clients and thus more valuable to my company.”

Having become a member and having become AACE certified, the next logical step was to actively promote AACE membership and AACE certifications to others, to pay forward the good he was receiving from his continued AACE membership. Wallwork notes that he, “promotes AACE by encouraging those who work for me to join AACE and by my active participation in the Association at both the local section and association levels.”

In addition to membership and certification, Wallwork says AACE has a variety of products and services that add to the benefits of membership and provide personal career development support, as well as being a great resource for the members employers. Wallwork says he personally benefits from access to the AACE Recommended Practices which he will reference as he works on various projects. He also likes the wealth of prior technical articles that make up the AACE Virtual Library and he finds searching the virtual library to be a great tool in obtaining information that he may need. He also adds again that, “The AACE certifications are extremely important to me.”

Wallwork is employed as a Managing Director with Nautilus Consulting, located in Syosset, New York (Long Island). He says one of the reasons he likes his job is that, “I get to work with a team of professionals that I have known and worked with for up to 25 years.” Wallwork brings to his career a degree in Civil Engineering from Manhattan College and he is a Professional Engineer (registered in New York). He adds, “I also hold the CCP, PSP, and CFCC AACE Certifications. I believe my past experience working with a contractor scheduling my work and having to build a project for my estimate was invaluable in shaping my career.”

In addition to the benefits of working with a team of professionals that he has known and worked with for years, he finds other things to be rewarding about his job. He explains, “In my
role now, I work in both claims and pre-construction services. On the pre-construction side, I can help ensure that budgets and schedules are accurate and contract language is reasonable. On the claims side, I can help resolve problems for my clients.”

As noted at the start of this article, Wallwork believes one of the most critical problems faced by people in his field is finding qualified people to fill positions and to become a part of the project controls team. He believes AACE is uniquely positioned to assist in providing resources to deal with these problems. He says, “AACE can help people obtain the education in project controls that is not available in schools and by networking opportunities allowing potential job seekers and the managers looking for staff to meet.”

As all employed individuals balance work life and personal life, so does Wallwork. He says, “My wife and I have been married for seven years. She works as a marketing manager. We each have two children. My daughter is a paramedic and a police officer. My son has a degree in construction management and works at Nautilus. He is also an AACE member. My wife’s girls are still in school; one studying fashion marketing and the other still deciding but thinking about medical school.” Specifically when it comes to work/life balance, Wallwork notes, “I work out my stress by going to the gym and riding my bike.”

Addressing a defining moment in his life, Wallwork says, “Nearly 20 years ago I left a good job to move into a less certain future in the consulting world. There were people who couldn’t understand why I was leaving a good position I could stay in for the rest of my career. However, I made the move because I realized that if I trusted my skills and abilities I needed to keep moving forward.” This is advice he gives to others. He concludes, “I am proud of and appreciate that my friends and peers honored me as a Fellow of AACE.”

AACE International Vice President Finance, Joseph W. Wallwork, PE CCP CFCC PSP, is shown seated in a 600hp Porsche that he is about to take out for a drive. The tickets to drive the Supercars were a birthday gift from his daughter. He got to drive several “Supercars”. Wallwork says, “There is something ironic that my daughter, a police officer, gave me a gift to go speeding in cars. Well at least it was on a closed course not on the street.”

AACE International Vice President Finance, Joseph W. Wallwork, PE CCP CFCC PSP, is shown second from the right with, from left to right, his daughter, wife, and son, at a surprise party given for him by his wife for his 60th birthday.
AACE International

CANONS OF ETHICS

Approved by the AACE International Board of Directors: June 26, 2015
Issued to the Association Members and the Public: February 1, 2016
[Edition: 2015.1]

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Administration

Preamble

Part I

AACE International Members shall uphold and advance the honor, dignity, and practices of Cost Engineering and Cost Management.

In keeping with the high standards of ethical conduct members shall:

• Be honest and impartial;
• Serve employer, clients, and the public with dedication;
• Strive to increase the competence and prestige of their practice;
• Apply knowledge and skill to advance human welfare; and,
• Ensure adherence to health, safety, and welfare standards.

Part II

Throughout the Canons of Ethics the term “Member” shall be read to include:

• All classes of AACE International membership;
• AACE International certificants, members and/or non-members, and those applying for certification and sitting for examination;
• Other professionals providing expert input to AACE International through professional courses of instruction using AACE International materials;
• Other professionals supporting development of educational and technical products that bear the AACE International imprimatur.

Section I

Relations with the Public

Members shall hold paramount the health, safety, and welfare of the public, including that of future generations. [Paragraph: I.1]

Members shall endeavor to extend public knowledge and appreciation of Cost Engineering and Cost Management and its achievements. [I.2]

Members shall oppose any untrue, unsupported, or exaggerated statements regarding Cost Engineering and Cost Management. [I.3]

Members shall be dignified and modest, ever upholding the honor and dignity of their profession.[I.4]

Members shall express an opinion on cost engineering or cost management subject only when it is founded on adequate knowledge and honest conviction. [I.5]

Members, concerning Cost Engineering and/or Cost Management matters, shall issue no statements, criticisms, or arguments that are inspired or paid for by an interested party or parties, unless they preface their comments by identifying themselves, by disclosing the identities of the party or parties on whose behalf they are speaking, and by revealing the existence of any pecuniary interest they may have in matters under discussion. [I.6]

Members shall approve or seal only those documents, reviewed or prepared by them, which are determined to be safe for public health and welfare in conformity with accepted cost engineering, cost management and economic standards. [I.7]

Members whose judgment is overruled under circumstances where the health, safety, and welfare of the public are endangered shall inform their clients and employers of the possible consequences. [I.8]

Members shall work through professional societies to encourage and support others who follow these concepts. [I.9]

Members shall work only with those who follow the concepts of health, safety, and welfare. [I.10]
Members shall be objective and truthful in professional reports, statements, and testimony. They shall include all relevant and pertinent information in such reports, statements, and testimony. [I.11]

Section II

Relations with the Employees and Clients

Members shall act in all matters as a faithful agent or trustee for each employer or client. [Paragraph: II.1]

Members shall act fairly and justly toward vendors and contractors and shall not accept any commissions or allowances from vendors or contractors, directly or indirectly. [II.2]

Members shall inform their employer or client of financial interest in any potential vendor or contractor(s), or in any invention, machine, or apparatus that is involved in a project or work for either employer or client. Members shall not allow such interest to affect any decisions regarding cost engineering or cost management services that they may be called upon to perform. [II.3]

Members, when as a result of their studies, find that a project or work shall not be successful, or if their Cost Engineering and Cost Management or economic judgment is overruled, they shall so advise their employer or client. [II.4]

Members shall undertake only those Cost Engineering and Cost Management assignments for which they are qualified. Members shall engage or advise their employers or clients to engage specialists whenever their employer’s or client’s interests are served best by such an arrangement. Members shall cooperate fully with specialists so engaged. [II.5]

Members shall treat information coming to them in the course of their assignments as confidential and shall not use such information as a means of making personal profit if such action is adverse to the interests of their clients, employers, or the public. [II.6]

Members shall not disclose confidential information concerning the business affairs or technical processes of any present or former employer, client, or bidder under evaluation, without consent, unless required by law. [II.7]

Members shall not reveal confidential information or finding of any commission or board of which they are Members, unless required by law. [II.8]

Members shall not duplicate for others, without express permission of the client(s), designs, calculations, sketches, etc., supplied to them by clients or bidders. [II.9]

Members shall not use confidential information coming to them in the course of their assignments as a means of making personal profit if such action is adverse to the interests of their clients, employers, or the public. [II.10]

Members shall not accept compensation—financial or otherwise—from more than one party for the same service, or for other services pertaining to the same project or work, without the consent of all interested parties. [II.11]

Members, employed by others, shall engage in supplementary employment or consulting practice only with the consent of their employer. [II.12]

Members shall not use equipment, supplies, laboratory, or office facilities of their employers to carry on outside private practice without the consent of their employers. [II.13]

Members shall not solicit a contract from a governmental body on which a principal officer or employee of their organization serves as a Member. [II.14]

Members shall not request, propose, or accept professional commissions on a contingent basis under circumstances that compromise their professional judgment. [II.15]

Members shall act with fairness and justice to all parties when administering a project or work. [II.15]

Members, before undertaking a project or work for others in which the Member may make improvements, plans, designs, inventions, or records that may justify copyrights or patents, shall enter into a positive agreement regarding the rights of respective parties. [II.16]

Members shall admit and accept their own errors when proven wrong and refrain from distorting or altering the facts to justify their decisions. [II.17]

Members shall not attempt to attract an employee from another employer by false or misleading representations. [II.18]

Members shall act in professional matters for each employer or client as faithful agents or trustees and shall avoid conflicts of interest. [II.19]

Members shall avoid all known or potential conflicts of interest with their employers or clients and shall promptly inform their employers or clients of any business association, interests, or circumstances that could influence their judgment or the quality of their services. [II.20]

Members shall not solicit or accept gratuities, directly or indirectly, from contractors, their agents, or other parties dealing with their clients or employers in connection with project or work for which they are responsible. [II.21]
Section III
Relations with Other Professionals

Members shall acknowledge that credit for Cost Engineering and Cost Management work is given to those to whom credit is properly due. [Paragraph: III.1]

Members shall provide prospective employees with complete information on working conditions and their proposed status of employment. After employment begins, Members shall keep the employee informed of any changes in status and working conditions. [III.2]

Members shall uphold the principle of appropriate and adequate compensation for those engaged in Cost Engineering and Cost Management work, including those in subordinate capacities. [III.3]

Members shall endeavor to provide opportunity for the professional development and advancement of individuals in their employ or under their supervision. [III.4]

Members shall not attempt to supplant other cost engineers or cost management professionals in a particular employment after becoming aware that definite steps have been taken toward the others’ employment or after they have been employed. [III.5]

Members shall not maliciously or falsely, directly or indirectly, injure the professional reputation, prospects, practice, or employment of another, or shall they indiscriminately criticize another’s project or work. Proof that another cost professional has been unethical, unfair, or illegal in their practice shall be cause for advising proper authority. [III.6]

Members shall not compete unfairly with other cost professionals. [III.7]

Members shall cooperate in advancing the Cost Engineering and Cost Management profession by interchanging information and experience with other cost professionals and students, by contributing to public communication media, to cost engineering, and cost management and scientific societies, and schools. [III.8]

Members shall not seek to acquire or provide to other individuals certification examination questions or any other certification examination materials, to include derivative materials, not in the public domain. [III.9]

Members shall not falsify or permit misrepresentation of their own or their associates’ academic or professional qualifications. They shall not misrepresent or exaggerate their degrees or responsibility in or for the subject matter of prior assignments. Brochures or other presentations incident to the solicitation of employment, shall not misrepresent pertinent facts concerning employers, employees, associates, joint ventures, accomplishments, or Membership in technical societies. [III.10]

Members shall prepare articles for technical or lay press that are only factual, dignified, and free from ostentatious or laudatory implications. Such articles shall not imply credit to the cost professionals for other than their direct participation in the project or work described unless credit is given to others for their share of the project or work. [III.11]

Section IV
Standards of Professional Performance

Members shall be dignified and modest in explaining their accomplishments and merit, and shall avoid any act tending to promote their own interests at the expense of the integrity, honor, and dignity of the profession. [Paragraph IV.1]

Members, when serving as expert witnesses, shall express Cost Engineering and Cost Management opinions only when it is founded upon adequate knowledge of the facts, upon a background of technical competence, and upon honest conviction. [IV.2]

Members shall continue their professional development throughout their careers and shall provide opportunities for the professional development of cost professionals under their supervision. [IV.3]

Members shall encourage their Cost Engineering and Cost Management employees to attend and present papers at professional and technical society meetings. [IV.6]

Members shall uphold the principle of mutually satisfying relationships between employers and employees with respect to terms of employment, including professional grade descriptions, salary ranges, and fringe benefits. [IV.7]

Administration
Recommendations for changes or corrections:

Recommendations for changes or corrections to the AACE International Canons of Ethics are welcome. Changes or corrections shall be to: Chair, AACE International Ethics Committee or the Executive Director, AACE International.

Each recommended change and/or correction shall have full consideration by the AACE International Ethics Committee. The Chair of the Ethics Committee shall provide a full response to the submitter and all other affected parties.
The 2016-2017 slate of candidates for the 2016 AACE annual election is being announced to the AACE membership by the Nominating Committee, chaired by Past President Martin Darley, CCP.

- For President-Elect, the candidates are: Charles E. Bolyard Jr., CFCC PSP FAACE and John L. Haynes, PSP.
- For VP-Finance, the candidates are: Christopher W. Carson, CEP DRMP PSP FAACE and Cindy L. Hands, CCP.
- For VP-North American Regions, the candidate is: Jacqueline T. Doyle, PE PSP.

Regions 1, 2, 4, 7, and 9 will elect a Director-Region to the AACE Board of Directors.

- Region 1, the candidates are: Pranab Kumar Deb, PSP, and Les McMullan, FAACE.
- Region 2, the candidates are: Patrick M. Kelly, PE PSP, and Omoniyi (Niyi) Ladipo, CCP EVP.
- Region 4, the candidate is: Harrison W. Staley.
- Region 7, the candidates are: Husain Ali Al-Omani, CCP CEP DRMP EVP PSP and Maged Sayed El-Hawary, CCP EVP PSP.
- Region 9, the candidates are: Garvan G. McCann and Sean T. Regan, CCP CEP.

Voting will open on February 1, 2016, and will continue through 4 p.m. Eastern US time on March 15, 2016. Eligible voters will be AACE members with dues paid current as of Dec. 31, 2015. Anyone who renews or joins, in the period from Jan. 1, 2016 to March 15, 2016, will not be eligible to be added to the voter list, or to vote in the 2016 election.

To learn more about each of the candidates, go to:

www.aacei.org/aboutUs/structure/elections/candidates.shtml
TCM Fever

Celebrating Sixty Years of AACE
Network with your peers!
ACE’s Certified Forensic Claims Consultant (CFCC) certification is a prestigious distinction that can positively impact your career, your firm, and your clients.

CFCC is the standard by which senior claims and disputes resolution professionals are measured. It brings significant value to your career, enhances your firm’s profile across the design and construction industry, and adds value to your clients. Achieving AACE CFCC certification signifies your personal commitment to professional excellence in the A/E/C industry. The CFCC is a clear indicator that you possess not only the technical knowledge, but that you also have the breadth of proven experience and performance to excel as a claims professional or expert witness in the resolution of challenging design and construction disputes.

The CFCC is intended to assist competent, experienced claims professionals in maintaining or enhancing their eligibility of standing as testifying experts. It also assists in establishing one as a potential testifying expert in the field of claims analysis and matters of litigation arising from disputes occurring in the design and construction industry.

Attorneys and adjudicators will gain greater confidence in your demonstrated ability to produce sound expert analysis and present opinions in clear and understandable reports and testimony. The CFCC is gaining recognition worldwide as the only advanced professional level certification of its kind in bringing enhanced value to having analysts, consulting and testifying experts on staff and on your disputes resolution team.

The requirements to achieve CFCC certification are considerably more stringent than other professional certifications which certify competency, but not expertise and experience. The standards are high, and individuals applying for the CFCC must have substantially more experience and demonstrated competencies specific to claim analysis and dispute resolution, along with the requisite education and testimony and dispute resolution experience to qualify to testify as an expert.

Employers, attorneys, mediators, arbitrators and triers of fact are recognizing the importance of having CFCCs actively participating in the resolution of disputes in nations or countries with common law or mixed law, where common law is a component of mixed law.

To learn more about CFCC certification, or to download a complimentary copy of our CFCC Study Guide, use the links below. If you have any questions please contact certification staff at AACE HQ: certification@aacei.org or 304-296-8444, ext. 110.

www.aacei.org/cert/whatCertOffers.shtml
www.aacei.org/cert/CFCC_CertificationChecklist.pdf
PEACE LOVE TOTAL COST MANAGEMENT

Celebrating Sixty Years of AACE Network with your peers!
Beth Miller was born and raised in New Castle, a small town in western Pennsylvania. She obtained her bachelor’s degree in business from Penn State University, majoring in quantitative business analysis, which focuses on quantitative methods of measuring business performance. After college, Beth moved to Houston, Texas, to start her career with a major oil company as a computer programmer.

After “retiring” from full time professional work to raise her family, Beth faced a dilemma when ready to resume her career 15 years later. She was looking for a career that would use her analytical skills and her experience in project work. In addition, she wanted something that would fit with her lifestyle: her husband’s career had taken her across the country; from Houston to Denver to Anchorage. At the time, she anticipated continuing to follow engineering and construction projects around the country.

When her husband suggested she would be an ideal candidate for work in project controls, her reaction was “what’s that?” After further research, she loved the idea and believed it would be a great fit. Now she faced a second dilemma: how does one gain entry into the field of project controls? Or for that matter, how does one re-enter the world of professional work after 15 years away?

She was very fortunate to obtain a position as a project administrator with a program manager that understood and supported her goals and worked with her to develop a plan to eventually move into a career in project controls. With a lot of support, mentoring, and self-study, she was eventually able to transition to a position as a cost and scheduling analyst. She loved it.

Beth appreciates that AACE offers a wealth of resources for professional development, and she regularly takes advantage of the webinars, Recommended Practices, TCM Framework, and the archive of articles. She has had the incredible opportunity to attend two AACE International Annual Meetings. She values how they’ve deepened her understanding of project controls topics and introduced her to an amazing group of inspiring, dedicated project controls professionals.
Beth recognizes the value of professional certification. She believes that it is a way to demonstrate a drive to continuously improve by studying the tools, theory, and best practices of one’s profession. She has successfully studied for and achieved AACE’s PSP and CCT certifications. She appreciates that AACE offers a wealth of resources for professional development, and she regularly takes advantage of the webinars, Recommended Practices, TCM Framework, and the archive of articles.

While working on her first project, she was introduced to Sean Robbins, a scheduler on the project and president of the local AACE Alaska Section. He introduced her to AACE and extended an invitation to the local section meetings. The local section provided not only monthly technical presentations, but a community of fellow project controls professionals. That community became very valuable to Beth. While she worked for a large, multi-national corporation, her local office was quite small, giving her a very limited pool of cost engineering resources to interact with on a regular basis. Having a local “peer group” was a huge support. For such a large state, Alaska’s project controls community is a very small, supportive family.

Beth quickly became involved in the AACE Alaska Section and has served in a number of officer positions, including section president. Section leadership, especially the position of president, took Beth well out of her comfort zone, but the confidence it instilled in her has been vital to her professional development and growth. She credits her success to the encouragement and support of those around her.

Her work with AACE has contributed to Beth’s successful career development in other ways as well. While working with AACE Alaska Section, she met fellow officer Jennifer Salinas, a Project Controls Manager with URS Energy & Construction (now AECOM). After hearing about the strong project controls practices and procedures that were the bedrock of Jennifer’s organization, Beth knew that was the environment that she was looking for as a professional. She joined the company in 2013, and has been supporting the environmental and regulatory services for a major LNG pipeline project ever since.

Beth enjoys giving back as a way of recognizing all of those who have provided so many opportunities to her throughout her career. She has organized and co-taught CCT and CST certification prep courses for her section and is currently helping to organize a two day conference that the section is planning this spring. In addition, she is a member of the AACE Women in Project Controls Committee.

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Throughout her career, Beth has had the opportunity to work with a variety of very talented people who have taken the time to provide mentoring, support, and encouragement. These have included her managers, project managers, technical teams, fellow AACE members, and especially her fellow project controls professionals. It has included those with many years of experience, as well as those much more junior. Project controls is a very analytical discipline, but Beth believes that it is the people she interacts with that make it a worthwhile and interesting career.

Today, Beth and her husband Larry live in Anchorage and are the proud parents of two college students. ♦
Omar El Sherif is an inborn leader with great enthusiasm for knowledge, development, and value sharing. Omar grew up in the coastal city of Alexandria in Egypt where he received his bachelor degree in civil engineering from Alexandria University. During the course of his studies, he has completed several internships in the United Arab Emirates, Germany, and Egypt. The more exposure he had to the construction industry, the more he found himself interested in understanding cost impacts. He worked on construction projects from early design stages into construction management and all the way through handing over for facility management.

Upon graduation, Omar joined a design consultancy in Alexandria where he worked on several projects ranging from schools, office buildings, airplane hangars, etc. He was responsible to provide analysis, design, quantity surveying, and prepare the bill of quantities.

The following year, Omar moved to the United Arab Emirates and joined his family-owned Arabesque Contracting, LLC, as a site engineer, later as the project engineer, and currently as the company’s deputy general manager. Working for a family business was anything but a comfort zone for him. With an entrepreneurial spirit, he enjoyed wearing many hats, reviewed corporate and project costs, and positively influenced key profitability and financial performance indicators. Omar pursued several postgraduate engineering management courses at the University of Wollongong in Dubai, and a master’s degree in construction project management from the UK’s Heriot Watt University, Dubai Campus.

At one of the master’s degree courses, “Construction financial management,” he met Maged El Hawary, current president of the AACE International UAE Section. From this moment, he became a regular event attendee and key contributor for the AACE UAE Section team. Omar found the AACE community quite interesting as a medium for knowledge and experience sharing. This year he was elected within the UAE Section Board as the marketing director. As marketing director, he revamped the UAE Section social media presence and now the Facebook page has more than 15,000+ fans and counting!

Omar is interested in pursuing AACE International certifications and currently has both Earned Value Professional (EVP) and Decision & Risk Management Professional (DRMP) on his radar.
Omar plans to attend the Annual Meeting where AACE international members get to meet peers from all over the world. He says, ‘it would be great to exchange stories and gather insights regarding key strategies for AACE in coming years.’

Risk Management Professional (DRMP) on his radar. Omar would love to see more industry professionals in the United Arab Emirates join AACE International. He is especially interested to expose university students to concepts of total cost management, project controls, and networking as a means to make them more competent candidates in the market.

Omar hopes to advance within the UAE Section board leadership and is willing to run for presidency within a few years. He plans to attend the Annual Meeting where AACE International members get to meet peers from all over the world. He says, ‘it would be great to exchange stories and gather insights regarding key strategies for AACE in coming years.’ He is also interested in travel opportunities to see new places, have exciting visits, and take day trips or excursions.

Omar’s mother tongue is Arabic; he is fluent in English, has working proficiency in German, and comprehends French and Spanish. Omar enjoys playing classical guitar and also serves as a private teacher.

Omar offers these words of wisdom to other young professionals: “People progress throughout their lives either running toward success or something they love or running away from failure or something they hate. The former approach is way better if you want to go far in life.”

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Abstract: The requirement to provide schedule risk assessment at early stages of project development, when no detailed schedules have been developed, has proven to be problematic. Then again, this is also true throughout project execution as detailed schedules are developed, elaborated, and revised. The requirement of risk assessment to deliver transparent and consistent outcome forecasts is frequently in conflict with the equal requirement of execution schedules to direct and monitor day-to-day progress of the work.

The authors propose that the solution to this intractable problem lies in recognizing that planning and scheduling are discrete functions, each suited to its own application and each requiring its own skill set. The Master Control Schedule (MCS) Planning and Risk Analysis method described in this article comprises a process that separates the planning process from that of detailed scheduling. This resolves those difficulties associated with the early development, risk analysis, monitoring, and updating of large project schedules. This article was first presented as PS.2046 at the 2015 AACE International Annual Meeting in Las Vegas.

Inexpensive, fast and increasingly more sophisticated Monte Carlo simulation software packages have become a catalyst for more elaborate approaches to Schedule Risk Analysis (SRA). Over the past 10 years or so, there have been increasing numbers of journal articles published on the subject of SRAs and in the authors’ experience, project teams are adopting CPM-based SRAs ever more readily. Despite the enhanced focus on SRAs, many practitioners and project team members will attest to the challenges associated with conducting meaningful SRAs. The fundamental nature of SRA and its absolute dependency on the integrity of the schedule being assessed creates unique challenges in properly modeling the inputs and correctly interpreting the outputs, especially in the early stages of projects.

A recent article effectively summarizes the goal of the Master Control Schedule (MCS) Planning and Risk Analysis method presented herein. Sriram Ramdass, PSP, and Jihwan Lim, PSP, succinctly note that “…a more sustainable and simple approach to schedule risk analysis where the level of effort and sophistication of the risk analysis process is tailored to fit the project need, has the potential to add value and improve schedule performance” [1].

While it is well recognized that scheduling is a key skill that plays a critical role in any project organization, it is the authors’ experience that schedule management, including SRA, is still immature in many organizations. To elaborate on this generic criticism of project schedule management and SRA and to provide a fundamental basis for understanding the methodology, a review of current pertinent literature follows.

There are four key themes in the literature related to schedule management and SRA that provide context for the proposed methodology. Those themes are: schedule risk analysis, schedule planning, schedule contingency, and schedule updates. Each theme is elaborated as follows.

Schedule Risk Analysis (SRA)

The majority of the SRA literature is focused on steps, tips, and checklists in order to conduct successful SRAs [2a, 2b, 2c, 2d, 2e]. While these are good considerations and arguably best practices for a single SRA or specific project assessment, there is a fundamental lack of integrated process that can be easily repeated, built-upon, and tailored to fit the project needs.
SRAs are most often viewed as a separate, stand-alone activity, and there is often no link through project controls to schedule management. Each SRA requires significant efforts to build (and re-build) a schedule model that is suitable for SRA purposes and then conduct the analysis. Once the SRA is complete and the outputs are determined, it is often set aside with no further relevance to the master project schedule, or to overall project management. If the SRA could be integrated with the master schedule, it is probable that not only would the full value of SRA be realized, but the risk culture of the organization would improve as well.

Schedule Planning
Although risk management, as described by both AACE® International and the Project Management Institute® (PMI®), project management frameworks is largely considered a planning exercise, it seems incongruous that virtually every article published on SRA methodology requires a schedule to be completed (or at least largely completed) prior to analysis. AACE International Recommended Practice 61R-10, Schedule Design – As Applied in Engineering, Procurement and Construction is a good checklist for planning a project and developing a schedule, however there is no focus on risk in the process [3]. The authors believe that risk-informed planning is a novel approach that leads to higher integrity CPM schedules. Therefore, it is one of the key facets of the proposed methodology is SRA as a tool to develop the initial project schedule.

Schedule Contingency
There are informative articles describing schedule contingency, however there is no clear consensus on how to manage it [4a, 4b]. Typically, SRA is not linked to a process whereby the SRA-determined schedule contingency informs the master schedule through tiepoints or nodes. This can create controversy and confusion about what to do with the contingency. The methodology described in this article includes a transparent contingency management strategy at key milestones.

Schedule Updates
A recent article described the “zero-step schedule” and in the process the significant effort and skill required to maintain the integrity of complex, multiple-activity CPM schedules through update cycles [5]. It seems almost always the case that schedule integrity diminishes throughout the update cycles on most large-scale projects, assuming the notion that integrity existed in the original schedule. As any schedule analyst will attest, through each update the number of missing relationship links and constrained dates often increases, eventually reducing the schedule to an elaborate bar chart. The authors believe that this can be attributed to a lack of application of thorough schedule update processes caused by a lack of execution, or perhaps patience, of the project team.

An Intractable Problem
The requirement to provide SRAs at early stages of project development, when no detailed schedules have been developed, has proven to be problematic. Then throughout project execution, as detailed schedule are developed, elaborated, and revised, SRA has proven to be equally challenging. The requirement of risk assessment to deliver transparent and consistent outcome forecasts is frequently in conflict with the equal requirement of execution schedules to direct and monitor day-to-day progress of the work.

A Proposed Solution
The proposed methodology recognizes that planning and scheduling are not simply increasing levels of elaboration of the same process, but discrete functions; each suited to its own application and each requiring its own skill set. The Master Control Schedule (MCS) Planning and Risk Analysis method described herein comprises a process that by separating the planning process from that of detailed scheduling resolves those difficulties associated with the early development, risk analysis, monitoring, and updating of large project schedules.

In the Master Control Schedule (MCS) method, risk analysis, schedule planning, schedule contingency management and schedule updates all take place within an integrated workflow-planning model of the overall project. The detailed scheduling required to resource load, manage work timelines, and monitor productivity consist of separate exercises connected to the MCS through counterpart control node milestones.

MASTER CONTROL SCHEDULE PLANNING AND RISK ANALYSIS METHOD

Master Control Scheduling (MCS) Approach
The MCS methodology integrates a workflow-based Arrow Diagramming Method (ADM) Master Control Schedule with execution schedules through control nodes. Workflow modeling uses the Arrow Diagramming Method (ADM) also referred to as Activity-on-Arrow (AOA). ADM diagrams differ from Precedence Diagrams (PDM) in that their graphics represent workflow and critical work paths with only finish-to-start relationships. Once the ADM is complete and validated by the project lead-team it is modeled in a PDM CPM application to perform schedule analysis, ideally retaining only the finish-to-start relationships characteristic of ADM.

Control nodes are defined as those event points or milestones that otherwise discrete discipline or area schedules have in common. Once all of the control nodes are identified they are modelled in a control level CPM network (the Master Control Schedule) suitable for stochastic analysis. Because the control nodes are dependency-linked to key milestone events in the discipline schedules, contingency can be transferred directly to the execution schedules. Subsequently throughout execution schedule updates, control node actual and forecast dates are transferred back to the Master Control Schedule.

As the MCS methodology separates the task of planning from that of scheduling it allows complete workflows to be developed before all the data necessary for detailed scheduling is available. It relies upon the experience of the project team members within each of their disciplines to contribute

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representative workflows with probabilistic durations. Those workflows are then interconnected at key event nodes or milestones (control nodes) to provide a reliable heuristic-based work plan and a basis for a total duration calculation for the project. The workflow model developed for the early-stage duration validation is subsequently used to monitor control node milestone dates throughout the execution of the project.

**Key Features**

The MCS approach has five key features, it:

- Allows Schedule Risk Analysis (SRA) at the early planning stages of project development, which provides an auditable validation of business case assumptions and commitments for the delivery of capital projects. It also provides for risk-informed planning.
- Establishes a baseline overall project planning diagram that integrates all disciplines into a single workflow from concept to completion.
- Provides a platform for reliable ongoing and repeatable duration uncertainty and SRA. It delivers effective schedule uncertainty and risk analysis results without any requirement to perform risk analysis on detailed execution schedules.
- Allows the responsibility for separate discipline schedule development, risk analysis, monitoring and management to remain with the project discipline leads. It does this by requiring them to develop their own detailed schedules, constrained only by the milestone dates affiliated with the MCS control node dates.
- Allows for transparent contingency management at the control nodes that can be managed by the project lead team.

**Steps of the Master Control Schedule Method**

**Step 1: Developing Workflow Diagrams**

The MCS modelling begins with the development of ADM workflow diagrams for each discipline. Together with the discipline leads, the planning team develops discrete ADM models for each discipline to represent the entire project scope of work collectively.

Project disciplines that may have separate workflow diagrams include:

- Business development
- Regulatory and environmental permitting
- Land acquisition
- Surveying
- Concept design
- Detailed design
- Procurement and contracts
- Construction (including mobilization and demobilization)
- Pre-commissioning, commissioning and start-up (including handover to operations)

Figure 1 shows an example of an ADM workflow diagram for regulatory and permitting. Note that the workflow diagram can include alternate probable workflow paths.

**Step 2: Identifying Control Nodes**

The planning team then identifies control nodes within each of the discipline workflow diagrams. Each diagram will have a control node at the start and finish. In the regulatory example in Figure 1, nodes 1 and 20 are the start and finish control nodes. In this example, finish node 20 would also be an output control node to the start node of the construction workflow diagram (in which it would be represented as an input control node coming from regulatory and permitting).

Control nodes can be linked between different discipline start and finish nodes or at various points in-between. For example, Figure 2 shows the control node at “Design Complete to 60 Percent” of the Detail Engineering Design discipline workflow interconnected to the start node of the “Material Purchase Request for Quotation (RFQ)” activity of the Procurement and Contracts workflow.

A separate workflow sheet, the Control Nodes Worksheet, will show all of the start, finish, and interconnecting...
control nodes. The individual discipline workflow diagrams along with the control node worksheet forms a complete workflow model for the overall project.

**Step 3: Building the Master Control Schedule**

Once all of the discrete discipline workflows have been completed and reviewed with both the discipline leads and the project lead-team, the logic is used to develop CPM schedules for each discipline. Each schedule then becomes a sub-schedule for the overall Master Control Schedule. The Master Control Schedule consists of sub-schedules for each of the disciplines linked through control nodes. The control nodes schedule will consist only of milestones. One milestone dependency is connected to the start and one to the finish of each discipline sub-schedule (nodes 1 and 20 in the example in Figure 1). Additional milestones are connected at each intermediate control node dependency (see Engineering Design node 23 and Procurement and Contracts node 15 in the example in Figure 2).

A key feature of the MCS method is that it links all discipline start, finish and inter-discipline control nodes through the control node sub-schedule. As a consequence, the project lead-team can focus on managing the key events in the overall schedule. The discipline teams then each remain separately accountable and responsible for delivery of their own sub-project within the schedule constraints of the project control node dates. During execution the schedule reporting responsibility of the discipline leads is to provide timely information about any changes to the forecast milestone dates for control node milestones within their discipline work scope.

Figure 3 shows the relationship between Engineering Design control node 23 and Procurement and Contracting control node 15 within the MCS. It also highlights the level of schedule detail within the MCS at both the control node level and the discipline level.

**Step 4: Applying Durations to the Master Control Schedule**

Once the MCS schedule network is complete the discipline teams will estimate durations for each activity in their ADM workflow diagram. Applying these durations to each discipline sub-schedule will provide a first iteration of a deterministic duration for the overall project. Likely, it will be the case that the schedule network will be subject to additional logic and duration data reviews and analysis. This will be necessary to maintain alignment both between the separate disciplines and with any calendar requirements of the business case.

**Step 5: Performing Uncertainty and Schedule Risk Analysis of the Master Control Schedule**

Once there is alignment between the disciplines and the business case based on workflow and likely durations, uncertainty and risk analysis of the MCS schedule network can proceed. Low (or best-case) and high (or worse-case) duration data points are solicited from the discipline teams around the likely (mode) activity durations provided in Step 4. Risk workshops are then conducted with the full project team to identify additional event risks with duration impacts for the MCS schedule network activities followed by risk evaluation and mitigation by the project lead-team.

The duration ranges and activity schedule event risks in the MCS are analyzed using stochastic methods to assess probable dates for both overall project completion and for the control nodes. The overall project completion probability is then reviewed with the business team. Typically, the business team will establish as a target a calculated completion date with a probability of 70-90 percent. This target will be a consequence of the level of business risk tolerance for a project duration overrun of the committed completion time.
Step 6: Building Detailed Execution Schedules

Typically, not all disciplines will produce their detailed schedules at the same time. Rather the detailed schedules will be developed first for the early disciplines, such as Regulatory and Environmental Permitting and concept design. To provide an overall uncertainty-based forecast for the project, the MCS method only needs to accommodate detailed schedules as they can reasonably be developed or as they become available.

The discipline leads will be provided with calendar date probability results for each of their discipline control nodes. They will be required to develop their own separate detailed discipline schedules (see Figure 4). Those detailed schedules will be required to identify as milestones the detailed schedule counterparts of the MCS control nodes. In addition, the detailed schedule CPM analysis will be required to return milestone dates for the MCS control node counterparts equal to the median (P50) date from the MCS analysis.

The MCS method does not require that an overall detailed schedule is developed and maintained for the entire project. Overall project schedule consequences of execution stage

Figure 3 – Example of MCS CPM Model for Detail Engineering and Procurement Disciplines

Figure 4 – Distribution of Table of Probable Calendar Dates
changes within the discipline detailed schedules are reported and analysed by transferring the revised discipline control node forecast calendar dates back into the MCS schedule network as likely (mode) dates. As shown in Figure 4, the MCS method facilitates schedule uncertainty and risk assessment both initially and throughout execution without the requirement to perform SRA on detailed execution schedules.

Step 7: Performing Regular Schedule Updates

At the prescribed schedule risk review intervals, the low and high durations around the revised mode durations are updated in risk workshops along with contemporary activity event risk information. Once this data is collected the MCS schedule network is re-analysed and new control node median data dates are returned to the discipline leads for them to revise their schedules, if required.

It may be the case that in the interval between the prescribed schedule risk reviews there have been consequential changes to the overall workflow logic. For example, the business group may require an acceleration of the completion date. To accommodate this the project lead-team took the tactical decision to issue the material purchase RFQ at 30 percent engineering. The overall schedule would then be shortened, although at the risk of issuing an incomplete bill of quantities. In this case, the logic link to control node 23 of Engineering in Figure 3 would be replaced in the MCS schedule network by a logic link to the node at the completion of 30 percent Engineering (node 22). Engineering Design node 23 would no longer be a control node and would be replaced in the control nodes schedule by new control node 22 (Figure 5). In addition, the risk-consequence of issuing an RFQ with an incomplete bill of quantities would have to be assessed for all activities upon which it could have a duration impact.

Regular schedule update sub-steps are as follows:

1. The discipline teams advise of any changes to their discipline ADM workflow.
2. The discipline teams collect and report actual and forecast control node dates to the risk assessment team.
3. The risk assessment team updates the MCS schedule network logic consequent to any changes in the discipline ADM workflows and affected control node dependencies.
4. The risk assessment team collects and reconciles the control node data and then performs the MCS schedule network stochastic analysis with the current duration range and activity event risk data provided by the discipline teams.
5. The risk assessment team returns the updated control node median dates to the discipline teams for them to affect their detail schedule revisions to remain consistent with the revised MCS schedule network.

Step 8: Ongoing Schedule Management

In the MCS method, schedule contingency is identified as the difference between the median dates provided to the discipline teams and the target probable date selected by the business team in Step 5 (Which is shown at a probability of 80 percent (P80) in the example in figure 4 and other examples throughout this article). The project lead-team monitors and manages this contingency within the MCS schedule. The discipline leads take responsibility for development and management of their work scope within the constraints of the MCS control node median calendar dates.

As the project lead-team manages contingency at the control node level, it has the flexibility to anticipate and accommodate schedule delays without having to comprehend and then assess the discipline schedules at the detail level. Specifically, the MCS method provides the project lead-team with schedule data that allows it to prioritize to the combined metrics of:

- Critical and near-critical workflow paths.
- Control node uncertainty ranges (i.e., the wider the range between a control node’s relative P20 and P80 dates the more uncertain that it will
deliver on time and therefore the more management scrutiny it should attract).

• Individual discipline performance (i.e., as each discipline is responsible for its own schedule the more evident will be the source of delays as either imposed by others through the control nodes or due to the disciplines internal productivity rates).

Unlike the project lead-team, the discipline teams manage their detail schedules around the single-point (deterministic) control node median dates provided to them by the project lead-team. This frees the discipline leads from challenges consequent upon managing the production of detailed schedule deliverables to a range of probabilistic dates.

The detailed schedule update analysis are manageable as the discipline workflow schedules within the MCS schedule network are only linked through MCS control nodes and the project is scheduled with separate detailed schedules for each discipline. This characteristic of the MCS method further facilitates the maintenance of overall schedule integrity while keeping with the discipline teams accountability and responsibility for delivery of the work within their disciplines.

**MCS Workflow Steps Overview**

Figure 6 shows the workflow of an MCS implementation in chart form. In addition the figure indicates the recommended validation loops where the planning team should confirms its assumptions and analysis results.

**CONCLUSION**

The MCS method is an approach with the potential to resolve many of the difficulties associated with the early development, risk analysis, monitoring and updating of large project schedules. There are several characteristics and benefits of this method that have been described in this article, however the two most important concepts are (a) separating the planning tasks of a project from those of detailed scheduling, and (b) linking detailed discipline schedules and high-level integrated schedules through control nodes.

The MCS process provides an overall project planning activity diagram that integrates all disciplines into a single workflow from concept to completion. The detailed discipline schedules are linked to the MCS through discrete control nodes. By connecting the risk analysis output data from the MSC with the detailed discipline schedules, there is potential to deliver reliable, consistent schedule uncertainty information critical to supporting the project lead team’s decisions. This characteristic of the MCS...
method facilitates the maintenance of overall schedule integrity while keeping with the discipline teams accountability and responsibility for delivery of the work within their disciplines.

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APPENDIX

FIELD TESTING OF THE MCS METHOD

Initial Field Test (Pilot Project)
A major U.S. energy infrastructure company is field-testing the MCS method. The purpose of the field test is to validate the MCS method as a standard approach to establishing baseline and overall schedule models and to provide consistent guidelines for schedule risk assessment. As a consequence the project teams will have greater confidence in and understanding of the milestone dates for the project.

Further Field Tests
Two alternative field validations by the authors of the MCS methodology are also underway. One consists of an MCS application to a program of thirteen concurrent improvement projects underway within an operating international airport terminal (the program). This validation differs from the initial field test in that instead of ADM workflow diagrams for each technical discipline, the workflows model each of the separate projects. The control nodes then model the multiple execution dependencies and constraints between the thirteen projects of the program. The third validation consists of application of MCS to construction and activation of a new international airport terminal. In the case of the new terminal, separate ADM models are being developed for each of twenty-four separate commissioning workflows, referred to as “Life-Safety Zones”. The completion of each of the Life-Safety Zones allows start of the activation activities key to commencing operation of the facility. In this case the control nodes will model all of the construction, testing, pre-commissioning and commissioning connections between each of the zones.

It is the anticipation of the authors that a subsequent paper will report on the application, challenges of using the MCS method as it relates to the three different modelling workflows. Those workflows will be a) by technical disciplines (the Pilot Project); b) by projects within an integrated program (Field Test) and; c) by commissioning zones (Field Test).

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Benchmark Estimating
www.benchmarkestimating.co.uk

Black & Veatch
www.bv.com

Brasfield & Gorrie LLC
www.brasfieldgorrie.com

Brown and Caldwell
www.browncll.com.com

Burns & McDonnell
www.burnsmcd.com

Caixa Economica Federal
www.caixa.gov.br.sinapi

Canadian Natural Resources Ltd
www.cnrl.com

Cargill, Inc.
www.cargill.com

CB&I
www.cbi.com

CB&I Project Services Group (CPSG)
www.cbi.com

CH2M Hill Inc
www.ch2m.com

Chevron Corporation
www.chevron.com

China Petroleum Engineering Co. Ltd.
Beijing Company
www.cpebj.com

CNS Y-12
www.y12.doe.gov

ConocoPhillips
www.conocophillips.com

Crawford Consulting Services
www.crawfordconsultingservices.com

d’Escoto, Inc.
www.descotinc.com

Delta Consulting Group, Inc
www.delta-cgi.com

Department of Energy/National Nuclear Security Administration
www.energy.gov

Department of Energy/Idaho
Operations office
www.id.energy.gov

DR McNatty & Associates
www.drmcnatty.com

EnergySolutions
www.energysolutions.com

Equinox Engineering
www.equinox-eng.com

Faithful+Gould
www.fgould.com
An India Section was formally launched at Chennai on Saturday, Nov. 28, 2015. The South India Section took the lead and organized the launch event at The Hilton, Chennai. The event was attended by 70 professionals from reputed organizations like Petrofac, AMEC Foster Wheeler, Engineers India Limited, Saipem, ABB, Wabag, Larsen and Toubro, Professors from IIT Madras, Anna University, Karle Infra and senior members from Project Management Institute, Chennai Chapter.

The grand launch at The Hilton, Chennai began with Philips Tharakan Mulackal, CCP EVP, Vice President International Regions at AACE, welcoming the attendees. The Director, Region 8, Jaimin Mehta, CCP PSP, delivered a short speech mentioning how professionals and organizations can leverage association with AACE for professional excellence and cited a few examples from his own experience.

The launch formally began with lighting of a lamp, a traditional way of beginning auspicious events in South India. Julie Owen, CCP PSP, AACE President; Sudarshan Karle, Director of Karle Group; Chandrashekar Rao, Founder of Shreshreta Solutions; Dr. Koshy Varghese, Professor Indian Institute of Technology, Madras (IITM); Jaimin Mehta, Director Region 8, participated in the lamp lighting.

Chandrashekar Rao introduced the TCM Framework and spoke on “Effective use of RPs and the TCM Framework to de-risk large capital projects in India. He mentioned that passion and commitment are required to adopt global best practices. Rather than quickly fixing things in a panic, planning is needed while executing projects. He mentioned that AACE’s RPs can be adopted by any organization and customized accordingly.

Dr. Koshy Varghese, of IITM, a premier Indian Institute, spoke on the gaps in project controls in India. He elaborated on the gaps in the education system at the under graduate and post graduate levels. He also mentioned that the sophistication of the latest integrated PM software makes it difficult to work without a lot of training and conceptual clarity. He suggested that clients/project owners need to start demanding from contracting agencies for better project control systems. Also, the requirements in contracts should be elaborated on, very clearly. He cautioned, “going up in project control maturity should be in stages and not be done by aiming for a 100 percent at the first stage. Many companies fail due to over expectation by not adopting a step by step maturity approach or by discontinuing these later.” He says IIT Madras will support AACE in all ways to expand its activities in India. He has assisted AACE in developing case studies and success stories in India.

Julie Owen, CCP PSP, President of AACE International, shared the strategic plan of the organization, highlighted strengths and focus areas. She spoke on membership trends and elaborated on the knowledge resources developed by AACE. She spoke about the certifications offered, their benefits and the results of the salary survey. She also engaged in discussion with the participants and answered queries.

Sivakumar, VP Outreach of Chennai PMI Chapter, thanked AACE for choosing Chennai for the launch.
Shown above at the launch of the India Section, Philips Tharakan Mulackal, CCP EVP, VP International Regions; Sankar Subrahmaniyam, EVP, South India Section President; Jaimin Mehta, Director of Region 8; Julie Owen, CCP PSP, AACE President; Chandrashekar Rao, Founder of Shreshreta Solutions; Sudarshan Karle, Director of Karle Group; and Dr. Koshy Varghese, Professor Indian Institute of Technology, Madras (IITM); participate in a lighting of the lamp, a traditional way of beginning events in South India.

Shown above AACE Vice President International Regions, Philips Tharakan Mulackal, CCP EVP, delivers a welcome address to attendees at the launch of the India Section.

Shown above AACE Director Region 8, Jaimin R. Mehta, CCP PSP, delivers an address to attendees at the launch of the India Section on Nov. 28, 2015, at Chennai, India.
Shown above Chandrashekar Rao, founder of Shreshreta Solutions, delivers remarks at the launch of the India Section. He spoke on effective use of RPs and the TCM Framework.

Shown above Dr. Koshy Vargheese of IITM, delivers remarks to attendees at the launch of the India Section. He spoke on gaps in project controls in India.

AACE President Julie Owen, CCP PSP, spoke to the India Section about the association, certifications, knowledge resources, membership trends, the strategic plan, etc.
Shown above Philips Tharakan Mulackal, CCP EVP, Vice President International Regions, gives the welcome to attendees at the launch of the India Section. Seated from the left are AACE President Julie Owen, CCP PSP; Chandrashekar Rao, founder of Shreshreta Solutions; Jaimin Mehta, CCP PSP, Director Region 8; Sankar Subrahmaniyam, EVP, South India Section President; and Dr. Koshy Varghese, a professor with the Indian Institute of Technology, Madras (IITM). The Nov. 28, 2015 launch ceremony was at The Hilton Chennai.

Shown above is part of the large crowd of at least 70 professionals who attended the Nov. 28, 2015, launch of the India Section at The Hilton, Chennai. The launch formally began with lighting of lamp, a traditional way of beginning auspicious events in South India. There were various speakers, including AACE President Julie Owen, CCP PSP.
Sankar, President South India Section, delivered a note of thanks. He thanked all the attendees who had taken time on a Saturday evening to attend the launch. He thanked Mr. Sudarshan Karle and M/s. Karle Infra Private Limited, a Karle Group Company, for sponsoring the section in India. He thanked PMI Chennai Chapter E&C Forum, Mr. Karthik, Mr. Suresh Chavan and Ms. Kavitha of Karle Infra for their voluntary support to make the event successful. He mentioned that, “though Mr. Madhu Pillai, Mr. Logan, and Mr. Mohammed Rafiuddin are not present here, without their advice and support reaching this stage would not have been possible.”

M/s. Karle Infra Private Limited, the real estate arm of Bangalore based Karle Group, offered to provide support and logistical services for section members and potential AACE members in India. Karle Infra has offered its address as the India address for the section, using its conference room facilities for conducting sessions, sponsorship of Indian events including conferences, workshops etc., and use of its office infrastructure for section activities.

The Qatar Section was launched on Nov. 26, 2015. Dr. R. Seetharaman, CEO Doha Bank, was the keynote speaker. The chief guest for the event was AACE International President, Julie Owen, CCP PSP, and the main guest of honor was Chairman of Qatar Society of Engineers, Ahmed Jassim Al-Jolo. The event was a huge success with more than 150 professionals from construction and associated industries in Qatar attending. Attendees included leaders of venerated private and government organizations in Qatar.

In his keynote speech, Dr. Seetharaman gave an overview on the local construction industry scenario and linked this with the global financial condition, the expected future trend of the construction Industry in the region, and the importance of cost engineers in the current economic scenario.

AACE President Owen, in her speech, apprised the audience on the State of the Association (AACE), as well as giving insights on how to implement Program Management Office (PMO) for project success through a technical presentation.

Mohammed Rafiuddin, CCP PSP, Director Region 7, announced the official opening of the Qatar Section, which was followed by Julie Owen cutting the ribbon. Rafiuddin also introduced the team of officers for the Qatar Section which consists of nine officers.

Hussain Al-Omani, CCP CEP DRMP EVP PSP, President of Arabian Gulf Section (AGS), from which the Qatar Section has been formed, was present during the launch. He appreciates formation of the Qatar Section and assured full support of the Arabian Gulf Section to the Qatar Section for its future endeavor.

Dev Tamboli, CCP PSP, thanked each and every one for their support in formation of the Qatar Section and then laid down the vision, mission, and objectives of Qatar Section, and assured its members of the various activities to be conducted by Qatar Section in the field of project management, cost engineering and planning. The Qatar Section will conduct training for professionals, technical meetings, social events and conferences. He appealed to all the professionals to come forward and support the Qatar Section and to serve the total cost management and project controls fraternity in Qatar. Dev also announced launching of the Qatar Section website at www.aacei-qatar.org and introduced various channels of communication for Qatar Section members, which includes email, Twitter, Facebook, and LinkedIn.

KUDOS!! to the Qatar Section officers for making the event a grand success. The Qatar Section officers includes:

- Dev Tamboli – President, CCP PSP
- Haresh Jayanth – Vice President, PSP
- Ryan Ace Tan – Secretary, CCP PSP
- Manoj Joshi – Treasurer
- Avinash Gaikwad – Director Membership
- Sitansh Desai – PSP, Director Technical
- Amit Ranade – Director Events
- Mohamad Daaboul – Director Marketing & Publicity
- M I Mohammed Nizar – Director Administration

For more information about the Qatar Section, kindly visit www.aacei-qatar.org or email: qatarace@gmail.com or contact us@aacei-qatar.org.
Officials at the launch of the Qatar Section include: shown seated from left: Dev Tamboli, CCP PSP; Ahmed Jassim Al-Jolo; Dr. R. Seetharaman; Julie Owen, CCP PSP; Mohammed Rafiuddin, CCP PSP; and Hussain Omani. Standing from left: Avinash Gaikwad; Sitansh Desai, PSP; M.I. Nizar; Mohamed Daaboul, PSP; Haresh Jayanth, PSP; Manoj Joshi; and Ryan Ace Tan, CCP PSP.

Officials at the launch of the Qatar Section include: from left, Mohamed Daaboul, PSP; Sitansh Desai, PSP; Haresh Jayanth, PSP; Mohammed Rafiuddin, CCP PSP; Dev Tamboli, CCP PSP; Julie Owen, CCP PSP; Avinash Gaikwad; M. I. Nizar; Ryan Ace Tan, CCP PSP; and Manoj Joshi.

Dr. R. Seetharaman was the keynote speaker at the launch of the Qatar Section. He spoke on the local construction industry.

Julie Owen, CCP PSP, President of AACE International, speaks at the launch of the Qatar Section.

From left, Haresh Jayanth, PSP, VP Qatar Section looks on while Dev Tamboli, CCP PSP, President Qatar Section, presents a gift to Ahmed Jassim Al-Jolo, Chairman of the Qatar Society of Engineers.

Dev Tamboli, CCP PSP, President Qatar Section, presents a gift to Julie Owen, CCP PSP, President AACE International, at the launch of the Qatar Section in November 2015.
In November 2015, AACE President Julie Owen, CCP PSP, visited Saudi Arabia during her tour to Region 7. She met with the Arabian Gulf Section President and board members. During her visit, she made a visit to Saudi Aramco (the major oil company in Saudi Arabia) and met with Fahd Al-Helal, the VP of Project Management. They had a discussion about cooperation between AACE International and Saudi Aramco. Also, Ms. Owen met with Nabilah Al-Tunisi, Chief Engineer, during her visit to Saudi Aramco. The meeting discussed several issues such as AACE Recommended Practices, certifications, and potential future collaboration.

Owen also visited one of the major family companies, Alturki Holding. The meeting was with the Vice President of Alturki Holding, Marwan Younis, and the Managing Director of Inmasteel, Ibrahim Al-Mubarak.

At the end of her visit, there was a gathering at Le Meridien with the Arabian Gulf Section President, past presidents, board members, and guests. There was an open discussion with Owen about AACE International and future association plans.

Julie Owen, CCP PSP, AACE International President, is shown meeting Nabilah Al-Tunisi, Chief Engineer with Saudi Aramco. At right is Husain Al-Omani, CCP CEP DRMP EVP PSP, the Arabia Gulf Section President, during the Saudi Aramco visit during Owen’s visit to Saudi Arabia in November 2015.
How Do You Handle Life’s Detours?
Wise Decisions Can Start With Noticing Silver Linings

The loss of a job; a bad break-up; a nasty accident; health problems experienced by you or a loved one—these are some of the many things that can turn your life upside down. Could there be a good way to respond to such turns in life? Is it honest to “look on the bright side?” Isn’t the root feeling hurt?

“I don’t think most people could ask you to deny your feelings, but you don’t have to be led by the nose by feelings, which have a primary characteristic of being temporary,” says Steve Gilliland (www.stevegilliland.com), author of the recently released “Detour,” the follow-up to his widely acclaimed “Enjoy The Ride.”

“Life is change – it’s axiomatic. Most of us accept this on an intellectual, abstract basis. But when it comes to experiencing change, we often resist it. Fear of change causes immense yet unnecessary suffering. Personal growth and maturity are based largely on how you respond to life’s unexpected detours.”

Gilliland summarizes a few basic steps to dealing with life’s detours:

• **Ask Yourself About Opportunity**—We don’t like most of life’s detours because they force us out of our comfort zone. New duties at work or a request from a spouse may not only pique our defenses but also make us wonder, “Can I do this?” Fear and anxiety may push us to focus on our weaknesses and convince us of what we cannot do. When we make a simple shift in mentality, however, we can empower the beginning of personal growth by seeing unprecedented challenges as opportunities.

• **Are You Willing to Change?**—If not, then you can’t see opportunity. Change is inevitable, growth is optional. If your wife asks you for a more patient attitude, for example, will you grow with an open heart or dig your heels in. She may not divorce you if you remain stubborn, but your relationship will likely flounder. Seeing a challenge as an opportunity enables self-improvement. And, when it’s time to ask something of your wife, you will have currency with which to work. The same principle applies to work. If you’re asked to take on a new responsibility and respond well, you will gain leverage in your career.

• **Can You Envision Something Better?**—In the process of internally negotiating change, a positive vision can help you tilt the scales of change as something positive. The vision can be specific. If you don’t know how to use software at work that you need to use, imagine how much better your time will be spent once you learn. What will it take to get there? Practice. It may not be effortless, but you’ll have mapped out a solution. The vision can be broad, too. Is it possible to be more patient in general toward life’s detours? Indeed. Simply having more patience toward loved ones, for example, will improve your relationships tremendously.

**About Steve Gilliland** - A member of the National Speaker Association’s Speaker Hall of Fame, Steve Gilliland is one of the most in-demand speakers in the world. He can be heard daily alongside Jeff Foxworthy and other celebrities on SiriusXM Radio’s Laugh USA and Blue Collar Radio. He is a prolific writer and his latest book is “Detour: Developing the Mindset to Navigate Life’s Turns.”

Submitted photo

Husain Al-Omani, CCP CEP DRMP EVP PSP, AGS President, presents a gift to Julie Owen, CCP PSP, AACE International President; and Steven Perry, during a gathering at Le Merdien during Owen’s November 2015 visit to Saudi Arabia.

Submitted photo

Shown above Arabian Gulf Section Board members pose for a group photo with AACE International President Julie Owen, CCP PSP, during a gathering at Le Merdien during Owen’s November 2015 visit to Saudi Arabia.
• Alaska Section

In 2015, the Alaska Section hosted a series of two AACE certification preparation classes for the benefit of its local members and cost professionals. The first class was for the preparation of the Certified Scheduling Technician (CST) certification. It was in February and had an attendance of 12 students.

The second preparation course was for the Earned Value Management (EVM) certification. Nick Kellar, CCP EVP PSP, long time AACE member who chaired the development of the EV certification, and Terry Morrison, CCP EVP, the current Alaska section president, lead the class of 20 students and it was taught over a three week period.

The Alaska Section is also excited to be hosting the first annual Alaska Western Workshop April 8-9, in Anchorage, Alaska. This unique experience will include two days of social activities and presentations showcasing topics such as claims, earned value as applied in government contracting, the very latest in BIM, project control tools and so much more. Your registration provides an exciting opportunity to network with the current AACE President, Julie Owen, CCP PSP, along with past presidents locally and from the association level, owners, executives, managers, engineers and other industry professionals across diverse sectors during the two days of presentations and social events. Please go to: www.aaceak.org/alaska-western-workshop-anchorage.html for more information and to register.

• Arizona Section

On Dec. 5, 2015, the Arizona Section participated in the 47th Annual Angeles del Barrio Children’s Holiday and Wellness Fair. The Chicanos Por La Causa (CPLC) event was at the Barrios Unidos Park in Phoenix, AZ. Volunteers from sponsoring corporations, as well as local community groups, handed out pres-
ents, treat-filled stocking, and hot dogs with soft drinks. Presents included bracelet making kits, art kits, toy ponies, and soccer balls. The event also included on-site health check-ups for attendees and a visit from Santa and his elves.

The Arizona Section was pleased to donate $2,000 to the Arizona State University scholarship fund to benefit three ASU students interested in careers in the cost engineering field. The students were selected based on AACE International competitive scholarship applications submitted in 2015. The scholarships were awarded to the top three applicants attending Arizona universities. Congratulations to the three Arizona State University awardees, Jake Smithwick, Kristen Hurtado, and Stuart Thomasson.

The Section met from 11:30 a.m. to 1 p.m. on Jan. 21, at Kitchell’s CEM Building in Phoenix, AZ. The meeting featured a technical presentation by Ryan Ferguson and Cassie Robertson of DPR Construction on the topic of Net Zero Construction.

Aurora Edmonton Section

The Aurora - Edmonton Section met Oct. 19, 2015, for a dinner meeting with AACE President Julie Owen, CCP PSP, giving a technical presentation titled, Implementation of a PMO at Los Angeles Metro.

Julie has authored many papers presented at various AACE events. She works as the Project Control Manager for LA Metro and has spearheaded the implementation of the PMO there. This paper was presented at the 2015 AACE Annual meeting at Las Vegas and deals with her and the teams experience on implementation of a PMO. In addition, she talked about AACE in general and where she sees AACE moving this year. She has been volunteering for AACE from many years and has worked with the Women in Project Controls Committee, the Young Professionals Committee, and the mentoring program.

The Section met Nov. 18, 2015 for a dinner meeting with AACE Past President Stephen Revay, CCP CFCC FAACE, as the speaker. His technical presentation was titled, Construction Claims: By Owners and by Contractors.

Revay has been active for the past 37 years in the analysis of progress, productivity, and cost on numerous construction projects. He has prepared or evaluated productivity and/or schedule analyses, including quantification of claims on construction projects throughout Canada, in the United States, the Middle East, Asia and South America. He has been qualified as an expert witness in both litigation and arbitration. He has been appointed as the Project Neutral on a $2 billion industrial proj-
Steve has acted as both a mediator and as arbitrator on different disputes. Steve has authored articles for various construction periodicals and conducted numerous seminars on construction disputes and contract administration to owners and contractors alike. He frequently presents at in-house seminars and is a guest lecturer at the University of Calgary. He is a Past President of Construction Specifications Canada. Steve was also President of AACE from June 2010 to June 2011.

The Section hosted its 10th Skills and Knowledge Workshop October 17, 24 and 31, as well as November 7, 2015. The workshop provided a.m. and p.m. sessions each day.

The first a.m. session was on basic engineering economics. This session provided fundamental principles and elements that are vital for determining feasibility. The p.m. session was on advanced engineering economics. This session further elaborated on the fundamental methods and concepts discussed in the basic engineering economics session. The advanced session provided the attendees with an increased knowledge of methods and techniques of determining the financial impacts and feasibility for their respective corporations.

The second day a.m. session was on estimating basics. This session provided fundamental principles and elements that are vital to the estimating process. This session also provided an understanding of specialty estimating techniques for buildings, facilities, process industry and other estimating applications. The second day p.m. session was on advanced estimating. This session further elaborated on the fundamental concepts discussed in the basic estimating sessions by elaborating different techniques for cost estimation.

The third day a.m. session was on basic planning. This session provided fundamental principles and elements that are required for developing the project plan, which includes WBS development, procurement, and resource planning. The p.m. session was on advanced planning. The session further elaborated on the fundamental methods and concepts discussed in the basic planning session. The advanced session provided attendees with an increased knowledge of methods and techniques for scheduling. This session also introduced the concept of what-if analysis and recovery planning.

The fourth and final a.m. session was on progress and performance. It provided attendees with an understanding of earned value management, progress, and performance management. The p.m. session was on cost control and management. It offered a variety of cost management, cost analysis, economic, accounting, optimization and cost/design information applicable to almost any sector of industry and management.

The section organized a two day, four sessions of student outreach programs under Dr. Ming Lu, Associate Professor, Department of Civil & Environmental Engineering, University of Alberta. The sessions were Nov. 20 and Dec. 3, 2015.

Groups of four students formed a team and made a presentation on estimates for a 5,400 square foot reinforced concrete garage building. The winners for the various sessions included:

- Division 1 group 2: Shelby Barnstable, Bryan Christopher Joosse, Thomas James Skowronski, and Ryan Anthony Morgan.
- Division 1 group 6: Brittany Mary-Margaret Koebel, John Peter Deys, and Daisy Ann Holod.

The AACE Edmonton Aurora Section thanks all the participants for a wonderful show.
**Houston Gulf Coast Section**

At the Houston Gulf Coast Section, the November 10, 2015, presentation by Don Hill, Senior Vice President LNG Operations from CB&I, was on par with the prior excellent presentations in September and October. Don’s presentation on the ‘Importance of Company Culture on Project Success’ was welcomed by anyone who has lived through a merger/acquisition. CB&I’s focus on the right safety culture was a great reminder that we each have a responsibility to be our brother’s keeper.

The 2015 season ended with a presentation on December 8 by Steve Sloat, who was a professional race car driver and retired from the U.S. Marshal Service. Steve began his career as a narcotics investigator, then became a Deputy U.S. Marshal. After 15 years of chasing the bad guys and getting shot at, he decided to turn in his badge and gun for a helmet and driving suit.

The Houston Gulf Coast Section’s 2015 Houston Food Bank Drive during November and December resulted in providing 792 meals for Houston area families.

**Montreal Section**

On Dec. 8, 2015, the Montreal Section was treated to a presentation entitled, *How to Avoid or Minimize Claims on Construction Projects*, followed by an interactive discussion on the topic with guest speakers Celina Ma and Zaher Hmayed, of Examine, construction consultants specializing in claim preparation, evaluation, and analysis. Zaher specializes in dispute resolution, construction claims, and project audits and reviews. Celina is best known for her work in scheduling and delay analysis and has developed specialized tools for use in auditing construction schedules and capturing and analyzing field data required for monitoring on-site labor productivity. She serves on the board of the Montreal Section.

Claims are an inevitable part of construction projects process that may explode into more complex, expensive and time consuming dispute resolution procedures. Avoiding or minimizing claims starts with a claim conscious approach when...
drafting contracts and planning the project and continues with the control and management techniques applied during the construction process.

The presentation expanded these points and covered de-

Three speakers presented the December 2015 Montreal Section meeting technical program. Shown above from the left are: Zaheb Hmayed, Hagire Emrani, and Celina Ma.

Dr. Osama Moselhi of Concordia University was the guest speaker at the November 2015 Montreal Section meeting. His topic was, “Demystifying Asset Management for Infrastructure Projects.”

Attendees at the November 2015 Montreal Section meeting listen to a talk by Dr. Osama Moselhi of Concordia University.
veloping a clear definition of project scope, inclusion and understanding of the key contract clauses, the importance of the definition of roles and responsibilities, thorough planning of the project, early warning signs and how to respond, the role of effective coordination and communication, and the importance of complete and thorough documentation.

There was extended audience participation and discussion including questions about evaluating schedule delay impact, contract clauses regarding change management, dispute avoidance, and various types of precautionary measures to avoid or minimize claims.

On Nov. 10, 2015, the Montreal Section enjoyed a presentation by Dr. Osama Moselhi, Professor of Engineering in the Department of Building, Civil, and Environmental Engineering at Concordia University and a Fellow of ASCE, CSCE, and AACE International. With over 40 years of professional and academic experience, he is the recipient of numerous honors and awards and has authored and co-authored over 350 scientific publications.

The presentation, entitled Demystifying Asset Management for Infrastructure Projects, was delivered at the Concordia University Campus. The subject of asset management for civil infrastructure such as bridges, elevated expressways, roads, and underground piping works is a timely one as many cities are in a constant state of construction to repair or expand aging or outdated infrastructures. Taken straight from the news headlines, much needed work on these assets affects us all. The presentation explained the importance of asset management and demystified the process with a discussion that covered the definitions and essential functions of asset management, deterioration models, and technologies used for assessment of various types of assets, risk management of assets, replacement planning, budget allocation and cash flow, and balancing the quality of service and maintenance costs.

The Hatch Montreal office was host to the Montreal Section on Sept. 25, 2015, with a technical program entitled: “Highlights of the Annual Meeting 2015,” in which several presentations from the July 2015 Annual Meeting in Las Vegas were selected and summarized by members of the Montreal Section who had been in attendance. This is an annual tradition of the Montreal Section going back many years to start the new season’s technical program each year and encourage attendance at the AACE Annual Meeting. Thanks to the original authors and speakers for their kind support. The topics “highlighted” were as follows:

- **The Evolving Discipline of Project Execution** was authored by Richard Plumley, EVP and Stefan Ciuk. The paper describes innovative methods to report KPIs, including the “box chart” and the paper explains how to enhance Earned Value (EV) indicators using the Best Value Performance Measurement (BVPM) system. The BVPM system uses a process of accumulation, elimination, and correlation to refine and enhance EV system indicators. Highlights of this Annual Meeting paper were presented to the Montreal Section by Les McMullan, FAACE, of Hatch.

- **Owners do not Need Project Controls! – Jeopardizing Project Outcomes** is an Annual Meeting paper authored by Paul G. Williams and Stephen L. Cabano. The paper demonstrates that owners actually do indeed need project controls and how to adapt project controls to project size and complexity. Highlights were presented to the section attendees by Chantale Germain of Hydro-Quebec.

- **Forensic Schedule Analysis and Discretionary Logic** is a paper authored by John Livengood, CCP CFCC PSP. The paper describes various ways to evaluate schedule delay using forensic methods. Highlights were presented to the attendees by Ali Al-Ahmad and Robert Garven of Revay & Associates.

- **The Ten Best PM Approaches to Avoid Claims** is authored by Christopher Carson, CEP DRMP PSP FAACE, and Glen Palmer, CFCC PSP. The paper provides a top 10 list of essential ways to be proactive and avoid or mitigate construction claims. Highlights were presented to the section attendees by Les McMullan, FAACE.

The meeting included the award of university student scholarships, sponsored by the Montreal Section and presented to Laya Parviz Sedhy and Farzaneh Golkhoo who were in attendance. Both expressed their appreciation to AACE International and the Montreal Section.

- **Southern California Section**

On Nov. 17, 2015, Southern California Section gathered for a dinner meeting at One Gateway Plaza “Metro Headquarters,” Los Angeles, CA. Richard (Rick) Clarke, Executive Director of Program Management, gave an engaging presentation on, “Managing LA Metro’s Capital Program Mega Projects On-Time Within Budget.” Los Angeles County is in the midst of delivering a mammoth capital infrastructure program valued at $36B that will drastically change the transportation landscape in the Los Angeles County. Rick provided an informative presentation on the current Metro capital project portfolio with emphasis on both ongoing...
and upcoming projects, including current project status. He identified current obstacles and challenges encountered by the Los Angeles Transportation Program. He also discussed management strategies to deliver projects on-time within budget that exceed stakeholder expectations. In closing, he discussed the latest plans for the 2016 ballot initiative, which could potentially increase the LA Transportation Capital Program by 300 percent in upcoming years, offering tremendous opportunities for both consultants and build contractors in the marketplace.

**United Arab Emirates (UAE) Section**

One of the very energetic sections around the world is the one in the United Arab Emirates. UAE section, an AACE Platinum award winner for three years in a row, has recently arranged an interesting number of events and inked remarkable agreements. An assortment of topics is a vital aspect in how the UAE Section chooses its speakers for events, and this year it started with a technical presentation about, “Building Information Modelling in 4D.” The UAE Section has attempted co-hosting events with events management companies and it proved successful in terms of the number of attendees and where they are coming from. A significant example is the recently co-hosted “Forensic Analysis of Variations and Claims” delivered by the notable AACE presenter James G. Zack, CFCC FAACE. The event attracted 62 attendees, flying in from eight different countries in addition to the UAE, creating an assortment of 12 nationalities and creating an environment which was quite diverse and engaging.

The UAE Section members were delighted to end the past year with a visit from Martin R. Darley, CCP, the AACE International president at the time, and were lucky enough and honored to host the current AACE International President Julie K. Owen, CCP PSP, over three exciting days in Dubai. During Julie’s visit to the UAE Section, Julie delivered a lecture at the UAE Society of Engineers and was a keynote speaker at the Arabian Tunnelling Conference and Exhibition. The directors of the UAE Society of Engineers showed great admiration and interest in AACE International and there were talks about future cooperation and a Memorandum of Understanding (MOU) is underway. Among the most significant accomplishments of Julie’s visit was the UAE Section signing a Memorandum of Understanding (MOU) with the UK’s Heriot Watt University at their Dubai Campus. Julie also delivered a lecture at the university attracting a large number or under- and post-graduate students who also got introduced to AACE International and some became members within days. Julie’s visit also had some leisure activities where she and several board members visited an oriental restaurant in the desert of Dubai and enjoyed the night and the live shows. She also attended one of the UAE board meetings and had a delicious Turkish dinner afterwards.

The UAE Section has put its presence on social media as a priority for reaching out to current and attracting new interested members. It revived its Facebook page which had 80 fans and
Members of the UAE Section are shown at a 2015 Building Information Modeling (BIM) 4-D event.

went up to 15,000+ fans and launched a Twitter account which tweets its news.

The UAE Section is striving to enhance its presence with more new members and to enrich its program for the year having a number of confirmed speakers, more events, and perhaps more MOUs with prestigious academic and professional institutions. Visit the Section’s Facebook page at: facebook.com/aace.International.uae or its Twitter page at: twitter.com/AACE_Int_UAE.

How To Maximize The Risk-Reward Relationship In Corporate Settings

A Safe Environment For Expressing Ideas Plays A Key Role In Innovation

Innovation is the quality desired by business leaders, who tend to believe that if you’re not innovating, you’re dying a slow death. While volumes have been written about the path to reliable innovation, corporate coach Maxine Attong has found none with the key ingredient that she has found so compelling in her work, safety.

Unusual and unconventional ideas are a sign of strength in a company, Attong says. It shows that team leaders really are open to innovative ideas. She further explains the importance of the idea and how to create safety to voice risk-taking ideas.

• A Safe Space is the “Office Vegas:” What Happens in the Room Stays in the Room—While business plans may be neatly fitted into a blueprint, the reality of any strategy involving humanity needs to account for our unpredictability. We’ve all had those days in which we were stressed out by personal matters. Meanwhile, deadlines and expectations loom as the workload continues to pile up. The more you try to ignore your personal problems the more they come to mind.

“What would it be like if you could go into a room where you have total support and have a good cry for the dead dog, vent how angry you are at your loved one, or rant about how stressed you are over your coworker’s behavior,” Attong says. “When you are done, you leave the room knowing that your behavior was not judged, and your statements were confidential. That’s the kind of safe space that can facilitate innovation.”

• Human Beings Have an Amazing Capacity for Brilliance—However, the list of negative distractions is formidable: sick children, marriage or divorce, financial issues and other problems can take a focused mind off track. A safe space can get a mind back on track and people working creatively on new solutions; enable leaders to develop an outstanding team and instill stability. Creating a safe space can create a work environment in which team members actually look forward to work, a place where they can drop off their problems at the door and deal with them later. A safe place enables members to keep their egos in check and feel open to explore ideas. Innovation is often fun; it doesn’t have to be scary.

• Safe Spaces Work on the Inertia of Several Human Traits—Safe spaces have been shown to work in other human affairs, including religion, addiction recovery programs, therapeutic counseling or coaching. People need to be heard, but they won’t reveal themselves unless they feel free from judgment. And, we need sensible guidance. After the safe space has been explained to team members, they’ll feel free to pursue productivity. The space assumes that the adults in the room want to be in charge of their lives and want to have relevant work experiences that contribute to their overall goals.

About Maxine Attong

Maxine Attong (www.MaxineAttong.com) has been leading small and large teams for the past two decades—both in organizational settings and in her private coaching and facilitation practice.
How to Submit Section News to the AACE International Bulletin

When Will Your Section News Submission Be Published?

The digital Source magazine includes all “Section News” submissions. Source has a submission deadline of two months in advance of the issue date. Please review the following production schedule. It lists the submission periods for the six bi-monthly issues of Source magazine in 2014.

2015-2016 Source Section News Submission Schedule

February 2015
• Items submitted from Oct. 16 - Dec. 15, 2014
April 2015
• Items submitted from Dec. 16 - Feb. 15, 2015
June 2015
• Items submitted from Feb. 16 - April 15, 2015
August 2015
• Items submitted April 16 - June 15, 2015
October 2015
• Items submitted June 16 - Aug. 15, 2015
December 2015
• Items submitted Aug. 16 - Oct. 15, 2015
February 2016
• Items submitted from Oct. 16 - Dec. 15, 2015
April 2016
• Items submitted from Dec. 16 - Feb. 15, 2016
June 2016
• Items submitted from Feb. 16 - April 15, 2016

This production schedule is based upon production schedules at AACE headquarters, as well as our printer having two to three weeks production time to take our in-house files and convert them to the Nxtbook software for posting. Enhanced features like audio, video, website links, and more will be a part of each issue of the Source. Some technology features will require additional production time and earlier deadlines. The magazine is to be ready for posting by the first of the month.

Within 2 to 3 business days of submitting a “Section News” item, you should receive a return confirmation e-mail that your submission was received at AACE headquarters.

How to Submit Text and Photos

Please submit any and all text as a part of the e-mail or as a Microsoft Word file attachment. Please submit any photo or photos as individual attachments in tiff or jpg formats. Do not embed photos in Microsoft Word files.

For photos to be used, we require either large original files or print size photos at 300 dpi (dots per inch). We can convert large 72 dpi submissions into the required 300 dpi. This process shrinks the size of the original submission. We cannot use photos taken on cell phones. For photos to be published, they must be in focus, of print quality, and wide enough to fill the width of the column layout.

Please include the names and titles of each person shown in any photos. Please list names from left to right or refer to those shown as being above left or right. For group photos please list names from left to right, beginning with the front row and working to the back. Do not list the Section officer first unless he or she is photographed on the left with guest speakers on the right.

All submissions should be e-mailed to editor@aacei.org. Please use the official name of the Section as approved by the AACE Board when the Section’s charter was approved. Never refer to the Section as a chapter.

Contact AACE Concerning Missing Submissions

Generally, all submissions received in the above scheduled times will be published in the listed issue. Items are not held because of space restrictions. There is no waiting list and no preference is given to one Section over another. Questions about incomplete submissions or failure to follow these submission guidelines could delay publication. Text will be published without submitted photos if the photo does not meet the listed quality requirements.

If a submission is not included in the designated issue, please e-mail or call the Managing Editor to ensure that it has not been lost or misplaced. Call or e-mail if you do not receive a confirmation e-mail within 3 business days of submission.

AACE reserves the right to edit all submissions and/or to refuse to publish any submissions determined by the Managing Editor or the Art Director to not meet the standards of the journal. Any appeals of these decisions will have a final decision determined by the Executive Director.

Any Section representative with questions is advised to e-mail editor@aacei.org or call the Managing Editor during regular business hours (9 a.m. to 5 p.m. Eastern Standard Time, Monday-Friday, except holidays and special closings.)
FEBRUARY 2016

4  Owners’ Night,
The Southern California Section of the Construction Association of America (CMAA)
The Grand Event Center
Long Beach, CA
Contact: www.cmaasc.org

15-17  Petroleum Engineering for Non Engineers,
Mobility Oil & Gas Limited
London, United Kingdom
Contact: mobilityoilandgas.com

17-19  International Roofing Expo, Informa Exhibitions U.S.,
Orange County Convention Center
Orlando, Florida
Contact: www.theroofingexpo.com

25  Avoiding the Traps of Construction Contracts:
5 Things You Need to Know,
The Southern California Section of the Construction Association of America (CMAA)
The Grand Event Center
Long Beach, CA
Contact: www.cmaasc.org

MARCH 2016

4-6  Western Winter Workshop,
The San Francisco Bay Area and Southern California Sections of AACE International
The Hyatt Regency
Indian Wells, CA
Contact: www.westernwinterworkshop.com

24-25  3rd Annual Northeast Total Cost Management Symposium, Region 2 of AACE International
Doubletree Hotel, Valley Forge, PA
Contact: www.tcm-symposium.com

MAY 2016

24-29  EURO-MEDO-SEC-1,
The First European and Mediterranean Structural Engineering and Construction Conference,
The International Structural Engineering and Construction Society (ISEC),
Davutpas Campus, Yildiz Technical University
Instabul, Turkey
Contact: www.isec-society.org

JUNE 2016

26-29  AACE International’s 2016 Annual Meeting,
AACE International
Sheraton Centre
Toronto, Ontario, Canada
Contact: phone 1-800-858-COST
fax (304) 291-5728
info@aacei.org
www.aacei.org

Please submit items for future calendar listings at least 60 days in advance of desired publication.

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Technical Article
Reviewing Resource Leveled Schedules Using P6™

Technical Article
The Planning Fallacy and its Effect on Realistic Project Schedules

Technical Article
Forensic Schedule Analysis and Discretionary Logic

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