PRESIDENT’S MESSAGE
MAKING AACE RELEVANT FOR THE 21st CENTURY

TECHNICAL BOARD NEWS
INDIRECT COSTS ON CONSTRUCTION LABOR

CERTIFICATION CORNER
HOW TO WRITE A DRMP MEMO

BONUS CONTENT - TECHNICAL ARTICLE
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HOW TO GAIN CONTROL OF YOUR FREE TIME

CLICK to watch Laura Vanderkam talk about “How to Gain Control of Your Free Time” presented by TED.

There are 168 hours in each week. How do we find time for what matters most? Time management expert Laura Vanderkam studies how busy people spend their lives, and she’s discovered that many of us drastically overestimate our commitments each week, while underestimating the time we have to ourselves. She offers a few practical strategies to help find more time for what matters to us, so we can “build the lives we want in the time we've got.”

Between careers and kids, many women feel that they are too busy to cram in anything else. To test the truth of this feeling, author Laura Vanderkam began logging her time for each of the 168 hours of the week. Among her surprising findings: we retroactively overestimate the amount of time spent stressing about work while underestimating our available downtime.

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.
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The average age of an AACE member is just under 50. While that is a better statistic than over 50, it highlights the need for AACE to increase its membership of younger professionals. Actually—our future depends on it. To do this we need to modernize our message and deliver that message more directly to Generation X and the millennials. Fortunately, AACE has already started to address some of the critical areas of change needed to achieve this goal and therefore survive. At the same time, there is a pressing need for our current Generation X and millennial members to step-up and help baby boomers like myself, who sometimes get lost in the new age of LinkedIn, Twitter, and Facebook.

As a starting point, let’s look at five major areas where AACE is on the right track but still needs improvement. First, we have had some success in diversifying our leadership based on age, gender, and race. Neither of our candidates running for President-Elect fits the old-white-guy stereotype, and many of our Board and Associate Board members have more diversity than in the past. (In line with this thought, please remember to vote starting 1-Feb-17 in our on-line election that runs through mid-March. It is your right and duty in our democratic society). Nevertheless, our diversity objectives still have a long way to go. Our Rising Professionals and Women in Project Controls groups are working to increase diversity. In addition, many of our larger and international Sections are led by millennials and near millennials.

Second, we have taken some steps toward modernizing our electronic footprint so that more of what we do is available online. Some studies show that millennials find associations’ technological capabilities (or lack thereof) to be the major stumbling block to participation. With the tenth anniversary of the I-Phone and the tremendous change it has created in how we work, take pictures, watch the news, and interact with our family, friends, and acquaintances, is it any wonder that millennials find the old association models of face-to-face meetings and email too slow to sustain interest. With that in mind, AACE’s new website will allow better access to all AACE’s news and services. We want all our members to be able to access our great offerings whenever and however they choose. Our current and soon to expand presence on LinkedIn and Facebook is a start (only a start) to making our communication system appropriate to the 21st century. We will soon have blog capabilities and better forum-like communications that will facilitate interaction amongst our members. At the same time, we need the Generation X and millennials to continue to assist us in these efforts.

Third, AACE’s surveys show that networking is one of the main reasons our members belong. Surveys of millennials also show that networking is a principle reasons for them to join professional associations. They want to find people facing similar professional challenges in a rapidly changing industry, find fellow future work colleagues, and find people that act as guides or mentors as they advance through their professional lives. AACE offers all of these elements that Generation X and millennials need to achieve these goals. Whether in our mentoring and job search programs, Section meetings, regional symposia, or at the Annual Meeting, all our members and future members can find the networking support they and all professionals need.

John C. Livengood, Esq. CCP CFCC PSP, President

PRESIDENT’S MESSAGE

MAKING AACE RELEVANT FOR THE 21ST CENTURY
Fourth, millennials are looking for information. AACE’s current technical content is second to none, and using our new website, we can now access it more quickly and easily than ever before. Our Recommended Practices, developed in support of the TCM Framework, provide information in an online format. While we have not converted this huge library of information to YouTube video clips (should we?), we do have an extensive amount in audio and video presentation format. Our 2016 Toronto Annual Meeting technical presentations are now available on-line.

Fifth, educational opportunities for Generation X and millennials to fill-in gaps in their knowledge, expand their skills in new areas, or just provide technical refreshers has been identified as essential. Our educational offerings, while not yet completely able to take advantage of 21st century technology, are rapidly developing so we can offer learning opportunities where, when, and how our members want it—on any platform they prefer to use. These educational opportunities remain the linchpin of AACE’s relevance to our members. Through education we can support the rapid development in all aspects of estimating and project controls. With the recently enacted Federal legislation of the Program Management Improvement and Accountability Act of 2015 (PMIAA), our members will have a more powerful voice in how projects throughout the nation are managed. Our members will need specialized training to meet these needs and AACE will have to be there to make that happen.

AACE’s premier event, our Annual Meeting, (planned this year for June 11-14, at the Hyatt Regency Orlando, in Orlando, Florida), is also in the process of modernizing and changing. We will continue to offer our outstanding technical and training programs, but we are also taking the first steps toward making the Annual Meeting more relevant to all our members—especially our young professionals and international members.

As always, we need your help. Our Young Professionals Committee has been working hard to identify great ideas that AACE can implement to make AACE more relevant to them and their futures. For example, they have identified many suggestions that are now being evaluated for implementation. In no particular order of priority these include; common web page format for every Section; more social media and email blasts with insightful (and short) messages; more personal recognition of younger members to build a sense of community; a more cogent “toolbox” for members to better explain what AACE offers its members; an improved corporate participation model; better mentoring; and finally, more and better online educational offerings.

If you have noted a trend in my letters and presentations to the membership these past months, I believe AACE must undertake several efforts simultaneously to maintain and expand our presence and relevance to our industry. Through education, Web presence, modernization of our Annual Meeting, and better marketing, we will expand what we can do for our membership, make access easier, and not incidentally, gather new members. Your participation at the local, regional, national and international levels is needed and will be instrumental in shaping the future of our industry and association!

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 web.aacei.org.
To enhance project delivery and methods to the federal government, President Obama on Dec. 14, 2016, signed into law the Program Management Improvement and Accountability Act of 2015 (PMIAA). Bipartisan support of this legislation included Senator Joni Ernst of Iowa, Senator Heidi Heitkamp of North Dakota, Representative Todd Young of Indiana, and Representative Gerry Connolly of Virginia.

The key thrust of this law is to demonstrate prudent spending of taxpayer dollars on large, complex projects. The PMIAA also reforms federal project management fundamentals in the following four dimensions:

- Creating a formal job series and career path for program managers in the federal government.
- Developing a standards-based program management policy across the federal government.
- Recognizing the essential role of executive sponsorship and engagement by designating a senior executive in federal agencies to be responsible for program management policy and strategy.
- Sharing knowledge of successful approaches to program management through an interagency council on program management.

Opportunities for AACE International

Since 2016, the AACE International Government Liaison Committee has been reinvigorated. Given that PMIAA has opened the door to external associations, the AACE team will lead efforts to build linkages with government agencies for the purpose of AACE being recognized as the technical authority in cost and schedule management for programs, projects, products, assets, and services. The committee will strive to create value by advancing AACE technical knowledge and professional development. Even though information technology (IT) represents the lion’s share of the federal project and program portfolio, AACE’s niche position fits construction, aerospace, and defense projects as well. The AACE Government Liaison Committee, working in concert with the AACE Board of Directors and AACE headquarters, assists in activities necessary to ensure the successful on-site execution of the Federal Agency Roundtable. In line with PMIAA, AACE International will address each reform in the following manner:

- Promote AACE membership, AACE Section activity, and AACE certifications for federal employees.
- Infuse Total Cost Management (TCM) as the standard for asset creation and asset management into the federal DNA.
- Develop relations with federal executives, especially those working on high-value, mission-critical federal programs.
- Facilitate knowledge-sharing between AACE and federal agencies with a renewed cooperative agreement with the Defense Acquisition University (DAU). AACE members contribute heavily to the GAO Cost Expert Panel.

The Way Forward

AACE International will be presenting a Federal Agency Roundtable on March 22. The purpose of the Federal Agency Roundtable series is to institute AACE standards and methods into the project delivery of the federal government. The 2017 Roundtable is will feature a dialogue between federal executives and practitioners on the proposed topics of: “Estimating Realism, Cost-Schedule-Risk Integration, and How Con-
tract Language Can Enhance Project Success." The 8 a.m. to noon event will be at the George Washington University in Washington, DC. Registration information and additional details will be released soon for this roundtable.

Previous AACE sponsored Federal Agency Roundtables have been well received. Program managers and project controls professionals involved in the federal government are invited to participate in the March 22 roundtable to exchange best practice advice and concerns with professionals from government agencies. Come hear what issues your colleagues at other agencies are dealing with and share your best practices.

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Say What? Understanding the True Meaning Behind What Customers Tell Us (Or Don’t)

Kate Zabriskie

In the world of sales and customer service, what people say and what they mean are not always the same thing. Unfortunately, many of us are listening impaired when it comes to getting to the heart of our customers’ messages.

The good news is there’s hope. With some practice and a little bit of discipline, you can tune up your service ears and grow your relationships. The following are some of the most common red flags to which you should pay attention.

When customers say “Maybe,” they often mean “No.” “Maybe” may mean never. When you hear that word, keep asking questions. You have your customer or prospect’s attention now and a chance both to clear up some misconceptions and make a sale or at a minimum to understand why he or she is resistant.

In the same lane of the vagueness “maybe” occupies, is another phrase that communicates very little. You’ve heard it before and probably used it yourself, and that’s the word “fine.” Maybe it is, and maybe it isn’t. People will often say “everything is fine” in lieu of “go away” or “totally horrible, but I don’t feel like engaging in conversation about it.” If you ask something specific, you’ll learn more. “Which part of the meal was your favorite?” is hard to answer with “fine.” Instead, you’ll most likely discover what your customers liked and what they didn’t.

When customers ask “why,” they are usually expressing displeasure of some sort. Too often, service and salespeople miss the real meaning behind these inquiries. “Why is only one register open” means “open another register or two!” Listen for “why,” and respond with something better than “I don’t know” or “you’ll have to ask my manager.” Although your customers aren’t jumping up and down with steam coming out of their ears or carrying gigantic flags with the word “why” emblazoned across them, somewhere lurking behind the question are people on their way to unhappy.

Kate Zabriskie is the president of Business Training Works, Inc., a Maryland-based talent development firm. She and her team help businesses establish customer service strategies and train their people to live up to what’s promised. For more information, visit www.businesstrainingworks.com.

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Included here is the slate of candidates for the 2017 election. Guidelines allow candidates to have posted a biography and goals/objectives for their respective offices. Annual AACE International elections are conducted electronically from Feb. 1 through 4 p.m. on March 15.

Adding Candidates by Petition

The AACE Bylaws provide the membership the option to petition to add candidates. The Bylaws, Article II, Section 4, reads: “Other nominations for the office of Director, or the office of an Officer of the Association, except for the position of Vice President Technical Board, Vice President Education Board and Vice President Certification Board, may be made by petition signed by at least 20 members in good standing. The petitioner shall be responsible for (a) obtaining in writing the agreement of the nominee to serve if elected, (b) securing the biographical data of the nominee, (c) submitting the petitions, the agreement, and the biographical data to be received by the Vice President-Administration no later than December 15th of each year. Each candidate’s name and biographical data shall be made available to the membership no later than December 31st of each year.”

Campaigning is Prohibited

The Board of Directors recognizes that the professional reputation and experience of candidates for Association office are ample testimony to their qualifications and ability to serve. Further, it is believed that these credentials do not need amplification and that campaigning for office by, or on behalf of, candidates is unnecessary, undesirable, and unprofessional.

After nomination, campaigning is defined as organized oral or written solicitation of votes or support, either by a candidate, or by an individual member or section, on behalf of a candidate. A proven violation of this policy shall be considered as prejudicial to the best interests of the Association and a breach of professional ethics. Such conduct will be subject to disciplinary action as provided for in the Association Bylaws. Further, a proven violation(s) of this policy by an aspirant to office, after due hearing in accord with the Bylaws, shall disqualify said individual from holding Association office.

The AACE International Canons of Ethics also states that, "Members will not campaign, solicit support, or otherwise coerce other cost professionals to support their candidacy or the candidacy of a colleague for elective office in a technical association."

To Vote, Members Must Cast a Ballot Electronically On or Before 4 P.M. Eastern US Time on March 15

Election of officers and directors will be by use of an electronic ballot. The official election ballot for officers will be posted and available to each member and associate member on February 1, 2017. 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 shall properly signify on the ballot the voter’s choice for the various officers. A security feature of the electronic voting system allows members and associate members to vote only once. A voter can print out a receipt that will include an individual verification number as proof of having voted.

For election of Directors-Region(s), these candidates will be listed as a continuing or additional page for members or associate members in the regions electing candidates during the 2017 election. Each voter shall properly signify on the ballot the voter’s choice for the director.

Any member or associate member with questions or other concerns is asked to contact Headquarters for assistance.

Voting will end as of 4 p.m. eastern US time on March 15, 2017. The electronic system will block any voter from casting a ballot after 4 p.m. on March 15, 2017.
Alexia Nalewaik, CCP FAACE

Dr. Alexia Nalewaik, CCP FAACE, is a project controls director with 25 years of experience in the industry. She joined AACE International as a member in 1994. She holds a Ph.D. in project and program management, an MS in structural engineering, and a BA in physics. Alexia is a CCP, a certified construction auditor, and a chartered quantity surveyor. She is a Fellow of AACE International, RICS, and ICEC.

She has served AACE International on various boards and committees continuously since 2003. Roles held include:

• Southern California Section President (two terms)
• Director Region 6 (awarded “Regional Director of the Year”)
• Vice-President Administration
• Chair of the Women in Project Controls task force
• Chair of the Inter-organization Committee (Cooperative Agreements, Government Agencies, and Corporate Sponsorship)
• Member of the Governance Committee
• Member of the Ethics Task Force
• Member of the Executive Director Selection Committee
• Member of the Fellow Admissions Committee
• Member of the Decision and Risk Management Certification Committee

Recently, Alexia co-authored RP 77R-15 (Quality Control / Quality Assurance for Risk Management). In past years, she contributed to RP 20R-98 / RP 21R-98 (Project Code of Accounts) and RP 11R-88 (Required Skills and Knowledge). She was a reviewer for the first edition of the TCM Framework. She also recently contributed to GAO-12-120G (GAO Schedule Assessment Guide) and the RICS guidance note on Project Controls in the North American Market. Alexia has presented numerous technical papers at AACE International’s Annual Meetings and other conferences worldwide; she has published over 50 peer-reviewed papers, and recently published her first book.

Goals and Objectives:
The strength of AACE International lies in its outstanding technical body of knowledge and the tireless passion of its volunteers. Through the Association, we provide our members, project communities, owners, educators, and employers with unparalleled expertise and resources for project success.

As president, I will:

• Work with the board to satisfy the vision and mandate of our strategic plan.
• Hold Association leadership accountable for its value to members.
• Invite collaboration and initiatives from members and institutions, to apply our body of knowledge worldwide to research, technical publications, education, and certification.
• Identify and address areas where members and their employers need support.
• Increase visibility, recognition, perceived value, and the prestige of AACE International and our profession.

Thank you for considering me for election. ✪

Calvin Speight Jr., CCP

Since joining the AACE International in 2008, Calvin Speight, Jr., CCP, has had an active role in the National Capital Section as an exam proctor, Treasurer, Vice president, and President. He most recently served as Region 2 Director, 2014-2016. At present, Calvin is the Government Liaison Committee Chair. He has also been published in Cost Engineering. He earned a B.A. in Business Administration from Rutgers University, 1985, and an M.B.A. from the University of Pittsburgh, 1990. Certificates held include Project Management from UC Irvine, 2006, and Advanced Project Management from Stanford University, 2012. He is a CCP, PMP, and MRICS.

Calvin is the owner of Project Executive Outcomes LLC, a consulting firm focused on cost-schedule-risk integration of major projects with the vision and leadership that successfully integrates and optimizes: business case, technology, sustainability goals, resiliency, and asset management. In the energy vertical of a leading consulting firm, his expertise impacted public policy decisions concerning military health, defense renewable energy, cost restructuring of civil agencies, and risk assessment for NASA. Prior to consulting, leadership roles held included Business Planning Manager at Pacific Gas & Electric and Senior Cost Engineer for Southern California Edison Nuclear Organization. Top-line revenue experience was gained as the CFO of a start-up construction firm that focused on public school capital improvement programs. In short, he can bridge the gap between engineering and management.

Goals and Objectives:
Challenges concerning infrastructure, energy, and the environment seem endless. AACE International membership and certification offer a full spectrum of solutions that translate rhetoric into action for major projects. I believe that we can prepare you to support three phases that include decide, fund, and control. Our combination of technical programs with technically strong, yet friendly members stand to forge new paths. To drive this vision as President-Elect, I foresee these objectives as critical:

• Build upon the momentum created by my predecessor.
• Parlay my financial training to drive revenue that will assure funding of our vital programs, enhanced marketing, and provide paid event planners for our regional events.
• Emphasize the value proposition of the Corporate and Organizational Membership Partnership (C.O.M.P) program to leading AEC/EPC firms and owner’s firms, citing the correlation between AACE certification and improved employee development and performance.
• Guide increased Section membership, as well as increased percentage of certified members.
• Plan a cycle of visitations to regional events.
• Promote that membership, certification and involvement can be an engine of employability.
• Incorporate social media to integrate communication and cooperation between Sections. ✪
Logan Anjaneyulu, CCP CEP PSP

Logan Anjaneyulu, CCP CEP PSP, is an executive in the oil and gas industry and has years of engineering and management experience. Logan currently is a Director of Turnaround and Project Controls at Valero has been an active AACE member since 2005, and obtained numerous certifications with AACE including CCP, CEP, and PSP. He served on the Southern California section board multiple years. In 2009, Logan was nominated to serve AACE as the Chair of the Diversity Task Force (DTF) to promote diversity within our Association. He also served as the Chair of the AACE Mentoring Program (2010-11) that was instituted to foster mentoring among AACE members’ worldwide. He has been a co-instructor of the Planning and Scheduling certification review course at AACE Annual Meetings on behalf of the AACE Education Board. He was awarded the “2012 Outstanding Young Professional Award” by AACE International. He was elected to serve on the AACE Board as a Director-Region 4 during 2012-13 board year. Logan is currently serving as the Chair of the AACE India Task Force, to explore growth opportunities in the Indian Subcontinent.

Goals and Objectives:

Our association’s backbone is our members. This is a culmination of years of hard work by many members of association along with tireless support from association staff and numerous member volunteers across the globe over the past 60 years of our Association’s existence. As VP-Administration, I am committed to strengthen this foundation and support the growth of our Association by delivering on the following promises:

- Develop, organize, implement, direct and evaluate our association’s administrative function and performance by serving as corporate secretary and legal officer of the Association, conducting all official correspondence and maintaining all charters, constitutions, and bylaws.
- Achieve administrative synergies between BOD, Associate Boards, HQ, Committees, Task Forces, Regions, Sections, and Members-at-large.
- Make every effort to ensure the employers of our members recognize the value of our association offerings that enhances the way our members conduct professional business at their work places.
- Grow our association by establishing new corporate sponsors, cooperative agreements with peer professional associations, government agencies, industries, and public/private corporations.
- Support growth through diversity.
- Continue to create value to our members through our technical, education, and certification offerings.
- Administer our association activities with utmost ethical and professional standards.
- Put members first and be available to hear member needs and administratively support the same.

Thank you for considering me for this election. Look forward to serving you as your VP-Admin.

Chris Caddell, PE CCP DRMP

Chris Caddell, PE CCP DRMP, has enjoyed being a member of AACE International for over 15 years, participating and contributing in a number of different ways through the years. He has enjoyed participating in the Houston Gulf Coast Section, the second largest section in AACE, for many years. Drawing on his experience working for a contractor and consulting for owners, he has authored or coauthored eight papers on varying topics in estimating, planning and scheduling, risk management, project controls and owner issues. He is proud to have participated in the DRMP Certification Taskforce team and to have led the Decision and Risk Management Technical Subcommittee for three years. He was the lead author on a recommended practice on schedule risk analysis and has contributed to other RP’s. Most recently, he has been serving as the Director of Region 5, covering Texas, Colorado, New Mexico, Oklahoma, and Nebraska, with the addition now of Arizona and Utah. He started conducting virtual section meetings available for all regional members to participate. He has also lead the planning for the first Region 5 workshop event, the “Region 5 Symposium,” that was conducted in the fall of 2016. He has also participated in the Vision 20/20 task force team to help lead AACE into the future to be a vibrant organization serving its members.

Goals and Objectives:

I want to work as VP-Administration with the AACE Board of Directors and the wonderful AACE staff to help the organization operate efficiently and best serve its members. As the organization evolves in an ever changing environment, I want to do what I can to help ensure we stay relevant in how we reach and interact with our members and meet their needs. Specifically, I want to:

- Work with the association staff and the board to ensure the organization’s member services are best in class by working to ensure the staff have the tools, systems, and guidance to operate at their best.
- Support the development of member and corporate offerings and marketing to fuel the growth of the association and the Vision 2020.
- As legal officer for the association, make sure AACE intellectual properties are protected for members to maintain the maximum value for the organization.
- In the role to oversee the Young Professional, Women in Project Controls, and Mentoring Excellence committees, make sure those committees have strong leadership and the resources necessary to help secure a vibrant future of the association.

Thank you for considering me for this election. Look forward to serving you as your VP-Admin.
Madhu Pillai, CCP

During his AACE journey for more than a decade, Dr. Madhu Pillai, CCP FAACE, has always been an ambassador of the association through various leadership roles up to the international board level. Before joining the AACE International Board as Director (Region-7), and thereafter as Vice President (International Regions); Madhu lead local sections and the International Marketing Committee of AACE. He also co-chaired the first International TCM Conference of AACE and has been a contributor for AACE technical materials, like S&K. He was awarded the O.T. Zimmerman Founder’s award by AACE and was named an AACE Fellow. He was also awarded “Distinguished International Fellow” by the International Cost Engineering Council. Madhu is an electrical engineer with post graduate degrees in Human Resources Management and Business Management and holds a Ph.D. in Strategic Project Management Leadership. He has more than 31 years of broad-based oil & gas, petrochemical and power industry experience with leading MNCs in a wide geographic spread globally and currently works as a projects director with SNC Lavalin. Madhu has spoken at more than 25 International events; and was the keynote speaker and chair for few. He has served on the international boards of other professional organizations as well.

Goals and Objectives:
Having worked with many leading for-profit and non-profit organizations in Asia, Africa, Middle East and Americas, and seamlessly integrated with diverse international cultures, my key goal will be to make AACE outstanding in member services to the global professional community through efficient and effective administrative systems and procedures. The ultimate goal being for AACE to be globally recognized as the de facto advocate for cost management and project controls. I plan to achieve this by working closely with the AACE executive director and the HQ team, with support of the Board and various committee chairs on the following:

- Enhancing effectiveness of the system and thereby enhancing loyalty from stakeholder ecosystem: members, practitioners, partners, industry, academia, governments and society.
- Aligning our operations fully with the long term strategic objectives of the association.
- Enhancing value proposition for “Members at Large” as there are many locations with floating professional population and no local AACE section.
- Expanding the knowledge sharing within members to make AACE an indispensable partner for career growth.
- Developing innovative incentive model for higher corporate participation.
- Developing an effective leadership development program for section leaders at regional levels.
- Using my speaking engagements at international events to encourage industry and business to specify AACE certifications as at least “desirable” (if not “mandatory”) in their job descriptions.
- Introducing possible changes on our operation model to make AACE more agile to the changing global markets.

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On or Before 4 P.M. Eastern US Time on March 15

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To vote visit web.aacei.org
Aldo Mattos, CCP

Aldo Mattos, CCP, is an engineering project manager and consultant with large international experience. Based in Brazil, he is a nationally recognized expert in project management, construction cost estimating, planning and contract administration. He also has a law degree and master’s degree in geophysics. His experience spans multiple industries, including power plants, renewable energy plants, transportation, public housing and environment, in South and Central America, United States and Africa. His experience also includes the role of owner’s representative on an airport expansion project.

Mr. Mattos is currently Director of AACE Region 10 (South/Central America) and is a Certified Cost Professional (CCP). Author of five books on construction cost estimating, planning and real estate policies, he is an active lecturer on a wide range of construction-related topics. He often presents papers at AACE meetings and writes articles for technical publications.

As a consultant, he has assisted public entities and private companies in project management, cost control, estimating, planning scheduling, feasibility studies and disputes resolutions with high satisfaction of his clients. He is very skilled in training and motivating teams.

Goals and Objectives:

• Strengthen the ties between the three most active sections of Region 10: Brazil, Chile and Peru.
• Identify partners in the Caribbean and Puerto Rico to help reactivate these two sections.
• Promote AACE awareness in Latin America by highlighting the value of the Recommended Practices (RPs) and Total Cost Management Framework (TCM).
• Search support from HQ to promote events in the region with international speakers.

Mohammed Rafiuddin, CCP PSP

Mohammed has been an active member of AACE International since 2006 with 29 years of experience in project management, contracts management, and project controls. He serves as CEO and General Manager of BIOSI, a health care management company. Mohammed was the Director Region 7 from 2014-16, when the Qatar Section and Saudi Arabia Westcoast Section were formed. He served as President of the Arabian Gulf Section from 2011-12, where he initiated certification training courses, and which conduct two certification course cycles every year. He was unanimously elected to serve a second term in 2013-14. He is now conducting in-house training courses with major companies in the Middle East, like SABIC and ARAMCO, to enable their employees to pursue AACE certificates and embrace AACE recommended practices. Mohammed holds a bachelor’s degree in Civil Engineering from Osmania University, India, and a master’s degree in Engineering Management from KFUPM, Saudi Arabia. He holds CCP and PSP certifications; is a lead instructor teaching CCP, PSP, and risk management certifications for the AGS. He is a regular speaker on project management, cost management and risk management in various technical seminars and is passionate about knowledge sharing and mentoring. He served as manager of project controls of Worley Parsons Ltd., for a major program in Saudi Arabia until 2014.

Goals and Objectives:

My leadership experience with AACE International Board of Directors and AACE-AGS has given me the insight that AACE International’s body of knowledge and its certifications are not getting due recognition. My strategic plans and actions include:

• Collaborate with various corporate giants that are not aware about the value of Total Cost Management, what AACE International stands for, and make them recognize the potential value and significance of cost management and work toward establishing AACE certifications and technical products as global standards.
• Approach leading recognized universities and present AACE International and its certifications to the students so they enter into professional careers as ambassadors of AACE International, with full knowledge and value of AACE in the field of project and cost management.
• Work with various professional organizations that are contemporaries of AACE International and change the competitive environment to a collaborative and knowledge sharing platform.
• Strive to make the AACE certifications one of the job requirements and get the AACE best practices and technical standards recognized as industry norms.
• Work with the International regions leadership in expanding the membership base of AACE International.

Thank you for considering me as a suitable candidate to serve as VP International regions and I look forward to working with all of you at AACE International.
Myron Berry, CCP
Myron Berry, CCP, has been an AACE member since 2005, CCP since 2006. He served on the Central Savannah River Area (CSRA) Section Board as Program Director, Treasurer, President, and Past President. Attended four AACE Annual Meetings: two in Las Vegas, Washington, DC, and Toronto. Instructor at numerous cost management/earned value management courses over the years. Presented at numerous section technical dinners. Supported dozens of section community events for the last 10 years (Future City, College nights, Augusta Warrior Project, helping the military transition into project controls jobs. Developed Section leadership processes to support section leaders on duties, responsibilities, and methods.

**Goals and Objectives:**
Improve the success of the Association by improving the tools and techniques available to the local sections which I see as the most important contact point and support point for all members. Strengthen the sections in the association.

John C. Philbrick, PE CCP
John C. Philbrick, PE CCP, is a Director with PMA Consultants LLC. For over 37 years, he has worked in project controls, project scheduling, scheduling development/analysis/training, cost estimating, cost controls and claims analysis. Mr. Philbrick has been a part of project management teams for major road, airport, infrastructure, architectural, manufacturing/process, theme parks, electric transmission and water/wastewater projects in the eastern United States. Mr. Philbrick is also member of the National Academy of Forensic Engineers (NAFE), which is the affinity group of the National Society of Professional Engineers (NSPE). Mr. Philbrick also serves as a trainer for Primavera Scheduling Software in classes offered regularly to our clients in the construction and manufacturing industry. Mr. Philbrick co-presented “Applying Historical Productivity Records and Scheduling to Establish Contract Time: A Novel Approach” at the Primavera Annual Conference in October 2007. Mr. Philbrick wrote and presented a paper, “Cost and Schedule Control at the Enterprise Level,” at the 2011 AACE 55th Annual Meeting and will be presenting a paper on, “Portfolio Scheduling - How to Achieve Success and What Does Success Look Like?” at the 2017 AACE Annual Meeting.

**Goals and Objectives:**
I have been involved with AACE since 1996 and a Certified Cost Professional since 2001. I feel that AACE has helped me greatly in my growth as a professional in project controls, estimating and scheduling. I plan to give back to the organization by serving in this role. My goals for this role are:

- Promote interaction between sections within Region 3
- Encourage the sharing of best presentations between regions
- Promote member certifications
- Encourage technical activity in each of the sections.
Josh Rowan, CCP
Josh Rowan, CCP MRICS, is an executive in the energy industry and has been an active member of AACE since 2008. He is employed as Vice President, Project Controls, with OGCS. Prior to work in the energy sector, Mr. Rowan served four years in the U.S. Army, where he earned the Bronze Star Medal for service in Iraq and the Louisiana Humanitarian Service Medal for support operations in New Orleans following Hurricane Katrina. Following military service, Josh returned to Houston where he joined the Houston Gulf Coast Section (HGCS). He has been on the HGCS Board of Directors since 2013, serving as Vice President (2014 – 2015) then President (2015 – 2106). In both years, the section earned AACE International’s highest Platinum Award. In addition to service to HGCS, Josh was the Young Professional Chairman from 2012 - 2014, serving as a guest lecturer on cost engineering and the AACE value proposition at numerous universities. Josh has also served on AACE International’s Technical Board as a Director At-Large since 2014. He was a member of the Strategic Task Force – Member Value and Retention in 2015. Josh has a BS degree from Texas A&M University and an MBA from the University of St Thomas.

Goals and Objectives:
I am passionate about membership in AACE International and will actively champion our approach to Total Cost Management. As your regional director, I will promote and sustain membership growth, as well as our excellent technical and training materials. If elected, I am committed to enhancing Region 5 by:

• Building upon the momentum created by my predecessor.
• Improving communications between AACE leadership/headquarters and the leaders of various Sections in the Region.
• Supporting efforts of the Sections in arranging joint meeting opportunities with other professional organizations.
• Continuing to hold virtual meetings to engage with non-traditional Section members.
• Continue to lead, in consultation with Section Presidents, planning efforts for the Region 5 Symposium.
• Assisting struggling or inactive Sections to become reinvigorated.
• Educating college students in the region about the benefits of a career in cost engineering.
• Soliciting section volunteers for AACE committee and board service whilst encouraging active participation at the Annual Meeting, including the development of good paper topics and presentations.
• Increase active membership through shared understanding of recent results of membership surveys and task forces.
• Working with sections to boost certification and enhance certification training offerings across the region.

I am humbled by this nomination, and if chosen, I will maintain the high standards set by previous Region 5 Directors and act as a positive force for our Section membership.

Maureen Wakeland, PE
Maureen served as the President of the Central Texas Section. The Section was recognized for the accomplishments it made during the year. The accomplishments included: bringing in guest speakers; meeting with the students at The University of Texas; hosting a Facebook page, and also other events.

Goals and Objectives:
My leadership experience with AACE International Board of Directors and AGS has given me the insight that AACE International’s body of knowledge and its certifications are not getting due recognition. My strategic plans and actions include:

• Strengthen the local sections by encouraging officers and members.
• Encourage the sections to host professional speaker events.
• Encourage the sections to host certification training classes.
• Encourage participation at regional and association level AACE events.◆
Mike Bensussen

Mike Bensussen is a highly motivated and driven young professional, residing in the Pacific Northwest region of the United States. With 10 years combined project controls and project management experience, Mike is well equipped to respond to the challenges of the fast paced, dynamic and risky realm of major construction projects. While continually building upon a diverse professional background in nuclear, government, higher education and oil and gas projects, Mike prefers to spend his free time exploring with his family the natural wonders of the region, working on projects inside and around the home, or on a fresh sheet of ice at the hockey rink. As a member of AACE, Mike has been intensely active since 2013, participating at the local, regional and association levels. Most recently, he has authored and presented technical papers for the Annual Meeting and plays a critical role within the Associate Education Board as University Relations/Outreach subcommittee chair. Mike believes that education, outreach and mentoring are integral components of the ongoing project controls mission. In his professional endeavors, he strives to achieve a balance between theory and application of technical material.

Goals and Objectives:
As an enthusiastic volunteer and Region 6 Director, Mike’s goals and objectives for his term would include:

• Expanding university relations and outreach to connect with more students in more educational programs throughout the region.
• Increasing AACE student section enrollment and involvement through exciting networking events and educational mentoring opportunities.
• Appeal to more Rising Professionals at AACE through enriching and attractive professional offerings throughout the region.
• Increase AACE awareness amongst regional corporations in an effort to encourage company sponsorship of volunteer and mentor involvement.
• Pursue adoption of AACE-RP-12R-89 – Model Master’s Degree in Cost Engineering – amongst regional educational institutions.
• Attend and participate actively in as many regional AACE events as reasonably possible during term of service.

Mark von Leffern, EVP PSP

Mark von Leffern has been an active member of AACE International since 2012. He has served as Executive Director of the joint San Francisco/Southern California Western Winter Workshop (2015-2017) and Southern CA Fall Symposium (2014). In 2015, Mark received the Charles V. Keane Distinguished Service Award.

Mark serves as Project Manager of Hill’s team providing program management support and implementation services for various projects throughout southern California county under LA Metro’s transit program. He has over 16 years’ experience in public and private sectors with infrastructure/transit, oil & gas, major transmission and distribution lines, systems engineering, software, aircraft modernization and technology advancement projects.

Goals and Objectives:
As Region 6 Director, I enthusiastically look forward to:

• Facilitate and promote communication between section leadership, the AACE Board, Regional Directors, headquarters and various committees.
• Collaborate with sections to develop a “strategic marketing plan” to support outreach to academia, consulting, contracting, public agencies and government sectors.
• Create a toolbox that sections can tap into to share experiences and solutions (excel files, student presentations, etc.) with the objective of promoting AACE, increasing the value of the sections and stimulate membership growth.
• Increase the health of sections by promoting membership recruitment and retention, school and student section outreach, section dinner meetings, identifying partnerships/joint events with other organizations (CMAA, RICS, ASPE, etc.), social events, site tours, certification and regional events (i.e., Western Winter and Alaska Workshop).
• Identify/facilitate opportunities for other Sections to participate in Regional Workshops.
• Serve as a conduit for sharing best practices among section leadership and offer guidance on section/regional events.
• Increase the awareness of AACE by engaging company leadership and encourage firms to adopt TCM as part of their processes and procedures practices.
• Encourage social media as a communication mechanism to members and amongst sections including Linked-in posts and WebEx meetings or certification trainings in an effort to cater to those that live geographically far from section events.
• Engage local professors and rising professionals into AACE. Partner with local companies to identify student internship opportunities. Promote the mentoring program.

Thank you for your consideration!
Laurie Bowman, CCP DRMP EVP PSP

Laurie Bowman has 20+ years of experience in project control, planning and scheduling, and risk management. He works as the Principal for his consultancy Synchrony, where his focus is on helping organizations improve their project controls maturity and helping people improve their project controls competency through training and coaching. Laurie has worked on both sides, including owner and contractor, as well as consultant and trainer with multiple firms and industries including: TfNSW, Origin, Boeing, Sedgman, Bechtel, BHP and QR. Laurie is licensed and holds AACE International certifications for CCP DRMP EVP PSP. Laurie instructs EVP and PSP certification preparation courses on behalf of the AACE Education Board and is a registered mentor with AACE. Laurie has served as the chair of the NSW chapter of the Australian Cost Engineering Society (ACES), is currently working with Engineers Australia and APM in the UK to increase recognition of competencies and certification for cost engineering professionals and is a member of the Standards Australia technical committee for many project management standards. Laurie has a bachelor degree in mechanical engineering from the University of Queensland, and holds a masters in commercial law from the University of Southern Queensland and MBA in finance and project management from the University of New England.

Goals and Objectives:
I am excited by the opportunity to advance the professionalism of cost engineering and project controls in Region 8, and believe that we can achieve this by:

- Encouraging innovation and diversity within our profession.
- Improving our engagement with young people, in particular university students.
- Developing pathways for project controls professionals to gain certified.
- Collaboration and strategic alignment with project management groups and international associations.
- Increased use of digital media for engaging with our members and marketing our profession.

The opportunity to re-invigorate AACE International group in Region 8 with a fresh new approach to serving our members is very appealing to me. We need to address the challenge of transforming our profession to make ourselves more appealing to some of the groups that are currently underrepresented, such as women and young people. We can work toward bridging the gap between education institutions and industry by introducing students to planning and cost engineering at undergraduate or even high school level. Geographically, I would like to explore the potential for AACE International to have a stronger presence in areas including India, China, and New Zealand. I am very passionate about AACE International and believe that we can make a refreshing difference.
Glenroy London

Glenroy London is a founding member of the Caribbean Section established since 1994. He served as President of the Caribbean Section and is still active on the Section BOD as Past President. Assisted Past President Stanley West in deciding for and proctoring CCP examinations in the Caribbean Section. Glenroy was also instrumental in providing guidance and mentoring of immediate Past President Jemma Langley-Barclay in executing her presidential duties and assignments whenever necessary.

He played an active role in networking and promoting Total Cost Management, TCM, as an essential element in the growth and development of the energy sector of Trinidad and Tobago. Provided impetus towards the sustainability and rekindling of the Caribbean Section during its upwards mobility and flagging years respectively. Volunteered as an AACE International Mentor. Completed major flagship capital intensive projects in the oil and gas sector that spanned the spectrum of regulatory, upstream-stream and downstream to include sojourns locally, regionally, and internationally.

Glenroy attained academic achievements to include BSc Mechanical Engineering, MSc Production Engineering and Management, MBA Finance and Marketing and MSc strategic Planning. Currently completing dissertation in DBA Strategic Focus with Edinburgh Business School, Heriot Watt University, Scotland.

He is currently the CEO/Executive Director of his own established entity Global Success Dynamics Limited, GSDL, providing consulting and advisory services in strategy planning and execution; talent development and competence assurance; auditing and implementation of health, safety, environmental and quality management systems for SMEs in the energy sector; and project and turnaround management.

Goals and Objectives:

- Build upon the momentum created by my predecessor.
- Engage technology via social media and ICT platforms to provide for greater collaboration and communication.
- Injection of energy and passion to assist struggling or inactive sections to become invigorated.
- Enhance regional membership retention and growth.
- Promote section growth via increased educational, cultural, sporting and social networking activities.
- Emphasize the value proposition of the Total Cost Management concept citing the correlations between the AACE certification, enhanced employee talent development and performance growth.
- Guide and promote increased levels of AACE certifications in alignment with competence growth and assurance.
- Establish clear and concise pathways to transformational leadership attributes to develop existing and future section leaders.
- Schedule outreach to each section in the region.
- Promote AACE International as an engine of opportunity, growth and driver of sustainability in the region.

Jeancarlo Durán Maica, CCP EVP

Jeancarlo Durán Maica, CCP EVP, has over eight years of experience in project control and has an engineering and construction background, leading planning and control teams in large EPC projects. He has been an active member of AACE International since 2013. He has served as President of the AACE Perú Section and also he has been participating as a member of the AACE Latin America Task Force since then. The Peruvian team has made major improvements in spreading AACE’s recommended practices by organizing four AACE Cost Engineering Congresses in Perú (since the Section formation) with more than 200 attendees each, and also by translating more than 18 RP’s into Spanish. Jeancarlo has also attended all AACE Annual Meetings since Washington, D.C., in 2013 representing the Perú Section. He has presented two papers at the last AACE Annual Meetings (Las Vegas and Toronto) sharing his experience in project control in the Peruvian market.

Jeancarlo serves as an Integrated Planner for Ansaldo STS, working as Head of Planning in “Metro de Lima” Project - Line 2 with a CAPEX of 5.7 billion USD. He speaks fluently English, Portuguese, and Spanish.

Goals and Objectives:

The ultimate goal is to unify and professionalize Latin America professionals in cost engineering recommended practices in order to spread Total Cost Management knowledge. The short term objectives in order to achieve it are:

- Support the Perú Section to organize the 5th Cost Engineering Congress with an expectation of more than 250 attendees.
- Support the Latin America Task to translate AACE International technical materials (TCM, S&K and RPs) into Spanish/Portuguese. This effort has already started with the Glossary of Terms.
- Organize with Region 10 Sections the first AACE LATAM Symposium, choosing a new location to motivate a new Section formation (Colombia is a good possibility).
- Develop a new library online for all Region 10 Members, with all publications and presentations of the events promoted in Region 10, and also the translated technical materials.

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Professional organizations, such as AACE International, are more important now than ever before. This is the opinion of Larry R. Dysert, CCP CEP FAACE Honorary Life, serving as Vice President-Techical Board on the AACE International Board of Directors. Dysert says, “The most critical problems faced by young people in our cost engineering field is the lack of training and mentoring. When he joined Fluor to start his career, he went through weeks of intense training before ever touching a real project. He says, “That doesn’t happen anymore at either owner firms or contractors. And there are very few (if any) college programs that ready a young person at the start of their career to become a total cost management or cost engineering professional.” Dysert explains, “A young person may have an engineering degree, or a finance degree but that does not ready you for your first job as an estimator, scheduler, or project controls person.” This is creating problems for the profession and the total cost management industry. Dysert says, “The baby boomers (the old grey haired individuals with experience) are leaving the workforce too quickly for adequate training of the next generations.” He stresses that, “This is why professional organizations such as AACE International are even more important than ever.”

Dysert notes that he became aware of AACE International while working for Fluor in the 1980’s. “I worked with Larry Bloch, a past-President of AACE, and started studying AACE technical publications to enhance my understanding of estimating and cost engineering topics,” notes Dysert. He adds, “I attended my first AACE Annual Meeting in 1989 in San Diego; and John Hollmann and I co-authored a paper and made our first AACE presentations there.”

His membership in AACE International started while at the Eastman Kodak Company in 1990. It was then that Harry Jarnagan (who would become another past-president of AACE) founded the Genese Valley Section of AACE; and Dysert became an AACE member at that time and became active in the Genese Valley Section. He explains that his association with AACE was strengthened while he was at Kodak. He says, “Our entire estimating and project control groups became very active in AACE, not only in membership and attending annual meetings; but also in working on AACE Recommended Practices, authoring papers, and making presentations.” He adds, “Many illustrious members of AACE (John Hollmann, Bruce Elliott, Todd Pickett, Doug Leo, and several more) were all involved in the Genese Valley Section at that time.”

With his background now forged with AACE International membership, Dysert says, “Certification just became a next step in the process of developing my career as an estimating and cost engineering professional.” He says he was always interested in studying and learning more about the cost engineering profession; and seeking his first Certified Cost Consultant designation (later to become the Certified Cost Professional title) was a way in which to focus his studies and training opportunities. But it was also more than this. He says, “Although certifications help to distinguish you from your peers and help you to advance in your career, the journey to obtain the certification through intense learning and studying is the important part to me as it allows me to focus on continual improvement as a professional cost engineer.”

Later, Dysert was active in the task forces to develop both the Certified Estimating Professional (CEP) and the Decision and Risk Management Professional (DRMP) certification programs; and he enjoyed working with other
remarkable professionals in the development of both programs.

Now, with decades of AACE membership under his belt, Dysert and those he works with are actively involved in promoting membership in the association. Dysert says, “As a principal in a cost engineering consulting firm, we are constantly engaged in improving the capital investment performance and project execution performance of our clients. One way in which we accomplish that is by promoting the recommended practices and other technical products of AACE International because they can truly make a difference to a company’s bottom line. We constantly promote our clients to engage their cost engineering personnel in AACE International, and encourage their employees to seek AACE International certifications.”

With a long association with AACE International, and experience as the past Chair and current Vice-President of the Technical Board, AACE Recommended Practices have a special passion for Dysert. He says, “I have authored a few and contributed to many more; and believe that they are an important resource to all stakeholders involved with total cost management and cost engineering. As guidelines, they help all stakeholders communicate about a cost engineering practice from a common starting point; while allowing customization for specific application or for a specific organization.” Dysert adds, “The growing set of AACE International Recommended Practices are an extremely important resource for all involved in our profession; and they are based on countless hours of work, cooperation, and consensus building by a multitude of AACE volunteers – especially from our AACE Technical Subcommittees.” Dysert continues, “My appreciation to the hard work of volunteers such as Ron Winter, John Hollmann, Chris Caddell and so many others...
ers that have contributed to AACE Recommended Practices is immeasurable.”

Outside of AACE International, Dysert has his own career. He says, “I am an owner and managing partner of Conquest Consulting Group, which is an estimating and cost engineering consulting practice focused on improving the capital investment performance primarily for owner firms in the process industries. We assist our owner clients in establishing the correct budget through validated cost estimates and schedules, in controlling change during project development, in monitoring progress and performance during project execution, and in collecting and analyzing actual project cost history to aid in benchmarking and support the next round of projects.”

Dysert’s educational background includes a B.A. degree in Economics from the University of California, San Diego. His original planned career path was to focus on research involving the economics of ocean resources. However, while attending graduate school his older brother was diagnosed with Hodgkin’s disease, and he left school to run his brother’s motorcycle business for a few years. After his brother recovered, he decided to enter the workforce instead of going back to school, and was able to obtain an estimating position at Fluor based on his economics degree. At that time, joining a large engineering firm such as Fluor involved going through an incredible training program that allowed him to succeed as an estimator, but also opened his eyes to the entire realm of cost engineering that is involved in developing and executing capital projects. “It set me on my career path” stresses Dysert.

Having continued with this career path, Dysert says, “The most rewarding aspect of my job is that I truly enjoy it.” He explains by saying, “In the early days. I enjoyed working as one piping estimator among many on a refinery project. Later, I enjoyed leading an estimating team on the development of an authorization estimate for a large film-making facility. And now, I enjoy assisting client firms in enhancing their capabilities to build cost effective projects.” Dysert also noted that, “As total cost management professionals, we don’t build projects, but we do our best to assure that projects are built on budget and on time — and that makes it worthwhile.”

In addition to his association with AACE International, his education and career experiences, Dysert also has his personal life which he balances with his career and his AACE pursuits. He says, “I have been married to my wonderful wife Doreen for 33 years, and we have two grown and successful daughters. Shana is married and expecting our first grandchild, and Erika is engaged. Shana is employed in online advertising and digital marketing; and Erika is beginning her career as a massage therapist. My wife, Doreen, raises and shows English Mastiffs that keeps her very active.”

How does Larry spend his free time. He says, “After racing motorcycles as a teenager and in my early twenties; I decided to take up off-road motorcycle racing again in 2013, at the age of 58. I compete in navigational rally raid motorcycle racing, and have a class win and a third overall to my credit. Last year, I was the navigator for a 4-wheel team that finished first in a world elite level rally.”

Dysert credits AACE International as the foundation for the career success he has had. He concludes, “I believe a large aspect of my success has been my long association with AACE, and the opportunity to work alongside of some tremendously talented individuals that luckily also valued their association with AACE. It’s allowed me to work with friends, while contributing to the Association. I cannot give enough credit to the various Technical Board members that I have been able to work with over the past many years. We have helped to build houses together as volunteers for Habitat for Humanity, we have enjoyed numerous concerts together as music lovers, we have worked until the wee hours of the morning on Technical Board activities, and we did it by combining passion and fun!”

Three Signs You Are Not Assertive Enough

Those who achieve success make things happen and have developed the ability to be assertive. Not being assertive can doom you to continually being passed over. Wishing for recognition is no longer enough, you have to take real action to be noticed. There are three major signs that can confirm if you need an assertiveness fix.

1. Do you struggle to get your point across or constantly have to explain yourself? If people take away the wrong message from your verbal communication, then you are not being clear. You are presenting your ideas in a disjointed manner and a jumble of meaningless words. People tune you out and only hear part of what you say. You are talking out loud trying to figure out what your point actually is. You assert yourself on the wrong points and exhaust your listeners as they wait for you to get to a point that matters.

2. Do co-workers interrupt you in mid-sentence or talk right over you? Constantly being interrupted indicates people do not respect you. Worse yet, the ideas you are presenting might actually be poor ones, demonstrating you really do not understand the crucial issues needing resolution. Co-workers may be so frustrated with your lack of insight that they interrupt you in order to keep the focus on the critical issues and keep the discussion moving constructively forward.

3. Do people take advantage of you for saying “yes” to everything? It is one thing to accept new assignments because of an opportunity to learn new skills. It is a whole other thing to give up your nights and weekends because you cannot say no. By trying to please everyone, you make it easy for others to take advantage of you.
THE TOP 10 REASONS TO JOIN AACE INTERNATIONAL

TIME
Gain access to a wealth of resources that will save you time and money! You’ll stay informed about the complexities of the cost and management profession -- plus you’ll have access to discounts on educational programs, publications, and more!

INFORMATION
Locate thousands of technical papers and publications in the Virtual Library. AACE’s database is keyword searchable for quickly locating appropriate reference articles.

CAREER
Members can post resumes at no additional cost in our Career Center and keep your career on track through information sources such as our annual Salary and Demographic Survey of Project and Cost Professionals.

LEARNING
We offer numerous online learning courses on estimating and project management. The Approved Educational Provider program helps maintain high quality development courses and providers. AACE also holds many seminars throughout the year.

RESOURCES
Starting with the TCM Framework and Recommended Practices that are available for free only to members to our bi-monthly publication Cost Engineering featuring articles for cost professionals around the world. Through the AACE International website, the Cost Engineering journal is a great current resource for members and as a member, you gain access to an archive of past issues.

TECHNICAL DEVELOPMENT
Increase your knowledge and expertise by joining one of AACE International's many technical subcommittees, subcommittees, and Special Interest Groups (SIG's) at no additional cost to members. Discuss industry problems with your peers or help experts develop new and improved techniques and practices for the profession.

NETWORKING
By attending a local section or our Annual Meeting for interesting speakers, informational tours, social dinners and much more. The online Membership Directory is an excellent source for a list of contact information on thousands of members. Join one of our many technical subcommittees and participate in the AACE Forums - a great way to tap into the collective wisdom and experience of our world-wide membership.

EXCELLENCE
Our certification programs are independently accredited by the Council of Engineering & Scientific Specialty Boards. AACE certifications are a recognized credible standard in the cost management field. A recent study shows that individuals with an AACE Certification earn 17.4% more than their counterpart without a certificate.

DISCOUNTS
On products and services ranging from Annual Meeting registration fees, archived webinars and presentations, certification examination registrations, and more!

YOU!
We are your professional partner bringing you information and support you can trust. Join and become part of a unique network of individuals who are dedicated to improving the cost and management profession.

Ready to advance your career and begin enjoying the advantages that our members enjoy?

Whether you are an experienced cost engineer or a student, we have a membership ready for you.

JOIN TODAY
web.aacei.org
ACE International Recommended Practice 105-90, *Cost Engineering Terminology*, defines indirect costs as costs not directly attributable to the completion of an activity, which is typically allocated or spread across all activities on a predetermined basis.

- In construction, (field) indirects are costs which do not become a final part of the installation, but which are required for the orderly completion of the installation and may include, but are not limited to, field administration, direct supervision, capital tools, startup costs, contractor’s fees, insurance, taxes, etc.
- In manufacturing, costs not directly assignable to the end product or process, such as overhead and general purpose labor, or costs of outside operations, such as transportation and distribution.
- Indirect manufacturing cost sometimes includes insurance, property taxes, maintenance, depreciation, and packaging, warehousing, and loading.

This is one of the most misunderstood terms in cost engineering. This item alone can add a substantial amount of cost to any estimate, so you have to be careful in selecting a multiplier. As a basis for indirects on labor, the U.S. Gulf Coast is the suggested choice. Indirects in this region are 140 percent to 225 percent of direct labor cost. All other locations will be compared with the Gulf Coast to establish their indirects percentages.

For international locations, the indirects percentage must be identified through local contacts, or personal visits, or through contacts with joint venture partners, or from published information from different sources. Typically, these are the costs associated with the support of direct construction required for orderly completion of the project.

Those costs usually include field administration, direct supervision, construction management, engineering staff, site support services, statutory labor burdens, benefits, insurance, and taxes, etc. By definition, most indirect costs are predominantly a function of the project’s planned duration of need, as extended by a definable estimated rate per hour, together with an estimated cost associated with site mobilization/transport and final demobilization.

Other key issues affecting the cost of construction indirects include the following:

- Relative size of project.
- The type of project (grassroots or retrofit, etc.).
- Local labor and construction practices.
- Site-specific location and conditions (such as extremely remote site requiring daily transport of workers to/from the job site or special allowances for seasonal weather conditions).
In order to compare indirect costs from different contractors, you have to make sure that they are giving their multipliers on a similar basis. So, in order to bring uniformity to all estimates, please make sure that the following general categories of indirect construction costs are included:

- Field supervision and indirect support staff.
- Travel/relocation/subsistence and field per diems and relocation.
- Temporary facilities and structures.
- Temporary support systems and utilities.
- Construction equipment and tools.
- Safety and first aid.
- Field office furnishings—supplies and communications.
- Construction consumables.
- Insurance/taxes, statutory payroll burdens, and benefits (typically about 40 percent to 50 percent).
- Miscellaneous overhead and indirects (home office overheads, home office equipment- PCs, purchasing services, etc.)
- Profit/fee, etc.

A list of all items typically considered as Indirect for a project, include the following:

- Civil and site work.
- Earthmoving equipment usage.
- Fuels and lubricants used by construction equipment.
- Temporarily placed commodities. (i.e., construction erosion control).
- Site surveying.
- Temporary paving.
- Temporary access equipment (i.e., ladders).
- Temporary hoisting equipment (i.e., cranes, rigging, material/worker lifts).
- Misc. consumables used for temporary installations (i.e., welding rods) on large projects.
- Pipe fabric shop (temporary: not part of the project scope) and overages.
- Project mobilization/demobilization.
- Temporary construction facilities, project trailers, furniture, parking lots, not permanently installed.
- Temporary storage (warehousing).
- Janitorial, site clean-up, and rubbish disposal.
- Construction utilities and connections.
- Base camp and catering.
- Scaffold usage, set-up, and takedown.
- Small tools, tool rooms, and equipment.
- Construction security, guards, and communications systems.
- Construction safety, guards, and communications systems.
- Construction safety and emergency equipment, dispensary and supplies.
- Constructing hoisting equipment.
- Repairs and maintenance on equipment.
- Temporary weather protection and heating.
- Cost of money – depending on final use.
- Construction insurance and bonds.
- Permits, regulatory fees and legal expenses.
- Home office costs and profit.
- Procurement staffing, contract administration, and related expenses.
- Project supervision supplies and services.
- All field supervision and site administration above working crew foreman.
- Field staff expenses (telephones, water, electricity etc.).
- Safety and other training programs and expenses.

Four Ways to Boost Your Assertiveness

Jill Johnson

If you are not achieving the success you desire, it is time to take a step back and assess whether you are assertive enough. When your desires include promotions or more money, being assertive can make those dreams a reality. You can implement three key actions to immediately boost your assertiveness and take control of your destiny.

1. **Watch your body language:** Body language dominates the spoken word and can help you express yourself in a more assertive manner. Your posture and facial expressions play an important role in becoming more assertive. You need to make and maintain eye contact rather than looking away when you talk. Standing tall or sitting up straight when you speak conveys an air of confidence. People who project confident body language are listened to more carefully.

2. **Speak up:** Do not just wish for things to happen. Ask for what you want. Tell people what you are interested in. Send emails to more than one person in your group or copy your boss on key items to ensure others cannot take credit for your ideas. Communicate in person if the matter is important or controversial. Focus your energy on bringing forward good ideas rather than complaining about decisions that have already been made.

3. **Practice:** Assertiveness is a skill like any other—you have to practice it over and over before it becomes something you can do with ease. Volunteer for assignments so you can get in front of more people to augment your experience. Practice being assertive inside and outside of work. As you gain confidence and learn to express yourself more clearly, you will be more comfortable speaking up when it really counts and your ideas will likely be more accepted.
There are many areas of skill and knowledge in decision and risk management that are difficult to test using multiple choice questions. These include the capability to quickly grasp a situation (including the non-technical aspects of politics, bias, and so on), to understand how various principles, practices and appropriate terms apply to a situation, to synthesize this information into a supported recommendation, and finally to communicate all this in a way that the audience will understand it. Testing these skills and knowledge is the purpose of the written “memorandum” (memo) part of the DRMP examination.

The memo part of the examination requires candidates to demonstrate not only communication skills, but technical and non-technical insight regarding a challenging DRM workplace scenario. Candidates will select a scenario, study it, and then draft a memo to the appropriate recipient, demonstrating the candidate’s ability to efficiently organize thought and communicate effectively while demonstrating their perception of the complexities of the scenario situation and optional responses.

Memo Development

The word “development” in this section heading emphasizes that a memo (or its email or other equivalent) should be developed; i.e., planned, structured, and outlined before committing words to paper or screen. Planning is not first nature to many experienced candidates who quickly scan a scenario and jump to conclusions without supporting their case. Perhaps this is because experts have seen similar situations many times before and don’t read the words and/or have earned the trust of their organization and have become accustomed to being taken at their word and not presenting options and so on. DRMP candidates should not make this mistake; one must assume the memo situation is unique in some way and that they are being judged by the quality of the memo.

The first step in developing a memorandum is to read the scenario several times. Read each word. All scenarios will have both technical and non-technical situations, facts, and circumstances; all of these that are relevant should be considered in the memo content.

The next step is to outline the memo. Use scratch paper. Do not jump into writing. The classic memorandum description in the literature applies to the DRMP exam; it typically has these components:

- Heading/Address Info
- Introduction or Purpose
- Body
- Recommendations (including options and supported as appropriate)
- Conclusion

Outlining this structure and annotating the outline with key points helps the candidate to build a logical, supported case, and transition from one point to the next. The recipient will also be able to follow the candidate’s thought process if the memo is well structured. Writing
the memo should be a matter of fleshing out the outline. A memo that includes these components, and any depth of analysis, will generally require 300 words or more.

One may or may not put these or similar headings in their memo; transitions are a matter of the writer’s style. However, the final memo should be “readable,” not solely an outline or list of facts or points. The memo components are described in the next section for the purposes of guiding typical business memo development.

Memo Content

Heading

A memo heading typically includes: To, From, Date and Subject. We all know the frustration of emails or memos with meaningless subjects. A recipient should not have to read the memo to have some idea of what it will be about; it is a courtesy to the recipient to be clear.

Introduction

Memo introductions usually include one or more sentences stating the purpose which should be related to the subject line. It can be useful to briefly state the general recommendations without details; i.e., a “heads-up” to get their attention (e.g., “I will be recommending we significantly revise our process.”).

Body

The body of the memo should usually include several paragraphs analyzing the scenario; including technical (process, practices, tools, organization, etc.) and non-technical (e.g., politics, bias, cultural, etc.) issues. The body may start with briefly summarizing the scenario. The analysis may cover the meaning and importance of the situation and its potential impact if not addressed. To guide analysis, it is useful to ask yourself, “what principle(s) come into play in this scenario?” and then “what practices best address that principle?” (which may not be the practice one is most familiar with).

Recommendations

Next, a memo should include one or more paragraphs with recommendations that are tied back to the scenario situation and its analysis. Where applicable, recommendations should be supported or backed up by referencing applicable standards; use what you learned elsewhere in the Study Guide about AACE’s TCM, Recommended Practices, or other standards. Most scenarios have a main issue, and one or more side issues to address; cover them all as appropriate. Optional approaches should be covered as appropriate. Assume that you need to gain the audience’s trust through demonstrating your knowledge; however, lists and dissertations of extraneous or irrelevant information are not advised.

Conclusions

Wrap up the memo with a paragraph or two summarizing the recommendations or highlight those that should have priority. There should also be an appropriate closing sentence about how to contact the writer for follow-up information, actions, or to answer questions.
Example Scenario

Middling Company’s Risk Manager, you have just received a copy of a contingency estimate prepared by a consultant for a strategically important project for your company (Project Alpha). It is the largest project your company, which has a weak project system, has ever done. The contingency estimate was initiated by the Alpha Project Manager without your awareness, but the business Project Sponsor has asked you to review it because company policy requires your sign-off on contingency estimates at the full-funding or sanction decision review gate 3 (Alpha project’s current stage.)

The project base estimate was $1.0 billion, and the consultant’s probabilistic contingency estimate was $50 million at a p50 level of confidence (the company’s policy is to fund at p50.) The p10/p90 range of project cost was $0.97 to $1.12 billion. In your review, you did not find any reference to the project’s risk register that has been maintained throughout the current design phase. The contingency analysis was done by the consultant assigning ranges to estimate items and running a Monte Carlo Simulation.

The major risks in the register include the complex project’s remote and environmentally sensitive location, a fast-track schedule, and labor shortages for engineering and construction. Middling company’s estimator has told you that based on her review the base estimate is consistent with AACE Class 4.

You have concerns about the contingency estimate methods and the results and are not prepared to sign-off on it; however, the PM has made it very clear to you that he is very happy with the contingency estimate and is anxious to get this project through the decision gate without delay. Prepare a memo to the Project Sponsor about the situation including recommendations for disposition of the contingency estimate.

Example Analysis

Read the words. Breakdown the scenario fundamentals into an outline of some sort. Then, ask yourself “what principle(s) come into play in this scenario?” and then, “what practices address that principle?” Use these to put together and support your recommendations. The following is an example of a thought process to gather facts and supporting information:

The fundamentals, facts and observations, of this scenario are:

- A strategic project (implies that failure will have material impact on the company profitability).
- A phase-gate process is being applied: project at the full funding decision gate (no going back.)
- PM has not involved the company risk manager (you) for some reason.
- Consultant’s methods seem suspect (limited team input, unadorned ranging of estimate items with no reference to risk register, no mention of cost/schedule integration in risk analysis).
- There are major “systemic” risks (poor scope definition, weak project system, complexity, location, and environmental issues.).
- A contingency of 5% at p50 (funding policy) and worst case of 12% (do not know how the company uses low/high values in evaluating the business case for decision making).
- Given the above, you are not prepared to sign-off, but you must respond.

The principles and practices involved (both technical and non-technical) are:

- Organizational: Addressee is the business project sponsor (with assumed decision authority).
- Decision Making: Class 3 is typical definition at full funding, not Class 4 (RP 18R-97).
- Decision Making: Does the company employ sensitivity analysis in its profitability models (i.e., are they aware of the importance of the p90 value?) (TCM 3.3).
- Risk Management Process: This issue relates to the quantitative risk analysis and contingency estimating step in Risk Assessment (TCM 7.6 process map).
- Contingency Estimating Principals: Recommended quantification methods should explicitly link risks and their impacts, should be based on input from those knowledgeable of the risks, and should integrate cost and schedule (RP 40R-08).
- Contingency Estimating Methods: For significant Systemic risks, empirically based parametric risk models are suggested (RP 42R-08).
- Bias: The scenario implies that the PM and possibly the Business Sponsor are just going through the motions and may not be receptive to more rigor in analysis; particularly if it counters the apparent optimistic analysis outcome (need to buttress the recommendation with industry best practices (e.g., RPs).
- Politics: Relationship/trust between/among the contingency estimating consultant, the PM and the Project Business Sponsor (care needed in making personal challenges; note ways to do it better, rather than too negative of an attack on what was done).

Now that one has noted points such as this on scratch paper (as can be seen, even in this short scenario, there are many issues), a memo can be fleshed out.

Example Memo (Word count about 400)
To: (make up a name for Business Sponsor)
From: (make up a name for yourself: Risk Manager)
Date: (exam date)
Subject: Project Alpha Contingency Estimate Review for Gate 3

As requested, I have reviewed the subject contingency estimate. I am not prepared to sign-off on the estimate as-is. This memo summarizes my reasons and recommends best practices to improve the contingency estimate in a way that does not delay the gate review too much.

First, I note that Project Alpha is of strategic importance and as such it is critical that the cost distribution from the risk analysis and contingency estimate realistically reflect the range...
of cost outcomes from the identified risks so that there will be confidence in project success. It is assumed the range will be used in business case modeling (in that case, the business should test if the project is still profitable at the p90 level.)

For a strategic project, I think all would agree that best practices are in order. In that regard, it is not clear that the identified risks (see attached risk register) have been fully considered in the contingency estimate, particularly the systemic risks which are significant. AACE Recommended Practices, which we have used in the company in the past, indicate that we should make sure our methods explicitly link the contingency estimate to the identified risks. AACE further recommends parametric estimating for quantifying systemic risks which are significant for this project (i.e., Class 4 scope definition, weak project system, complexity, location, and environmental issues.)

I recommend that the risk analysis and contingency estimate be redone using AACE Recommended Practices. This includes parametric analysis for systemic risks (a model is available from AACE for this) and the Expected Value method with Monte Carlo Simulation which will leverage the project-specific risks already identified in our risk register. We should also assure that schedule risk analysis is integrated with the cost risks analysis; the methods above address this (a CPM-based risk analysis method is not advised given the quality of planning at this stage).

With the Board meeting coming shortly, I recommend that we meet ASAP with the PM to plan the work. The main tasks include a session with key stakeholders to rate the systemic risks and a workshop with team members to screen and quantify project-specific risks. Input from the consultant will be important and we should see if he can help facilitate these sessions if appropriate.

I am confident that if we apply these best practices, it will result in a much better basis for the business to make its investment decision. I can be reached anytime at myemail@middling.com or x-1234 to answer any questions.◆

- Perform an analysis
- Make a recommendation based upon the analysis
- Close the memo

In the introduction, grab the project manager in the first sentence with the issue at hand and its importance to the project. This sets the stage for the rest of the memo. What is the issue that needs a decision or needs to be addressed? Provide additional information as required to educate the project manager on your subject matter area if necessary.

Second paragraph, discuss potential solutions to the problem. There are potential solutions provided in the writing exercise. If you decide the potential solutions are not "complete" and you have a "better" solution, then you may add that solution to your memo. You should still address the solutions provided in the exercise.

Once the potential solutions have been discussed, a recommendation which is based upon the data provided should be presented. Remember, part of this exercise is to deal with data that is "imperfect" or conflicts with other data. The recommendation should address all the data and describe why you chose to discount some of the data that was provided.

Finally, close the memo. Summarize the memo and what has been discussed; offer to provide additional information as necessary.

In summary, this communication exercise is an exercise to communicate effectively with a project manager in one page using a specified communication format. Address the decision to be made or the issue to be addressed. Discuss potential solutions to the problem from which the project manager should choose. Analyze the data and provide a recommendation to the project manager. Finally, summarize and close the memo with the offer to provide the project manager with additional information as required.

Good Luck! ◆
Lucia Vernon was recently promoted to associate director after having worked as a senior forensic planning consultant for Quantum Global Solutions in Doha, Qatar. She was born in a small village in Slovakia to parents whose dream it was to build a big house for their family. Her favorite daily game during her childhood was building sand castles. As a result, her dream was to work in construction when she grew up and wear a helmet and big boots.

Following her dream, she studied civil engineering at the Slovak University of Technology and afterwards she finished a master’s of science degree (MSc) in management and economics in the building industry. Showing her commitment to her dream, she achieved the academic honor of best student of the year. During her studies she sat in class and watched the building of Burj Al Arab in Dubai and dreamt about being a part of the Middle East construction boom.

Lucia spent her summer holidays on a students’ work program and travelled in foreign countries. She still remembers her best summer holiday working as an architect’s assistant in AX Holding Company in Malta.

After her university studies, she got a job offer from a well-known engineering company in Slovakia, IDO Hutny Project, where she started as assistant to the project manager preparing the tender for a desalination plant in Malta. She spent four years working for this company in different job roles which led to the position of project control manager. It was at this time that her dream to work abroad was re-awakened.

Her first international role arrived across LinkedIn and brought her to work on the biggest dry cooled power station in the world being built at the time in South Africa. She started work there as a junior planner working for the delay expert preparing delay analyses and supporting the claim preparation team. That was the first time she used AACE International Recom-

Lucia gives big part of the credit for a success to AACE International. Documentation (RP and other reading materials) available on the AACE International portal helped her to learn and implement professional practices at her work. She has a lot of trust in AACE and always motivates her colleagues and friends to become members of AACE International.
mended Practices at work and she started to believe that this could be the direction she should follow in the future.

After completing her job assignments in South Africa, she moved to Paris to support a renowned delay expert in preparing the delay analysis for a nuclear power station in Finland. During her time in Paris she found herself becoming more and more passionate about delay analysis and forensic planning and wanted to develop in this area.

Approximately three years ago she received an offer to work as a forensic planner for Quantum Global Solutions in Doha and moved to Qatar. Lucia adapted well to the new and challenging environment and went on to work on numerous complex projects. She has found that her proactive approach and good inter-personal skills are essential elements to enable her to produce the required analyses for claims and produce high quality and consistent results. Lucia was also able to take formal expert witness training and undertake the role of party appointed expert and provide strategic advice on matters of delay.

Lucia gives big part of the credit for a success to AACE International. Documentation (RP and other reading materials) available on the AACE International portal helped her to learn and implement professional practices at her work. She has a lot of trust in AACE and always motivates her colleagues and friends to become members of AACE International. In 2016, she was elected to the Qatar Section Board of Directors in the capacity of director of marketing and publicity. In this role, Lucia helps the Qatar Section reach out to people and organizations in Qatar. She also helps the section by hosting regular technical workshops, such as the recent ‘Practical Training – Windows Analysis’ and best practice seminars and conferences with industry experts to further enhance awareness of AACE International among professionals in Qatar and the Middle East.

Lucia's motto is: "Work hard, follow your dreams, and they will come true.”

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21st Century Leadership Intelligence

Magi Graziano

Being an effective leader in today’s world seems to be much more complicated than in years past. Global workforce surveys report that highly qualified, motivated people chose to work for companies that build a strong, inspiring culture and that monitor and address both workplace culture and climate issues as they arise. If recruitment and retention of highly qualified, motivated people is one your organization’s initiatives, leadership intelligence ought to be another. They go hand in hand.

Leadership Intelligence relies on your ability to grow, learn and master new ways to lead people, and there are three tenets to consider when boosting it:

1. **Self-awareness** - Self-awareness begins with the curiosity and courage to hear what works and does not work about your leadership and the culture that exists in the organization. Once you become aware of your competitive talent advantages and your talent barriers from the eyes of your people, you are equipped to take powerful action. Self-awareness allows you to leverage your talent and intervene when and where necessary to remove those personality ticks that are in the way of your true leadership potential.

2. **Executive Brain Function**

   Optimizing your Executive Brain function is a secret weapon of Leadership Intelligence. The PFC, prefrontal cortex, is the part of our brain where strategic thinking, collaboration, reasoning and creativity come from. When a leader is aware of their goals and visions as well as in control (conscious) of their thoughts, responses, and well-being—and the leader leverages both hemispheres of their executive brain through right/left hemisphere integration—their leadership intelligence and effectiveness skyrockets.

3. **Response Agility**

   Response Agility is the ability to respond in an appropriate, controlled manner—regardless of the current stress or breakdown the leader is facing. Being agile with response and reaction is key to effective leadership. Flat line reaction is not appropriate for all situations. Screaming and yelling is not appropriate for any situation. Anger and frustration might be needed at times, and curiosity and collaboration may be needed at other times.

Magi Graziano, as seen on NBC, is the CEO of Conscious Hiring® and Development, a speaker, employee recruitment and engagement expert and author of The Wealth of Talent. Through her expansive knowledge and captivating presentations, Magi provides her customers with actionable, practical ideas to maximize their effectiveness and ability to create high-performing teams. For more information on Magi please visit www.KeenAlignment.com.
Daniel Gilmour, PSP is a project controls professional with close to 10 years of experience in the construction industry. His experience includes estimation, project management, scheduling, and forensic delay analysis roles across a broad spectrum of project types—ranging from education, sports and entertainment, industrial plants, heavy highway, airports, subway/rail, residential building, commercial building, and high-end retail. Dan has worked as a project scheduler or schedule consultant on projects totaling over three billion dollars in contract value. He holds an AACE International certification as a Planning and Scheduling Professional (PSP).

Dan grew up in Fair Haven, NJ, in a supportive family that tolerated living room forts and his exploring expeditions to neighborhood construction sites. An avid ice hockey player, hockey taught him how to work hard on and off the ice. He capped off his hockey career as a league all-star and captain of his college team. When dreams of a professional ice hockey career faded, he focused on his studies and discovered a passion for the built environment.

He earned a Bachelor of Science degree in Civil Engineering from Carnegie Mellon University in Pittsburgh, PA. Upon graduation, Dan joined Perini Corporation’s Northeast Civil Division in Peekskill, NY, as a junior estimator. Eager to get more exposure in the field, he was given the opportunity to fill the role of scheduler for the company’s East Side Access projects at Harold Interlocking in Queens, NY.

For Dan, membership in AACE has provided an invaluable resource for technical papers and recommended practices in project controls. He enjoyed his experience at the 2016 AACE Annual Meeting as a beneficial conduit for continued learning, a crucial exchange of strategies toward the sustainability of the project controls profession, and a unique opportunity for networking with industry leaders.
He was fortunate to learn project scheduling principles under the mentorship of Daryl Manty, the company’s lead scheduler for the East Side Access project. After realizing his aptitude and enthusiasm for project controls, Dan continued his career with Riverso Associates, Inc., a project management and claims consulting firm in Scarsdale, NY. At Riverso, he found another tremendous mentor in David Mott, PSP, who pushed him into forensic schedule analysis and encouraged his membership in AACE.

Dan is currently employed by Brasfield & Gorrie in Atlanta, GA, where he lives with his wife, a professional opera singer, and their two-year-old daughter. For Brasfield & Gorrie, he is principally serving as a planner/scheduler for the construction of SunTrust Park, the future home of the Atlanta Braves. The complex new ballpark will open with one of the fastest delivery schedules in Major League Baseball history.

In addition to his role on the ballpark, Dan is currently overseeing the project schedules totaling over 950 million dollars of contract value—including the sitework, utility, and parking deck work outside of the stadium, One Ballpark Center—a nine-story office tower, and the Omni Atlanta at SunTrust Park—a 16-story, 260-room hotel overlooking the ballpark. He has also begun working through the planning and schedule development phase for the new Atlanta Hawks Training Facility in Brookhaven, GA.

Dan has been an AACE member since 2014, and has been an active member of Atlanta Area Section of AACE since moving to Atlanta in 2015. In 2016, he joined AACE’s Rising Young Professionals Committee (RYP). For Dan, membership in AACE has provided an invaluable resource for technical papers and recommended practices in project controls. He enjoyed his experience at the 2016 AACE Annual Meeting as a beneficial conduit for continued learning, a crucial exchange of strategies toward the sustainability of the project controls profession, and a unique opportunity for networking with industry leaders.

Dan’s advice for young professionals in the project controls profession is to, “remember that despite the technical and data-driven nature of our craft, we work in an industry that inherently revolves around people. The ability to read your audience and communicate effectively to different stakeholders and project leaders is essential to your personal success and the success of any project controls program as a whole.”

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AACE INTERNATIONAL’S
SAVE THE DATE - JUNE 11-14
2017 ANNUAL MEETING
ORLANDO
HYATT REGENCY
Because of the economic conditions that existed at the time of writing this article, most companies re-evaluated how they executed their suite of projects. In the past, many organizations simply executed projects, regardless of how they affected the overall business and strategic plan. During the oil boom, organizations were rushing to execute projects in order to capitalize on the high oil prices. This lack of proper business planning created some negative behaviors and outcomes, as many projects were executed over budget and missed the targeted in-service dates. This behavior only demonstrated that many organizations did not have a proper understanding of strategic portfolio management.

Another outcome created by the economic struggles is that most organizations did not have a vast amount of capital at their disposal. These organizations had to execute a capital expenditure program with limited cash, and therefore, minimal resources. At the height of the economic boom, many organizations were seeking to expand their assets and invest large capital dollars on strategic growth plans. While these projects warranted needed investment to maintain or increase market share, these projects drew a large amount of capital from the organization, while providing no return on investment until these projects were introduced into service. Organizations could no longer afford to tie up capital, nor have the luxury of spending capital dollars as freely as they had in the past.

Based on the current market conditions that existed at the time of writing this article, organizations needed to balance the investment of their capital dollars as defined by their strategic plan. A continual assessment of existing facilities had to be completed in order to understand the nature of their aging facilities and operational risks in order to sustain current operating conditions. These assessments allowed the organization to introduce optimization and debottlenecking plans, as well as revamp and retro-fitting strategies in order to continue to maximize operational throughput. During financial restrictions or when economic downturns occur, many organizations will alter their strategies to minimize large expenditures on growth strategies, and develop plans that allow for incremental gains in volume throughput. Finally, as customers, regulators, and governing bodies introduce increased requirements in...
order to ensure public safety and environmental responsibility, operational assessments may become more frequent, and introduce another level of complexity.

So, what is Strategic Portfolio Management? In its purest form, simply by word definition alone, strategic portfolio management can be defined based on the following:

The definition of strategy is simply a plan of action that is designed to achieve a major or overall goal. Portfolio is defined as a collection of assets held by an institution or organization. In regards to this article, this would represent a portfolio of projects in an organization. And finally, management includes the planning, organizing, staffing, leading or directing, and controlling an organization to accomplish the goal or target. Therefore, management will support the identification and use of resources, such as financial, technological and human resources.

When combined, these three words when introduced into an organization can provide a powerful and influential approach to operational and business success:

Strategy + Portfolio + Management = Operational and Business Success

As identified earlier, strategic portfolio management provides a structured and repeatable approach that allows the organization to effectively and efficiently steward capital dollars, while minimizing corporate risk. Figure 1 describes how strategic portfolio management fits in with the organization to support the stewardship of these capital dollars.

Based on Figure 1, the taxonomy of strategic portfolio management for an organization is dependent on three levels; enterprise management, portfolio management and project management. All three levels are highly integrated in order to ensure the desired outcomes. You cannot have success in portfolio delivery if the organization does not have the required maturity in enterprise management and strategic planning, and subsequently you cannot have success in the delivery of the portfolio without having proper project success and mature project management processes in place. Finally, you cannot have project success if the project does not support the strategic plan. While a project can be executed successfully on its own terms (in terms of safety, quality, cost and schedule), if it is not considered a strategic project, nor does it assist the organization in achieving its business objectives, the project should not qualify as a success. While others may disagree with this statement, the strategic portfolio management model and plan should allow the organization to achieve success by executing the right projects at the right time with the right people.

Completing a project that is not considered a strategic project, nor supporting the organization’s business objectives should be considered irresponsible and the misuse of capital funds.

Desired Outcomes and Benefits

The premise for this article is to provide the audience with the opportunity to design and implement a strategic portfolio management model. This paper can also be used as an opportunity for organizations to assess their existing strategic portfolio management processes, and implement improvements or corrective actions that may have been identified.

Ultimately, the authors want to present two desired outcomes. First, this article defines the requirements to design and implement a strategic portfolio management model. This article assists the organization in defining the appropriate structures, oversight and ownership for the development of a strategic portfolio management model, as well as outline the framework for developing and managing the strategic portfolio policies, procedures and processes. Finally, the strategic portfolio management model section of this article assists in defining the desired expectations, which supports the development of the roles and responsibilities for the parties involved.

![Figure 1 – Executive, Portfolio, and Project Relationship Triangle](image-url)
Secondly, this article supports the development and execution of a strategic portfolio plan. The plan would represent the suite of projects to be managed and executed during the allotted timeframe. The strategic plan would provide supporting portfolio budgets and schedules, cash flow spend profiles, portfolio risk management plans as well as resource requirements. The plan would also be considered the baseline for change management and future evaluations.

Figure 2 represents the simplistic workflow for designing an overall strategic portfolio management model and plan. In order to ensure a robust and mature strategic portfolio plan, the organization must first design a strategic portfolio management model.

The benefits of introducing a strategic portfolio management model, and subsequent portfolio management plan include the following:

- Balanced approach to realize business objectives to maximize shareholder value.
- Improved decision making capabilities in order to reduce corporate risk and maximize operational throughput.
- Improved life cycle costs for the portfolio of assets.
- Improved quality of the portfolio schedule, estimating and cost budgeting and cash flow management.
- The reduction in opportunity losses (completing the right projects at the right time with the right resources).

How This Article is Structured
This article is divided into three sections. Section one introduces the readers to the enterprise capabilities required to introduce and support the Strategic Portfolio Management Model. Considered the cornerstone for policy development and implementation, the enterprise defines "best in class" requirements for improved portfolio delivery. This section also provides the necessary direction for defining business objectives and corporate management in order to set strategy and authority structures.

Section two provides the audience with an understanding for preparing the portfolio for execution by using the Plan, Do, Check, Act (PDCA) methodology for strategic portfolio management. The PDCA model is an iterative four-step problem solving process that will support the continuous improvement and optimization of the strategic portfolio management plan.

Finally, the last section provides the reader with some examples of the diagnostic and reporting capabilities that the strategic portfolio management model can provide.

STRATEGIC PORTFOLIO MANAGEMENT MODEL

Enterprise Capabilities
Prior to embarking on the journey of developing a strategic portfolio management model, the organization needs to recognize its ability to implement and execute this ambitious endeavor. The desired enterprise capabilities are represented in Figure 3, which identifies the main elements required to assist in the implementation of a robust, effective and efficient strategic portfolio management model.
As represented at the top of the enterprise capabilities chart, leadership can be considered the driving force for all other subsequent principles. To maximize the full benefits of implementing a strategic portfolio management model, the executive team is required to provide the necessary awareness, alignment, and desired behaviors in order for the organization to support the appropriate influence and direction based on the company’s vision and business objectives. The senior executives must demonstrate leadership through the support of the development, continuous improvement, reconciliation, and governance (compliance) of the strategic plan and supporting methodologies. This further leads to effective problem solving and decision making, and improved outcomes.

Peter Drucker said that, "culture eats strategy for breakfast." Therefore, the company’s culture is required to complement and support the business objectives and strategy in order to ensure the success of developing and implementing a strategic portfolio management model. Culture, which is a derivative of company leadership, drives adherence to the values required to support customer focus, teamwork, accountability and adaptability.

Another principle that requires the appropriate level of focus and attention is for the organization to attain the appropriate level of expertise required to implement and manage the strategic portfolio management model. This would require a number of people to have the developed advanced skills in strategic and operational planning, risk management, financial and project accounting, development engineering, and portfolio / program / project management to name a few. A formal process for developing and maintaining the required skill base should be designed and implemented to support this principle.

The final principle, governance, provides the organization with the foundation in which the organization operates as a management body. While some may consider governance as a "policing" exercise, it is required to ensure that the strategic portfolio management model and its supporting policies, practices, and processes are adhered to. The strategic portfolio management model in its essence will provide the basis for an integrated strategic development plan for the year-over-year portfolio of projects. The governance principle will also administer the assigned accountabilities to ensure portfolio performance is being realized, while mitigating all potential risks that may deter the overall plan from occurring.

**Business Objectives and Corporate Management Strategies**

Prior to introducing the concept of strategic portfolio management within an organization, the organization must define its business objectives and corporate management strategies. Once the organization’s vision has been defined, the organization can determine its capital and operating budgets to support the desired vision. The corporate management strategy may include a series of mergers and acquisitions (M&A), or the building of new assets via expansion or a series of new growth projects, as well as any ongoing maintenance and sustainability projects. Regardless of the corporate strategy and business objectives, all aspects of the organization will require funding via attained revenues or financing in order to achieve the execution of its proposed strategic portfolio while maintaining current operating conditions.

After the business objectives and corporate management strategies have been defined, the organization can begin defining the business strategy and authority structures.

**Define Business Strategy**

In order to provide sustainability for the strategic portfolio management process, the organization will need to understand its overall goals and objectives. Once the goals and objectives have been defined, the organization can develop a "long range" financial and strategic outlook to support the goals and objectives. The timeline for a long range plan may be within a 10 to 20 year range. Once complete, the organization can further identify the “short term” financial and strategic outlook. This may include a plan for the next fiscal period, and a two to five year plan. This outlook would provide the necessary framework for establishing tactical and fiscal goals, as well as provide a basis for decision making for future events. At a predetermined time, the executive management may want to adjust, redefine, or correct the strategic portfolio plan as business needs change.

As represented in Figure 4, in order to define the business strategy, the organization must first define its vision in order to assist in establishing a strategic plan. For instance, an oil producer may want to increase the daily operational throughput from 250,000 barrels (bbls) to 500,000 barrels (bbls) in seven years, while reducing emissions by 25 percent over the same time period. By defining this vision, the organization can start formulating its strategic and tactical planning requirements. The ending result is a long range plan, as well as a short term plan and the current fiscal plan.

Once the business strategy has been identified, the organization can start to recognize the required funding in order to meet the demands of the organization. As indicated earlier, the organization may increase throughput through a series of mergers and acquisitions (M&A), or building new assets via expansion, or a series of new growth projects.

Regardless of how the organization may achieve the desired throughput, it must identify and communicate how the potential increase in volumes will be attained. This will allow the organization to initiate the discussions for developing the strategic portfolio management plan. Figure 5 provides an example for determining how throughput may be achieved.

The organization will need to identify how it will increase production in order to meet the objective of reaching an increase of 250,000 barrels per day by year 2021. From the chart, it is identified that most of the increase in volumes will be through the development of growth projects. Sustainability projects will not provide any increase to volumes, however capital dollars will be required to maintain current production rates.
Defining how the organization will increase its production is crucial in determining the required funding. Each methodology for increasing production, whether it is through M&A, growth, or revamp/debottlenecking projects, will have a different price point. Revamp and debottlenecking projects usually cost more per barrel to develop and execute than that of growth projects, simply because of the fact that there are less incremental volumes to be gained. Also, construction costs are usually higher for revamping and debottlenecking projects because of decreased labor productivity and increased site congestion.

The preliminary cash distribution chart shown in Figure 6 identifies how much money is required by category in order to support the 7 year plan of increasing the daily production by 250,000 bbls. As an example, the organization has allocated $9.00 billion toward project work and $3.55 billion toward mergers and acquisitions, for a total of $12.55 billion.

While there is an understanding that sustainability projects do not contribute to an overall increase in production, there is still a need for the organization to re-invest capital into its existing facilities in order to maintain current production rates. For this to occur, the organization may want to invest the same dollars in which its asset base depreciates. For example, the organization has $13.38 billion in assets. The annual depreciation of these assets, using an industry standard, is four percent. Based on this assessment, the organization will be required to invest $0.535 billion in sustainability projects in order to ensure operability, reliability, and maintainability of its existing asset base.

Once the organization has determined how it will achieve its increase in production and defined the preliminary capital requirements, the organization can now establish its preliminary expected timelines in which it would expend the money. In order to maintain the financial health of the organization, it will be required to balance revenue streams (cash in) against expenditures (cash out). Without the understanding of the time distribution of required funds, the organization can over-extend itself and cripple its cash flow, which could inherently restrain current and future production volumes. This cash flow distribution, when reflected against production volumes, and subsequently revenue, will also assist the organization in determining if the projects will be funded by available funds within the organization or by financing. As soon as the funding strategy and cash flow has been determined, the organization can then determine the year over year fiscal requirements to support the execution of the projects. The cash flow process is considered an iterative process; as project information matures and becomes more available, the project timelines and dollars will also mature and become more accurate. However, at some point during the planning process,
the organization will be required to “freeze” the budget. This will be discussed in greater detail later on. Figure 7 provides the reader with an understanding of the projected fiscal spend for the years 2015 to 2021.

As discussed in the example provided earlier, the fiscal spend assists the organization in recognizing its cash flow requirements for the next seven years so that it may achieve the desired production rates. This would further support the success of reaching the organization’s goals and objectives as defined by the vision and business strategy.

Once the year-over-year cash flow requirements have been determined, the organization can now further breakdown its cash flow requirements per fiscal year. For example, in Figure 8 the organization has identified that it will spend $0.921 Billion for 2015. From the chart, it is identified that most of the money has been allotted for the development of growth projects ($0.460 Billion).

The organization will also need to consider other aspects of how the funds will be distributed. For instance, an organization may have different operating units or geographical areas. Through the assessment process, the organization should identify which areas or business units will require more funding, and which areas or business units will require less funding.

As an example, an oil sands producer has four unique process attributes within its organization. An oil sands producer will have a mining component, where the oil sand product is mined (via open pit mining). Once the product has been mined, it is then transported to the extraction unit where oil is separated from the sand. From there the oil is further refined through an upgrading process. Upgrading oil is conversion of bitumen (oil sand) into hydrocarbon streams, such as naphtha, light gas oil (LGO) and heavy gas oil (HGO). These oils are blended to create a high quality, light, low sulphur crude oil.

Supporting the entire process is the utilities requirements (process and utility pipe and pipe racks, steam generation, electrical demands, and water supply to name a few). If an oil sand producer is required to improve throughput, it will need to identify where demand restrictions for each operating unit are evident. To illustrate, if the upgrader is expected to produce 350,000 bbls of oil per day, it will need to optimize (and debottleneck) its throughput within the upgrader unit itself in order to achieve the desired goal. This unit optimization may require the organization to assess steam and electrical demands and determine if enhancements are required to support the desired throughput goals. However, the upgrader unit cannot achieve its desired goal alone. One must consider how all units will work within the process in order to achieve the overall goal of reaching 350,000 bbls per day. If the
extraction unit does not provide the required amount of feedstock to the upgrader, the upgrader cannot meet the demands. Subsequently, if the mining unit cannot provide the required cubic meters of oil sand product to the extraction unit, the extraction unit cannot produce the desired amount of feedstock to support the demand of the upgrader unit.

To further understand the business unit and geographical needs, the organization will be required to understand and establish the correct dependencies of all programs and projects in each operating unit in order to define the overall portfolio, and whether these programs and projects are executed sequentially or concurrently. The organization will need to consider how any new or upgraded facilities will affect its overall operations. For instance, the main goal of a liquids pipeline company is the distribution of oil from an upstream upgrader facility to a downstream refining facility (and subsequent storage and tankage facilities for distribution to petrochemical facilities and gas stations, etc.).

While the development of pipelines, facilities, pumping stations, metering, and tankage are the primary purposes for the distribution of a liquids pipeline company, the liquids pipeline company will also need to understand the electrical demands of which the upgraded or new facilities will require. This may warrant the need to introduce a new substation within the existing facilities. Decisions to include a new substation into the proposed project, or develop a subsequent project with a larger scope of electrical requirements will need to be discussed and determined. There are many items to consider when introducing projects into the portfolio, and the organization needs to understand its utilities and off-sites, balance of plant demands or shared resources/services to support the requirements to effectively drive the execution of its primary projects.

Based on the understanding of distributing allocated funds to specific business units and geographical area, the organization can drive improved business decisions in order to optimize cash flow and operational throughput.

As an example to the previous discussions, the charts in Figures 9 and 10 identify the allotted funding requirements of $0.921 billion for 2015, by business unit and geographical area.

There are many considerations that are required to be assessed when determining the strategic portfolio management plan. As discussed earlier, the assessment of funds based on the categorization of project type, business unit and geographical area should be considered. These assessments provide further understanding into the required capital investment throughout the entire organization and provide the necessary direction in achieving the desired goals and objectives.

Define Portfolio Execution Strategy

The final aspect in determining the business strategy is to define the overall portfolio execution strategy. This will encompass the logistical aspect of the portfolio, specifically the timeline for the execution of the projects within the portfolio, the location of the projects (geographical areas where multiple projects are executed at an existing facility, or a single project being executed over different locations), as well as contracting strategies, contractor workforce requirements, demands, etc. Also, the organization will need to consider how its strategic portfolio management model will need to optimize/use and balance engineering, procurement and construction activities. The illustration in Figure 11 is an example of a portfolio schedule that identifies the timelines in which the projects will be executed, and the achieved throughput.

Based on the requirements identified earlier, there is a lot to consider when determining how the strategic portfolio planning model will define and apply business rules for the selection of the projects and subsequent portfolio. Also, please remember that the organization will need to reconcile the preliminary capital cost requirements once the enterprise risk assessments have been completed. The enterprise risk assessments will support the organization in defining project, business unit, and regional priorities. As stated earlier, because of the limited availability of capital, the organization will need to balance the priorities of
projects within the fiscal cash ceilings. Once the capital cost requirements have been balanced and optimized, the organization can “freeze” the budget and schedule. This provides the organization to ability to manage and control project and portfolio dollars, and support change management as well.

Defining business and portfolio execution strategies based on the organization’s vision, business objectives and corporate management is a necessary step in order to bring guidance to the development of the strategic portfolio management model. This will also enhance the opportunity to balance the portfolio based on cash flow demands and constraints, as well as execution strategies, such as physical locations and resource (owner, engineering, procurement, and construction) constraints.

**Define Authority Structures and Control**

The most crucial aspect of introducing a strategic portfolio management model is to determine the authority structure required to effectively manage and control the overall process. This structure will include decisions on who owns the overall portfolio, as well as approval protocols, gate keeping and compliance, roles and responsibilities for participating parties, budget processes and required reporting and monitoring, etc. This section provides the reader with further understanding of these requirements.

In order to ensure minimal conflict in developing the strategic portfolio management model, and subsequent governance, the organization will need to determine who has the ultimate authority of the portfolio. The owner of the model and plan can further assign the appropriate levels of accountability and responsibility to other individuals or groups in order to assist in the further development of the portfolio. The governing body of the portfolio would be required to develop protocols for pre-screening projects (how projects are identified and introduced as part of the preliminary assessment of projects). Also, the governing body would also need to introduce a portfolio change management process that defines how new projects are introduced into an existing portfolio, or for projects that are no longer required as the business case does not support the execution of the project. The change management process will also be required to define how changes to the execution of existing projects are updated within the portfolio.

To support effective decision making and problem solving, as well as conflict management and resolution, the organization will also need to define its strategic portfolio management authority structure. The design of the authority structure should encompass all financial approval requirements, existing organizational structures, and authority guidelines for executive officers within the organization.

Figures 12 and 13 provide an example of two organizational structures. The organizational structures identify the accountability and reporting hierarchy within an organization. Based on the oil sands producer example that was presented earlier, the functional organization structure identifies the Vice Presidents (VP) for Mining, Extraction, Upgrading and Utilities. The other organization structure (for a liquids pipeline company) provided illustrates a geographical approach for defining the accountability and reporting hierarchy within an organization. Regardless of the organizational hierarchy within an organization, each of the senior vice presidents and subordinates within these organizational structures will have specific accountabilities, responsibilities, and expectations in order to support the organization as a whole.

From the examples provided, the organization will need to consider all aspects of decision making and approvals, specifically around portfolio ownership and approval in order to minimize conflict and isolated decision making.
Regardless of the organizational structures implemented, the organization will need to be very careful in its approach so that it does not introduce unhealthy conflict and competition among the leadership group. For instance, the organization may not achieve its objectives and goals, nor protect the effectiveness and efficiency of its operations if each vice president was accountable for their own assessment and prioritization of their respective projects, and subsequent budgets. A project deemed a priority within one vice president’s respective area may not be a priority within the overall portfolio.

Based on the functional structure provided, the organization may require the Chief Operating Officer (COO) to own the overall portfolio in order to eliminate conflict and to ensure that the correct projects are being selected. This approach would allow the organization to manage the suite of projects for the whole organization (based on overall risk and priority), while eliminating project selection at the functional level. By eliminating project selection at the functional level, the organization can eliminate unnecessary risks that may occur based on this inclusive and isolated approach.

One can take the same approach for the geographical structure. However, the organization may need to consider the responsibilities of each of the vice presidents and COO of the organization. In this example, if the Senior Vice President (SVP) for engineering and projects has the accountability for identifying and executing the projects that enhance the operability of the organization, but the budgets and fiscal spending requirements are identified and owned by the COO, the organization may need to assign the ownership of the overall portfolio to the Chief Executive Officer (CEO). The CEO would be required to own the overall portfolio as this will eliminate any conflict between the COO and the SVP of engineering and projects.

This approach may not be acceptable by the organization, as it may take the CEO away from his or her primary duties. The organization may consider reorganizing its organizational structure to streamline the decision making and control process of the strategic portfolio management plan. Figure 14 identifies how the organization may restructure its personnel to support the strategic portfolio management model and plan. By assigning the SVP of engineering and projects to the COO, the organization can then assign the ownership of the overall portfolio to the COO.

In order for the organization to provide the proper governance and stewardship of the strategic portfolio management model and plan, the organization must define the roles and responsibilities of the key individuals. While the organization can define its own respective roles and responsibilities
around portfolio management, Table 1 provides an outline for introducing three critical roles, the portfolio owner, risk manager, and fund manager. These three roles provide the necessary influence and decision-making support to the development and execution of the strategic portfolio management plan. These three roles also provide the necessary independent judgment required to protect the interests of the organization.

### Stage-Gating

Once the governing body, or at least the authority structure has been defined, the organization can further introduce other featured necessities that are required in order to ensure that an effective and efficient strategic portfolio management process has been defined. This would include the introduction of a project stage-gating, evaluation, and approval process. This process supports individual project requirements, which will in turn, support the overall portfolio. Because of the limited cash flow and resources, the stage-gating, evaluation, and approval process is used as an effective tool to screen out “bad” projects (projects that do not meet the intent of the business objectives, nor mitigate risk, create sustainability, or introduce revenues into the organization). The stage-gating process is considered a go, no-go approach to project delivery. Figure 15 identifies the stages used within the process industry.

As the project migrates through the stages, the project definition becomes more mature as the engineering quality improves and decision-making data is developed.

<table>
<thead>
<tr>
<th>Role</th>
<th>Responsibilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Portfolio Owner</strong></td>
<td>The role of the portfolio owner is to ensure that each project within the portfolio has satisfied the required conditions based on the assessed risks and financial protocols. The risk and financial assessment will support the prioritization of the suite of projects, and assist in defining the overall portfolio. The portfolio owner will have the required authority for the project’s approval, however, in some circumstances, the portfolio owner will rely on advice from the executive membership prior to determining whether or not to approve the project.</td>
</tr>
<tr>
<td><strong>Risk Manager</strong></td>
<td>The role of the risk manager is to ensure that the overall risk strategy is defined, communicated and understood. The risk manager will also provide the necessary risk management processes, tools and systems. Based on the execution of the projects within the portfolio, the risk manager may re-evaluate the projects against the enterprise risk matrix and provide recommendations to implement changes based on this re-evaluation.</td>
</tr>
<tr>
<td><strong>Fund Manager</strong></td>
<td>The role of the fund manager is to ensure that the overall funding strategy is defined, communicated and understood. The fund manager also supports the financial assessment of the suite of projects. The fund manager will also provide Authority for Expenditure (AFE) and fiscal offsetting processes and management. The fund manager will rely on the advice of the project team membership in regards to releasing funds and budget transfers among the portfolio.</td>
</tr>
</tbody>
</table>

- Reviews each project proposal and assess the project against the enterprise risk matrix (screening).
- Supports the communication of the portfolio plan.
- Administers risk updates and provides recommendations for changes to the overall portfolio, based on the portfolio owner’s support of the assessment and any recommendations.
- Reviews each project proposal and funding request (screening).
- Supports the overall portfolio plan by identifying budget optimizations for fiscal compliance (iterative process).
- Supports the communication of the portfolio plan.
- Administers financial updates and changes to the overall portfolio, based on the Portfolio Owner’s assessment and recommendation.
increases. To understand the requirements for defining project definition and maturity, AACE International has developed a recommended practice. Recommended Practice, 18R-97, Cost Estimate Classification System – As Applied in Engineering, Procurement, and Construction for the Process Industry [3, p.53], outlines the project definition required to achieve a specific estimate class. Each estimate class can then be associated with the stages of the project stage-gating, evaluation, and approval process. Table 2 provides the understanding of the relationship of the project stage-gating, the degree of project definition, and the related estimate classification.

Founded on AACE International recommended practice, the degree of project definition is determined by the overall percent of engineering and design completed. Based on the degree of project definition, an estimate classification identifier is assigned. The estimate class identifies a generic maturity and quality matrix, as well as outlines the required project and engineering deliverables in order to achieve the desired estimate class.

Table 2 – Stage-Gating and Estimate Classification Relationship Table

<table>
<thead>
<tr>
<th>Stage</th>
<th>Desired Outcome</th>
<th>Degree of Project Definition [3, p.53]</th>
<th>AACE Estimate Classification [3, p.53]</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEL 1</td>
<td>Business Appraisal</td>
<td>0% to 2%</td>
<td>Class 5</td>
</tr>
<tr>
<td>FEL 2</td>
<td>Scope Development and Selection</td>
<td>1% to 15%</td>
<td>Class 4</td>
</tr>
<tr>
<td>FEL 3</td>
<td>Detailed Definition</td>
<td>10% to 40%</td>
<td>Class 4</td>
</tr>
<tr>
<td>Execution</td>
<td>Design, Procure and Construct</td>
<td>30% to 70%</td>
<td>Class 2 and Class 1</td>
</tr>
<tr>
<td>Operation and Maintenance</td>
<td>Commissioning and Startup</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>Operate and Maintain</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Based on the maturity of project definition, the project team can better understand the costs of the projects, which are represented within the overall strategic portfolio plan. The stage-gating, evaluation and approval process will assist the project teams in defining the scope of work for the project, and eliminate options or multiple solutions in order to provide the best possible design at the lowest cost. While most projects represented on the strategic portfolio management plan are defined by risk and therefore priority (specifically for sustainability, revamp and debottlenecking projects), growth or expansion projects may require more scrutiny.

As identified earlier, the stage-gating, evaluation and approval process can also assist the project teams in defining the probability (go, no-go) of executing the project. However, in some circumstances, the development team may be required to assign the probability of a project moving forward as a result of budget timeline and approval constraints. Application rules will need to be defined by the organization in order to determine which projects will be represented on the overall strategic plan. For example, a liquids pipeline company (midstream) provides oil transportation for its oil producers. Oil producers may want to move their product from an upstream facility to a downstream facility. Depending on the payment and funding structures, the pipeline company may be dependent on the oil producer’s decision and therefore the probability of whether to build or revamp existing pipeline facilities to meet the oil producer’s needs. The application rules of assigning a probability will determine the acceptable threshold for a project to be represented on the strategic portfolio management plan, and subsequent spend profiles. An example of an application rule is that a project will be represented on the strategic portfolio management plan if it meets a threshold percent probability of 75 percent or greater. This allows the organization to move forward with budget and schedule “placeholders” for anticipated projects. While this approach is not ideal, the need to establish preliminary portfolio budgets and schedules is required as part of the fiscal (yearly) planning cycle.
Project Management Taxonomy for Portfolio Execution

Further to the stage-gating requirements, the organization will need to define the corporate and functional mandates that support the overall business strategy. This includes any vision and mission statements as well as any executive directives and Key Performance Indicators (KPI). Subsequently, the organization will need to define the supporting project management and project control processes required to support the development and execution of a single project. The organization will need to define the required project management and project controls standard practices, processes, templates and tools in order to provide the appropriate levels of monitoring, controls and project reporting, which in turn assists in monitoring, controlling and reporting at the portfolio level.

Figure 16 provides an understanding of the strategic portfolio management hierarchy and the supporting project management and controls hierarchy of policies, procedures and process that are required to execute a single project. The adherence of the policies, procedures and processes minimize execution risks, and brings the appropriate level of awareness to the health of the project, as well as the overall health of the portfolio.

One of the other failing aspects of any organization is the lack of communication and undefined roles, responsibilities and expectations. When establishing the business norms for operating a strategic portfolio management model and plan, as well as the execution of a single project, the organization will be required to provide the appropriate context and governance for applying any policies, procedures, and processes. An organization cannot be successful if it does not ensure compliance to the policies, procedures, and processes. The policies, procedures, and processes are written to improve the efficiency and effectiveness of the organization, as well as improve the timeliness of decision making and problem solving. Finally, by ensuring compliance to the policies, procedures, and processes, the organization can identify and mitigate enterprise, portfolio and project risks. Policies, procedures, and processes are written to protect the interests of the organization, and not to obstruct the membership of the organization.

Establish Risk and Financial Tolerances

The purpose behind introducing a strategic portfolio management model is to provide the organization with an effective and efficient tool for developing and executing the right projects at the right time while using the right resources. By defining the risk and financial tolerances, and prioritizing projects based on these tolerances, the organization can determine the overall strategic portfolio plan, and reconcile the portfolio budget to any fiscal constraints.

Establishing Risk Tolerances and Define Decision Making Process

There are major differences between how an organization manages risk in regards to its enterprise, its portfolio and its projects. Each aspect of the business all warrant proper scrutiny when identifying, mitigating, and controlling risk, and all risk models will require a unique approach in determining the appropriate tolerances and appetite to risk, as well as governance, authority, and approval.

Table 3 provides an understanding of the types of risks that an organization may experience. While the table provides some understanding of the specific risks for the enterprise, portfolio and project, the organization will be required to define what constitutes a risk for each level of their respective businesses.

The organization will be required to ensure that the strategic portfolio management model will be designed to support the identification and management of risks at the enterprise and portfolio level. However, project teams will need to complete project risk identification and mitigation measures in order to ensure that each project will
provide the appropriate contingencies to manage the projects risks. Project risks from each specific project should be reviewed to see if there is a correlation or theme that is evident across other projects. If there is a correlation, the organization may want to introduce a portfolio risk management approach when applying any mitigation.

For the purposes of defining the strategic portfolio management plan, the organization should assess each project against the enterprise risk model and rating matrix. While all projects should be assessed based on risks, sustainability projects (also identified as non-revenue generated projects) that jeopardize the efficient use or optimization of its operations, or pose a risk to the safety of the public and the environment should be thoroughly examined using the risk rating matrix.

Through this enterprise risk management approach, the individual who has ownership and accountability for the strategic portfolio model and plan can assign the appropriate risk ranking to the project. This will allow the organization to determine which projects present the highest level of risk to the organization. Based on the extreme nature of enterprise risk, the potential consequences, and the likelihood of the risk occurring, the organization can then determine the priority of each project against the total portfolio of projects. The authority structure identified earlier provides the necessary governance in reviewing the priorities of the portfolio, and will provide guidance in selecting must-do projects against the nice-to-have projects. The identification of these priorities will also determine which projects will be assigned funds in order to be executed. As part of the enterprise risk management process, the organization may develop a fiscal (yearly) operational risk management review process that allows for the identification of any potential challenges (risks) to the operability, reliability, and maintainability of its assets.

By assigning enterprise risk management to the portfolio of the projects, the organization is protecting its business operations, the safety of its people, property and environment, and finally, its reputation to name a few. An organization needs to be prudent on its approach to enterprise risk management (risk versus reward), and balance revenue and profit streams accordingly (growth versus sustainability). Proper enterprise risk management provides shareholder value and its social license to operate.

**Enterprise Risk Model and Risk Rating Matrix**

For the purposes of ensuring that the organization is prudent on its approach to enterprise risk management, the following section provides the audience with an example of developing an enterprise risk model and risk rating matrix, and how it can be applied. Organizations will need to define their own approach to enterprise risk management, as they will need to determine what their enterprise risk descriptors, consequence and likelihood thresholds will be.

As identified earlier, the authors provided an example of enterprise risk descriptors:

- People
- Information
- Property
- Economic
- Reputation
- Capability

The risk descriptors allow the organization the ability to categorize and analyze risks based on a certain viewpoint. Once these risk descriptors have been defined, the organization can further determine the consequence descriptors. Consequence is the severity of an action (from mild to severe). Figure 17 is an example of consequence descriptors.

Once the consequence descriptors have been defined, the organization can further determine the terminology for each specific enterprise risk descriptor. As an example, an organization may define the insignificant consequence for the people enterprise risk descriptor as a minor injury or first aid treatment. The significant consequence for the same enterprise risk descriptor may be multiple fatalities. Table 4 provides an example of the definitions of the consequence descriptors in relation to all the enterprise risk descriptors.

While the table outlined the attributes for each of the consequence.
descriptors in relation to the enterprise risk descriptors, the organization will need to determine what constitutes a risk and consequence descriptor for their respective companies. The consequence of a project (severity of the action/task to be mitigated) will assist the organization in prioritizing the perceived risk.

Another key aspect of enterprise risk management is for the organization to determine the likelihood of an event happening. In order to determine the likelihood, the organization will need to define the likelihood descriptors. Likelihood is the chance that an action will occur (from rare to almost certain).

Figure 18 provides an example of likelihood descriptors:

Similar to defining the terminology for consequence descriptors, the organization will need to define how the likelihood descriptors of an event can be framed. There are many ways of representing likelihood, therefore the

<table>
<thead>
<tr>
<th></th>
<th>Insignificant</th>
<th>Negligible</th>
<th>Moderate</th>
<th>Extensive</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>Minor injury or first aid treatment</td>
<td>Injury requiring treatment by medical practitioner and/or lost time from workplace.</td>
<td>Major injury/hospitalization</td>
<td>Single death and/or multiple major injuries</td>
<td>Multiple deaths</td>
</tr>
<tr>
<td>Information</td>
<td>Compromise of information otherwise available in the public domain.</td>
<td>Minor compromise of information sensitive to internal or sub-unit interests.</td>
<td>Compromise of information sensitive to the organizations operations.</td>
<td>Compromise of information sensitive to organizational interests.</td>
<td>Compromise of information with significant ongoing impact.</td>
</tr>
<tr>
<td>Property</td>
<td>Minor damage or vandalism to asset.</td>
<td>Minor damage or loss of &lt;5% of total assets</td>
<td>Damage or loss of &lt;20% of total assets</td>
<td>Extensive damage or loss &lt;50% of total assets</td>
<td>Destruction or complete loss of &gt;50% of assets</td>
</tr>
<tr>
<td>Economic</td>
<td>1% of budget (organizational, division or project budget as relevant)</td>
<td>2-5% of annual budget</td>
<td>5-10% of annual budget</td>
<td>&gt;10% of budget</td>
<td>&gt;30% of project or organizational annual budget</td>
</tr>
<tr>
<td>Reputation</td>
<td>Local mention only. Quickly forgotten. Freedom to operate unaffected. Self-improvement review required.</td>
<td>Scrutiny by Executive, internal committees or internal audit to prevent escalation. Short term local media concern. Some impact on local level activities</td>
<td>Persistent national concern. Scrutiny required by external agencies. Long term ‘brand’ impact.</td>
<td>International concern, Governmental Inquiry or sustained adverse national/international media. ‘Brand’ significantly affects organizational abilities.</td>
<td></td>
</tr>
<tr>
<td>Capability</td>
<td>Minor skills impact. Minimal impact on non-core operations. The impact can be dealt with by routine operations.</td>
<td>Some impact on organizational capability in terms of delays, systems quality, but able to be dealt with at operational level</td>
<td>Impact on the organization resulting in reduced performance such that targets are not met. Organizations existence is not threatened, but could be subject to significant review.</td>
<td>Breakdown of key activities leading to reduction in performance (e.g., service delays, revenue loss, client dissatisfaction, legislative breaches).</td>
<td>Protracted unavailability of critical skills/people. Critical failure(s) preventing core activities from being performed. Survival of the project/activity/organization is threatened.</td>
</tr>
</tbody>
</table>

Table 4 – Example Consequence Descriptors [4, p.53]
following is an example of how the likelihood of an event can be expressed:

- Chance, which is defined as the qualitative assessment of likelihood of the event.
- Probability is the assigned percentage in relation to the descriptor. This value may be determined by statistical data that supports the likelihood of the event.
- Frequency is the rate at which something occurs or is repeated.

Table 5 provides an understanding of the definitions of chance, frequency and probability, in relation to the likelihood descriptors. The likelihood of an event occurring on a project will assist the organization in prioritizing the perceived risk.

The final step in developing a risk rating matrix is to determine the color coding and values to be represented on the associated heat map. This heat map provides a color coding and number system to visually assist the

---

**Table 5 – Example Likelihood Descriptors [4, p.53]**

<table>
<thead>
<tr>
<th></th>
<th>Chance</th>
<th>Frequency</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Almost Certain</td>
<td>Is expected to occur in most circumstances</td>
<td>Has occurred 9 or 10 times in the past 10 years in this organization or circumstances are in train that will almost certainly cause it to happen</td>
<td>&gt;95%</td>
</tr>
<tr>
<td>Likely</td>
<td>Will probably occur in most circumstances</td>
<td>Occurred more than 7 times over 10 years in this organization or in other similar organizations or circumstances have such that it is likely to happen in the next few years</td>
<td>&gt;65%</td>
</tr>
<tr>
<td>Possible</td>
<td>Might occur at some time</td>
<td>Has occurred in this organization more than 3 times in the past 10 years or occurs regularly in similar organizations or is considered to have a reasonable likelihood of occurring in the next few years</td>
<td>&gt;35%</td>
</tr>
<tr>
<td>Unlikely</td>
<td>Could occur at some time</td>
<td>Has occurred 2 or 3 times over 10 years in this organization or similar organizations</td>
<td>&lt;35%</td>
</tr>
<tr>
<td>Rare</td>
<td>May occur only in exceptional circumstances</td>
<td>Has occurred or can reasonably be considered to occur only a few times in 100 years.</td>
<td>&lt;5%</td>
</tr>
</tbody>
</table>

**Table 6 – Heat Map Example [4, p.53]**

<table>
<thead>
<tr>
<th>Color Map</th>
<th>Classification</th>
<th>Required Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 2, 3</td>
<td>Very Low</td>
<td>Managed by routine procedures</td>
</tr>
<tr>
<td>2</td>
<td>Low</td>
<td>Monitor and managed by routine procedures</td>
</tr>
<tr>
<td>3</td>
<td>Medium</td>
<td>Management responsibility must be specified</td>
</tr>
<tr>
<td>4</td>
<td>High</td>
<td>High risk, senior management attention needed</td>
</tr>
<tr>
<td>5</td>
<td>Very High</td>
<td>Immediate action required by executive</td>
</tr>
<tr>
<td>6</td>
<td>Extensive</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Insignificant</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Negligible</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Significant</td>
<td></td>
</tr>
</tbody>
</table>
organization in recognizing projects that have higher levels of severity and likelihood. Table 6 identifies the assigned values and color scheme. The more severe the risk, the higher the number the risk will receive.

To further support the development of the heat map, Table 7 provides clarity around the corrective action that is assigned to each color and associated values. The table further provides an understanding of the classification (very high to very low) in relation to the color map and values.

Once the enterprise risk descriptors and the consequence and likelihood thresholds have been defined, the organization can combine these tables together to create a risk rating matrix. The organization can use the risk rating matrix to identify and assign potential risks for each respective project. Based on the extreme nature of the enterprise risk, the consequence and the likelihood of the risk occurring, the organization can then determine the required response and corrective action for the project.

Table 8 illustrates the use of the risk rating matrix. From the table, the risk of slipping on a wet surface has been identified in which the reputation of the organization carries the highest consequence (negligible). The likelihood of this risk occurring is considered possible. Once the risk has been assessed, the organization can then determine the risk rating. The highest rating classification will support the identification of the required response.

Once a potential project has been identified, the organization will need to defend why this project is required to move forward. The risk rating matrix can be considered a semi-quantitative analysis that is designed to support the defense of the decision of whether or not to proceed with executing a project. For instance, a liquids pipeline company completed an inline tool inspection for one of its lines. From the inspection report, it was identified that a certain section of the line was damaged and required to be repaired or replaced. The organization would need to assess the risks to determine how it would introduce corrective action plans (repair or replace), or whether the project will be deferred to a later date. Based on the risk assessment, options may also be identified as part of the mitigation strategy. For example, one option for the organization to consider is to reduce the maximum operating pressure, which inherently would reduce the capacity and subsequent throughput. The organization would then need to realize that if it chooses to reduce the capacity, this would reduce revenues. Based on the reduced throughput of the pipeline in question versus the capacity of all the systems, the organization would need to determine if this project is required to be entered into the portfolio. This is because of the fact that the capacity

Table 8 – Example Risk Rating Matrix [4, p.53]
reduction may create an extensive financial risk to the organization. Another consideration that the organization would need to further evaluate is the impact to its reputation (if a leak occurs).

To provide context around this example, Table 9 has been provided. From this table, the likelihood that a leak will occur is “almost certain” if the organization decides to do nothing, and the consequence to the organization’s reputation is significant. The organization will also need to consider the “extensive” consequence of the risks identified to its people and capability to operate. These secondary risks can contribute to the final decision to mitigate the risk, choose another option, or do nothing.

Because of the extreme risk of a leak occurring, the organization will be required to introduce a mitigation strategy, such as repairing or replacing the section of pipeline. However, as discussed earlier, the organization may choose to reduce the chance of a leak occurring by reducing the maximum operating pressure of the pipeline. If the organization chooses to reduce the maximum operating pressure, the likelihood of a leak occurring is now considered “unlikely,” and the consequence to the organization’s reputation has been downgraded to “negligible.” While not desirable, this decision provides the organization with the opportunity to mitigate the risk and move the associated funds to another priority project.

Based on the decision to reduce maximum operating pressure, the organization could introduce other risks into the portfolio that could affect the overall business. Table 10 illustrates that the organization has now introduced a potential risk to the economic aspect of the organization. There is now a likelihood of “likely” that an economic impact would occur, and that impact could be considered “extensive” to the organization’s revenue stream. In other words, this economic impact could further affect the execution of other projects as the capital funds may not be available. This could further affect the
overall business strategy, as well as future throughput, and a reduction in perceived revenues.

Regardless of the decision, the organization can determine the required response for implementing a solution. Based on the response matrix assessment shown in Table 11, the decision to reduce the maximum operating pressure will require a response from the management team, as it is considered a “high” risk to the organization.

While it may be more desirable to reduce the maximum operating pressure in order to mitigate the risk of a leak occurring, this should only be considered as a temporary solution. Depending on the nature of the risk mitigation plan for this specific event, executive management may be required to approve the decision of reducing the maximum operating pressure. Regardless of what the required response matrix indicates, the executive management group may decide that it is in the best interest of the organization to repair the feature to maximize throughput and revenues, which will in turn support the overall business strategy.

The use of a risk rating matrix is promoted as a practical tool which can provide an organization with consistency in evaluating complex risk data in a concise fashion, support effective facilitation and standardization for conducting risk workshops, provide consistency in prioritizing risks, and

<table>
<thead>
<tr>
<th>Color Map</th>
<th>Classification</th>
<th>Required Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Very High</td>
<td>Immediate action required by Executive</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>High Risk, senior management attention needed</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>Management responsibility must be specified</td>
</tr>
<tr>
<td></td>
<td>Low</td>
<td>Monitor and managed by routine procedures</td>
</tr>
<tr>
<td></td>
<td>Very Low</td>
<td>Managed by routine procedures</td>
</tr>
</tbody>
</table>

Table 11 – Response Matrix Assessment Example

<table>
<thead>
<tr>
<th></th>
<th>Consequence</th>
<th>Likelihood</th>
<th>Risk</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project 1</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Project 2</td>
<td>3</td>
<td>2</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Project 3</td>
<td>4</td>
<td>2</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>Project 4</td>
<td>5</td>
<td>2</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Project 5</td>
<td>4</td>
<td>4</td>
<td>16</td>
<td>2</td>
</tr>
<tr>
<td>Project 6</td>
<td>3</td>
<td>5</td>
<td>15</td>
<td>1</td>
</tr>
</tbody>
</table>

Figure 19 – Risk Bubble Chart-Example

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finally, to identify the necessary focus on the highest priority risks.

To support the assessment of risks, a simple risk bubble chart or graph can be used to effectively and quickly convey risk information to an audience. Using the formula $\text{Likelihood} \times \text{Consequence} = \text{Risk}$, a value can be determined for the project. The value is considered the impact that the project has, which provides the risk rank. This risk rank value identifies the priority or order in which the project is to be executed.

Once the projects have been ranked, they can be plotted on the risk bubble chart. The number of high priority versus low priority risks are identified on the chart. In Figure 19, the larger the bubble is, the greater the risk priority becomes for that project. Therefore, the orange and the blue bubbles represent the projects with the highest priority risks that require attention, closely followed by the yellow bubble. The projects with the highest consequence and highest likelihood will gather in the upper right corner of the chart.

Based on the risk ranking and the use of the bubble chart, the portfolio owner can prioritize the execution of the suite of projects.

Table 12 has been provided as an example to further expand on the prioritization of a suite of projects. From the table, the company identified 26 projects out of 50 that were required to be executed within the next fiscal year. The total fiscal cost for executing the highest risk projects equates to $193,269,027. Other projects were identified to be completed as well, however these projects did not qualify to be executed as they did not meet the risk threshold as identified by the risk rating matrix. The projects that did not qualify are not represented on the table.

From the table provided above, the total fiscal cost for executing these projects are $193,269,027, however, the organization had put in place a fiscal constraint of $180,000,000. Therefore, the portfolio owner had to remove just under $14MM of project work from the portfolio. The projects that were approved to proceed are identified in red font. However, regardless of the fiscal constraint, the organization would need

<table>
<thead>
<tr>
<th>Project ID</th>
<th>Project Name</th>
<th>Likelihood</th>
<th>Consequence</th>
<th>Impact</th>
<th>Priority</th>
<th>TIC Budget</th>
<th>Current Fiscal Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>1009</td>
<td>Project Florida</td>
<td>10</td>
<td>9</td>
<td>90</td>
<td>1</td>
<td>19,552,860</td>
<td>6,843,501</td>
</tr>
<tr>
<td>1020</td>
<td>Project Maryland</td>
<td>10</td>
<td>9</td>
<td>90</td>
<td>2</td>
<td>5,928,814</td>
<td>5,928,814</td>
</tr>
<tr>
<td>1042</td>
<td>Project Tennessee</td>
<td>9</td>
<td>9</td>
<td>81</td>
<td>3</td>
<td>6,495,978</td>
<td>6,495,978</td>
</tr>
<tr>
<td>1001</td>
<td>Project Alabama</td>
<td>9</td>
<td>8</td>
<td>72</td>
<td>4</td>
<td>4,833,722</td>
<td>4,833,722</td>
</tr>
<tr>
<td>1019</td>
<td>Project Maine</td>
<td>9</td>
<td>8</td>
<td>72</td>
<td>5</td>
<td>1,328,302</td>
<td>1,328,302</td>
</tr>
<tr>
<td>1033</td>
<td>Project North Carolina</td>
<td>9</td>
<td>8</td>
<td>72</td>
<td>6</td>
<td>9,848,060</td>
<td>9,848,060</td>
</tr>
<tr>
<td>1013</td>
<td>Project Illinois</td>
<td>8</td>
<td>8</td>
<td>64</td>
<td>7</td>
<td>12,882,135</td>
<td>12,882,135</td>
</tr>
<tr>
<td>1041</td>
<td>Project South Dakota</td>
<td>8</td>
<td>8</td>
<td>64</td>
<td>8</td>
<td>844,877</td>
<td>844,877</td>
</tr>
<tr>
<td>1002</td>
<td>Project Alaska</td>
<td>7</td>
<td>9</td>
<td>63</td>
<td>9</td>
<td>735,132</td>
<td>735,132</td>
</tr>
<tr>
<td>1005</td>
<td>Project California</td>
<td>10</td>
<td>6</td>
<td>60</td>
<td>10</td>
<td>38,332,521</td>
<td>38,332,521</td>
</tr>
<tr>
<td>1011</td>
<td>Project Hawaii</td>
<td>6</td>
<td>10</td>
<td>60</td>
<td>11</td>
<td>1,404,054</td>
<td>1,404,054</td>
</tr>
<tr>
<td>1043</td>
<td>Project Texas</td>
<td>7</td>
<td>8</td>
<td>56</td>
<td>12</td>
<td>26,448,193</td>
<td>26,448,193</td>
</tr>
<tr>
<td>1012</td>
<td>Project Idaho</td>
<td>9</td>
<td>6</td>
<td>54</td>
<td>13</td>
<td>1,612,136</td>
<td>1,612,136</td>
</tr>
<tr>
<td>1018</td>
<td>Project Louisiana</td>
<td>6</td>
<td>9</td>
<td>54</td>
<td>14</td>
<td>4,625,470</td>
<td>4,625,470</td>
</tr>
<tr>
<td>1003</td>
<td>Project Arizona</td>
<td>6</td>
<td>8</td>
<td>48</td>
<td>15</td>
<td>6,626,624</td>
<td>6,626,624</td>
</tr>
<tr>
<td>1035</td>
<td>Project Ohio</td>
<td>5</td>
<td>9</td>
<td>45</td>
<td>16</td>
<td>11,570,808</td>
<td>11,570,808</td>
</tr>
<tr>
<td>1028</td>
<td>Project Nevada</td>
<td>6</td>
<td>7</td>
<td>42</td>
<td>17</td>
<td>2,790,136</td>
<td>2,790,136</td>
</tr>
<tr>
<td>1032</td>
<td>Project New York</td>
<td>6</td>
<td>7</td>
<td>42</td>
<td>18</td>
<td>19,651,127</td>
<td>19,651,127</td>
</tr>
<tr>
<td>1017</td>
<td>Project Kentucky</td>
<td>5</td>
<td>8</td>
<td>40</td>
<td>19</td>
<td>4,395,295</td>
<td>4,395,295</td>
</tr>
<tr>
<td>1021</td>
<td>Project Massachusetts</td>
<td>5</td>
<td>8</td>
<td>40</td>
<td>20</td>
<td>6,692,824</td>
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</tr>
<tr>
<td>1029</td>
<td>Project New Hampshire</td>
<td>5</td>
<td>8</td>
<td>40</td>
<td>21</td>
<td>1,323,459</td>
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<tr>
<td>1037</td>
<td>Project Oregon</td>
<td>5</td>
<td>8</td>
<td>40</td>
<td>22</td>
<td>3,930,065</td>
<td>3,930,065</td>
</tr>
<tr>
<td>1048</td>
<td>Project West Virginia</td>
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<td>8</td>
<td>40</td>
<td>23</td>
<td>1,854,304</td>
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</tr>
<tr>
<td>1014</td>
<td>Project Indiana</td>
<td>5</td>
<td>7</td>
<td>35</td>
<td>24</td>
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<td>6,570,902</td>
</tr>
<tr>
<td>1040</td>
<td>Project South Carolina</td>
<td>5</td>
<td>7</td>
<td>35</td>
<td>25</td>
<td>4,774,839</td>
<td>4,774,839</td>
</tr>
<tr>
<td>1008</td>
<td>Project Delaware</td>
<td>5</td>
<td>9</td>
<td>45</td>
<td>26</td>
<td>925,749</td>
<td>925,749</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td>205,978,386</td>
<td>193,269,027</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
to justify why some of the high risk projects were not permitted to proceed. The design of an enterprise risk rating matrix and the assessment of the company’s thresholds should be developed to protect the interests of the organization. If the enterprise risk rating matrix is designed properly, the organization would not eliminate high risk projects from the portfolio, but attain the appropriate funds in order to execute these projects.

A great deal of time has been spent on explaining enterprise risk. This was necessary as enterprise risk assists the organization in determining which projects are introduced into the overall portfolio. However, one cannot overlook the need for portfolio risk assessments as well. Portfolio risk management supports the balancing of risks necessary to support the delivery of the total portfolio. As discussed earlier, portfolio risk can be represented in ways such as strategic fit, staff use and turnover, and fiscal budget constraints to name a few. Portfolio risk management should provide the organization with the opportunity to balance the portfolio, and mitigate a common theme of risks that are evident across most of the projects. For example, this may include the assessment of skilled labor and its availability. During a robust economic environment, organizations may find it difficult to manage their portfolios because of a lack of skilled labor. Another issue is that under these circumstances, the salary paid to the labor force is inflated. The lack of skilled labor and increase to salaries could impact the project by up to 30 percent or greater.

Because of an increase in demand during heated markets, other risks may include the shortage of materials, and/or high levels of volume in fabrication centers and shops. Securing shop space on the production floor would be increasingly difficult. Each of these risks could cause major delays to the organizations suite of projects. On the flip side, when markets soften, some vendors cannot meet the simple demand of supplying the necessary materials or products as their ability to sustain healthy production levels is hampered by the fact that the demand is reduced. Because there is a decrease in demand, project teams could see an increase in unit rate costs as overhead and fixed costs will have to be absorbed by decreased units in production.

In order to properly manage the execution of a portfolio of projects, the organization needs to define how it will identify, mitigate, and manage risk, at the enterprise, portfolio and project levels.

Investment Decision Making Protocols

While a lot of emphasis was placed on enterprise risk management when determining the selection and the prioritization of the portfolio of projects, the organization will also need to establish the application of specific financial rules. For all intents and purposes, growth projects usually increase throughput, and subsequently provide an increase in revenues to the organization. In order to ensure the viability of the project and proper use of the organization’s funds, all projects that generate revenue should be required to proceed through a robust economic evaluation. Sustainability projects do not increase throughput, nor generate revenues as they maintain current throughput and revenues only. Therefore, sustainability projects may not require the robust financial evaluation that growth projects experience.

The financial rules that an organization may introduce into the decision making and portfolio selection process may include a cost/benefit analysis, breakeven point analysis, discounted cash flows, Return on Investment (ROI), and Internal Rate of Return (IRR). These financial rules will provide the thresholds that are required to be attained by the project in order to be considered feasible. For example, an organization may introduce a hurdle rate for assessing the project. The hurdle rate is the minimum rate that an organization expects to achieve or earn when investing money in a project. The hurdle rate can be considered the organization’s required rate of return. Therefore, in order for the project to be accepted into the organization’s portfolio, its IRR must equal or exceed the hurdle rate. As an example, some organizations will introduce a hurdle rate of 14.0 percent. If a project has an IRR of 14.1 percent, the project may be approved “financially” to proceed if capital is available.

While introducing financial rules as part of the project selection assessment, the organization will also be required to understand the complete life cycle costs of the project. The project life cycle starts from the design phase and continues through the construction phase onto operations, and subsequently retirement of the asset. In order to assess the financial feasibility of a project based on the life cycle costs, the organization will need to ensure that the appropriate scope options, engineering design, and procurement strategies are applied. In some cases, organizations may inadvertently introduce an engineered solution, or purchase a product, material, or piece of equipment at a lower cost in order to achieve the desired return on investment or hurdle rate. While this may decrease projects costs, these decisions may introduce higher operational costs into the organization. As an example, an organization may choose to install less expensive pumps; however, the cost to maintain these pumps as well as their reliability, plus loss of revenue as the pumps may always be down, increases the operating costs to the organization. Also, poor design on the pump may create an increase in operability costs as well. A pump with a poor impeller design may cause an increase in the demand for electricity, thereby increasing operational costs. These are just two examples of how projects can impact the operating costs of the organization. Therefore, organizations need to exercise extreme caution when applying Value Improving Practices (VIPs) or cost reduction strategies to a project in order to reduce project budgets. Many organizations view VIP’s as mechanisms to lower capital cost. However, true VIP practitioners would argue that cost reduction is not the only way to improve value. In general, organizations that minimize operational costs and expenditures maximize profits. Profits can be used to increase market share and support strategic growth plans.
Contingency Management and Management Reserve Protocols

While there is strong expectation that the strategic portfolio management plan will be executed according to plan, it must be recognized that not all project, portfolio, and enterprise risks can or will be mitigated or realized. Based on this statement, the organization may find it necessary to provide further guidance on the use of project contingency funds, as well as introduce the use of a portfolio management reserve.

In regards to project contingency assessments, a contingency fund will be determined based on the project risk assessment. It is expected that all contingency dollars will be spent by the project team, and therefore will not be available for use outside the project. However, in some circumstances, not all contingency funds will be used. These funds should be released back to the fund manager for use in other areas of the portfolio. It is highly recommended that the project teams manage their respective project contingencies and not the funding manager. While the portfolio owner and funding manager are providing the overall ownership and stewardship of the overall portfolio, they should not interrupt the project team’s ability to execute their portion of the work.

For this matter, the organization should introduce management reserve funds as a way of managing portfolio risks. The use of a management reserve is based on the overall uncertainty of the portfolio. While contingency budgets are determined by known - unknown circumstances (the team has identified the risk, i.e., known, but it has yet to be determined if the risk event will happen, i.e. unknown). Management reserve provides a budget for unknown – unknowns. For some organizations, they may introduce a five percent “buffer” of the fiscal spend allotment of the portfolio, and for others, it may be a 10 percent “buffer.” This buffer should not be considered as part of the capital budget. As per the example provided earlier, the organization has acknowledged that it will spend $0.921 billion for 2015. Based on fiscal requirements, the organization may secure an additional $46.1 million for management reserve. The $46.1 million of management reserve is not considered part of the approved fiscal funds, and is held in a separate account to be managed by the funding manager. Through consultation with the portfolio owner, the funding manager will release portions of reserve to the project teams for discretionary use when required. The use of management reserve provides a buffer to the project fiscal budgets and minimizes any financial constraints that the project teams may experience.

In some circumstances, proposed projects may require preliminary funding in order to establish a level of project definition that allows for the proper assessment of project risk and financial viability. Management reserve may be used to fill the needs for developing these projects further.

BUDGET DEVELOPMENT

Defining the Budgeting Process

Defining a fiscal budget provides the organization with an understanding of the cash flow requirements to support the execution of the suite of projects. It also provides the organization with the ability to measure and assess cost performance in order to mitigate foreseeable situations. Figure 20 illustrates how the fiscal budgeting process is applied in a nested manner in the overall portfolio budgeting process. The two levels of the budgeting process are referred to respectively as the strategic portfolio management plan budget (see Figure 7) and the fiscal budget.

In reference to Figure 20, the light blue color represents the total portfolio spend for all the projects identified to support the overall strategic plan. This plan is represented in greater detail in Figure 7. The dark blue color portion of the graph represents the fiscal spend for all the projects for the year 2015. Subsequently, all the fiscal spends will represent the overall portfolio budget.

In order to ensure that the strategic portfolio management plan will be completed in a timely basis, the organization will be required to define the timelines for each of the portfolio deliverables. The portfolio deliverables will include the summation of the
proposed portfolio list (new projects),
the list of projects that started in the
previous fiscal years, but continue to be
executed within the following year
(carryover projects), risk assessments,
and financial assessments, etc.

Figure 21 provides an example
of the timing of a corporate review and
approval process within an organization.
The example provides an understanding
of the timing of the deliverables, as well
as the iteration process for reconciling
portfolio costs against the approved
fiscal budget.

Once the timelines have been
determined, the organization will need
to define how the strategic portfolio
management plan will be packaged and
how it will be submitted to the executive
management group. Guidelines on
budget timing, processing, reviewing
and approvals should also be developed
to support the overall process.

As identified throughout this
section, there are many items to
consider when developing a strategic
portfolio management model. In order
for an organization to be effective in its
delivery of its portfolio plan, they must
first define the necessary requirements
to design and implement a strategic
portfolio management model. This
includes defining the appropriate
structures, oversight and ownership for

the development of a strategic portfolio
management model, as well as outline
the framework for developing and
managing the strategic portfolio policies,
procedures and processes. Finally, the
organization will need to identify the
desired expectations, roles and
responsibilities in order to support this
endeavor. Success of delivering a
portfolio plan is heavily dependent on
the organization, its culture and
leadership, and governance to the
organization’s policies, procedures and
processes.

Strategic Portfolio Management Plan

Earlier sections of this article
discussed the requirements for
developing a strategic management
model, the required business objectives,
corporate management and governance
structures. The following section
provides the reader with a prescriptive
tactical approach for developing the
strategic portfolio management plan.

Portfolio Preparation

As identified in AACE International
Recommended Practice 60R-10,
Developing the Project Controls Plan, the
strategic portfolio management tool and
process should be “an integrated and
quality driven process model” [5, p.54].
Therefore, the application of the
strategic portfolio management tool and
process should provide an overall
understanding of the strategic plan
which supports the “stewardship of the
six elements of project controls,” which are:

- Know what has to be done
- Know what has been done
- Know how actual performance
  compares with performance norms
- Know what remains to be done
- Identify and implement corrective
  actions to bring performance in line
  with expectations
- Check results of corrective action [5,
p.54]

Similar to the single project
approach, the strategic portfolio
management plan should provide a
complete understanding of the six
elements of the project controls function
in order to ensure the proper execution
and delivery of the suite of projects
within the portfolio. This will allow
organizations the ability to optimize their
capital investment and resources, as well
as effectively and efficiently manage any
perceived risks. Further to this, the
strategic portfolio management tool and
process will allow the organization to
execute the right projects at the right
time with the right people.
In support of using the six elements of project controls, the authors provide further understanding in applying the PDCA model for the development of the strategic portfolio management plan. As defined in AACE International TCM Framework, the PDCA model is an iterative four-step problem solving process. The cyclical approach allows the audience critical feedback to their methods of delivery, which in turn supports the continuous improvement strategy for full optimization.

The PDCA (Plan, Do, Check, Act) model is an iterative four-step problem-solving process used in business process improvement.

The PDCA model, as shown in Figure 22, is color-coded to visually identify the different aspects of the Plan, Do, Check, and Act (PDCA) model. The use of the PDCA model supports the continuous improvement, and therefore, maturity of the strategic management portfolio plan. Also, the steps of strategic portfolio management plan (planning, implementation, performance, and assessment) are further expanded in greater detail.

The PDCA model can be a useful tool when applied to the strategic portfolio management plan. As identified in Figure 23, the PDCA steps, when assigned to specific strategic portfolio management processes, provide a clear understanding of the requirements for the overall development, management and control of the strategic portfolio management plan.

Similarly, the projects within the portfolio should also apply the PDCA steps in order to ensure an effective and efficient application for control. For example, each project must apply project planning (Plan), project control plan implementation (Do), project performance measurement (Check), and project performance assessment (Act) processes. By applying the PDCA model to the projects, which is nested into the overall strategic portfolio management plan, the organization can ensure proper stewardship and control of the overall portfolio plan.

**Process Map for Strategic Portfolio Management of Plan, Do, Check, Act (PDCA)**

The strategic portfolio management process translates the portfolio development and implementation basis (planning, implementation, performance, and assessment) into a controllable portfolio strategy. The process map shown in Figure 24 highlights the relationships between the process steps, as well as an understanding of inputs and outputs. The strategic portfolio management plan process is also color-coded to visually identify the different aspects of the Plan, Do, Check, and Act (PDCA) model.

The following section further describes the process steps in greater detail. This will provide the reader with a clearer understanding of the sub elements required to fully exercise the steps within the strategic portfolio management process.

**Plan (Strategic Portfolio Planning)**

**Assess Long Term and Short Term Strategic Plans**

Once the strategic plan has been defined (short and long term plans), the capital and operating funding strategies must be reviewed to identify any changes from previous plans. Fiscal requirements such as determining the annual funding cap will also have to be assessed in order to identify and manage cash flow. The short term funding process (review and reconciliation) must also tie back to the long range plan in order to efficiently manage the organization’s capital for years to come.

**Assess Operations for Optimization and Debottlenecking**

During the fiscal period, operations personnel will be identifying areas of improvement for their respective facilities and assets. This may also include engineering studies and plant simulations to determine asset optimization and debottlenecking.
opportunities. Also, operations may assess the aging infrastructure (of assets) already in place, and based on the life expectancy or refurbishment plan, determine whether an asset or facilities needs to be replaced or repaired. Finally, operations may complete integrity testing on its existing assets or facilities and determine if replacement or repair is required.

For example, a pipeline company may complete an inline inspection tool run while the pipeline is in operation in order to identify if any features or defects are present. Once features or defects have been identified, the pipeline company can then start planning corrective actions in order to ensure that risks are minimized and throughput is maximized. Creating project or program concepts by determining operational needs or areas for expansion is the first step in defining new projects. As these reviews, investigations, and assessments occur, the organization will need to collect any potential projects on a master list for further evaluation.

**Determine New Assets to Support Growth Strategy**
In order to attain the desired goals set out by the short and long range plans, the organization will need to introduce any expansion or growth projects into the portfolio. Determining the need for expansion and planning how to achieve the increased capacity may not always be determined by the organization, but through external requests.

As an example, a pipeline company may be dependent on a third party or large oil company to determine if an expansion or growth project is required. This may require the pipeline company to build new assets that will increase capacity throughput via a brand new pipeline, or expand current operations at an existing terminal or pump station. An expansion of a client’s existing facility may provide the opportunity for an expansion to the pipelines existing facilities in order to provide the customer product to a particular destination.

**Define Projects and Supporting Requirements**
In order to expedite the selection process, all organizations should apply a pre-screening assessment in order to eliminate proposed projects before they begin. As discussed earlier, the project selection criteria and the stage gating process can provide the necessary parameters for supporting the pre-screening requirements. If a proposed project falls under scrutiny, and a decision cannot be made to include the proposed project into the selection process, a project proposal should then be completed for review and approval.

**Determine Project Selection**
Complete Risk Assessment
As mentioned earlier, all sustainability projects (and some growth projects) will be required to be assessed against the corporate risk rating matrix. This assessment will determine the strategic fit for each project, and therefore, the utilization of the organization’s capital and resources. In some circumstances, projects may be
assigned the same risk ranking, causing deliberation amongst the stakeholder groups. The portfolio owner will need to assess the project risk rankings in order to determine the priorities of which projects are to be completed, and communicate the results back to the shareholders.

Complete Investment Decisions
As discussed in previous sections, the organization will need to identify the appropriate financial rules that will be applied to each proposed project within the portfolio. The financial rules provide the organization with a defined approach for assessing future investments. Once the projects have been assessed using the risk rating matrix, the organization can now further assess the proposed portfolio of projects against the defined financial rules. The financial rules will provide the necessary thresholds to be attained by each project in order to be considered feasible. Based on the thresholds, each project will receive a financial ranking.

Similar to the risk assessment, the financial assessment will also determine the strategic fit for each project, and therefore, the use of the organization’s capital and resources. Some projects may be assigned the same financial ranking, therefore the portfolio owner will need to assess the project financial rankings in order to determine the priorities of which projects are to be completed, and communicate the results to the shareholders.

Assess Project Probability
Because of the timing of submitting project proposals into the strategic portfolio management plan, the project team may be required to make a decision on whether a project should or should not be introduced into the portfolio. For instance, sustainability projects are assessed and prioritized based on risk, and therefore may not require the assessment of probability.

While preliminary financial assessments may have been completed on a project, and the project is considered feasible from a financial standpoint, the decision to go ahead with the project may be dependent on a client or third party approval. In some circumstances, the project team may be required to determine the probability of a project moving forward in order for the strategic portfolio management plan to be completed. This is required as the project team may not receive the appropriate approvals in time for finalizing the strategic portfolio management plan.

For some organizations, a project that has a 75 percent probability or greater of being executed will be listed in the portfolio plan and subsequent spend profiles. The probability of the project will change once the project definition and engineering quality matures. Also, the client will have completed its own assessment which will in turn assist in the decision for the project to proceed. If for some reason that the project does not proceed, it is expected that the portfolio owner will issue a portfolio change order and update the portfolio plan accordingly.

Evaluate the Portfolio Scope
After the risk assessments and the investment decisions have been completed, the organization can move toward refining the portfolio scope by prioritizing the suite of projects within the portfolio. Once the projects have been selected as part of the portfolio, the organization can then determine the preliminary schedules and cash flow profiles based on the preliminary budgets provided. This information will be necessary in order to begin all planning efforts for the development and execution of the entire portfolio.

Optimize Planning Efforts and Define Portfolio Scope
Evaluate Portfolio Financial Constraints
Once the project listing and scope for new and carryover projects has been determined, and the schedules and cash flow profiles for each project have been established, the organization can then assess the total portfolio cash flow profile. This will assist in identifying the incremental and cumulative value of all the project cash flow profiles within the portfolio for the fiscal period. This assessment will assist the organization in determining if any fiscal and Authority For Expenditure (AFE) based on total installed cost) constraints exist in the portfolio.

Evaluate Portfolio Resource Constraints
Similar to optimizing the portfolio cash flow, optimizing resources is equally important. The organization can now assess the resource loading and use of the project teams, engineering firms, fabricators and constructors. These resources can be assessed and potentially leveled, minimizing any large fluctuations in resource demand, in order to optimize efficiency and improve the productivity for delivery of the project and portfolio deliverables. This also allows the organization to minimize any costs of re-hiring and re-training personnel. Finally, understanding the resource loading and use of the constructors could potentially decrease potential safety hazards, as the organization could minimize work during inclement weather periods, such as winter and rainy seasons. This approach will also allow the organization to manage the workforces in congested areas, etc.

Evaluate Operational Constraints
Depending on the type of project, owner companies will be required to identify any outages or system shutdowns in order to bring the new or revamped asset on line. In regards to processing facilities, outages are required to tie in a new piece of equipment, pipe or electrical system. For a pipeline company, they may require an outage in order to perform a hydrostatic test on part of a line. Based on the portfolio, the organization can align its outages and shutdowns and minimize disruption to production. Also, by minimizing outages and shutdowns, owner organizations can use its maintenance staff more effectively, particular the staff that supports project work. Finally, by limiting the number of outages, disruption to operations is reduced, and product can continue to flow in order to maximize revenues.

Evaluate Carry Over Projects
As part of the optimization of the planning efforts, the organization will need to review and evaluate projects that will be carried over from one fiscal period to another. This will support the understanding of the funding requirements for the upcoming year. It is unlikely that existing projects that are
already being executed will be cancelled or delayed. Therefore, the portfolio owner will be required to analyze and assess how existing projects and new projects will be executed in parallel.

Balance the Portfolio

Once the organization has evaluated the constraints, it can then determine the overall approach of executing the portfolio. When performing portfolio planning efforts, single projects may need to be re-scheduled concurrently or even sequentially to manage the constraints. Balancing the portfolio schedule is the process of resolving any conflicts by stabilizing the workload over the course of the portfolio. This will include the leveling of resources to create stability. Methods of leveling include the bundling of projects within a region, as well as delaying the start of one or more projects.

Based on this balanced approach, the organization will now have a refined preliminary schedule, as well as resource and cash profiles to support the development of baseline data in order to manage the overall portfolio. This should provide the organization with an understanding of the availability of all resources, including contractors on site.

Coordinated efforts must be made to minimize any backlogs or work demand to the suite of projects within the portfolio, regardless if these projects are to be executed in parallel or are dependent on one another (sequential). This will allow the organization to manage the risks to the organization by completing the right projects at the right time, while providing effective portfolio management.

Do (Strategic Portfolio Implementation)

Define Portfolio Baselines and Set Up for Reporting

Define Portfolio Baselines

Once the portfolio plan has been set, the portfolio owner will need to establish cost and schedule baselines for the execution of the portfolio. If the project teams plan these baselines on a project level, the details will roll up into the portfolio and can be used for further reporting and analysis. Fiscal and total installed cost baselines can be used for high level reporting for management purposes. Portfolio cost and schedule baselines can then be established for growth and sustainability project baselines, as well as for business units and geographical/regional projects.

Set Up for Reporting

Prior to setting up the reporting for the portfolio, the organization will need to define what reporting requirements are needed in order to manage and control the portfolio. This will also include any financial reporting needs that may be required. To support the setup of the portfolio reporting, the organization should have already defined the corporate and portfolio coding structures, as well as the attributes required to categorize and collate the project and portfolio data for portfolio reviews and stewardship.

Define Key Performance Indicators (KPIs)

To support the overall execution of the portfolio, the organization may want to introduce portfolio KPI’s to support baseline measurement and analysis. In order to establish the KPI metrics for portfolio cost and schedule management and control, the organization will need to define tolerance levels for each project within the portfolio. These tolerance levels will set the thresholds in which the portfolio will be measured.

As discussed earlier, a project may not have the required maturity or quality of engineering definition that is required in order to complete a class III estimate. While this project is included as part of the overall portfolio, the portfolio manager or executive may choose not to include this project as part of the assessment of the key performance indicators. It would be unfair to the project teams to assess a project against the KPI thresholds, if the project does not meet the required maturity level. However, to minimize the use of information that does not have the defined maturity, the project teams should expedite the scope definition and engineering process as soon as possible.

Define the Plan for Portfolio Project Control

Plan for Portfolio Project Control

The portfolio project controls plan (PPCP) is considered the scope of work (SOW) for the portfolio team, which will support the portfolio team and its stakeholders in managing the overall execution of the plan. The PPCP is considered an ever-green document that should be updated as change occurs. The PPCP should be developed for each fiscal (yearly) period in order to support the fiscal budgeting process.

Defining the plan for your portfolio consists of defining the level of project management and control deemed necessary for portfolio and project success. The portfolio project controls plan should identify the functional applications for project controls. This should include documenting the decisions that were made during the portfolio planning phase, which includes the decisions on determining how the projects were selected, as well as the development of the execution strategy. Integration of client and other stakeholder plans is necessary as well. The development of these plans should involve the owner, engineers, contractors, project management and control specialists in order to have a collaborative portfolio team.

Also, the PPCP should identify any portfolio engineering, procurement and construction decisions that would be applied to the plan. This would include any strategies to purchase equipment and materials in bulk, or the bundling projects to support on-site execution.

The PPCP should also identify a systems and data integrity plan. The PPCP will provide any updates to system requirements needed for portfolio management. This should include the identification how the IT software systems will exchange information through the financial system, the scheduling system, the project cost system and any dashboards or portfolio systems. The systems and data integrity plan will also identify how data integrity and information is stored in order to secure portfolio information.

To support the systems and data integrity plan, a standardized project coding structure will need to be established based on organizational requirements. Each project should have a defined work breakdown structure that supports the management and control of the cost, schedule and progress elements.
The PPCP should also identify how portfolio information is distributed. It is recognized that through the design of the strategic portfolio management model, a corporate communication plan has been established. However, in terms of the overall portfolio management process, the portfolio owner will need to ensure that a communication plan is developed specifically to support the management and control downward into the suite of projects. This will include the identification of any portfolio meeting requirements that may be needed. To support the meeting requirements, the portfolio reporting and distribution frequencies will need to be defined as well. Finally, the communication plan should define how information should be stored, such as the file structure for storing portfolio reports, etc.

Defining the organizations communication plan and reporting requirements is essential when planning the portfolio. Timely reporting on project metrics, including project status is important to influence project outcomes, and subsequently portfolio outcomes. The level of detail for reporting must support appropriate decision making for mitigation and improvement strategies.

Throughout the lifecycle of a portfolio, planned auditing or sampling should be completed to ensure the health of the projects and portfolio. Depending on the organization, monthly or quarterly health checks may be performed on a select number of projects, depending on the size and risk of the projects in the portfolio. Some health checks may also be built into the organizations regular reporting deliverables, including data validation checks, or heat maps on cost and scheduling data.

**Check (Strategic Portfolio Performance Measurement)**

**Control during Execution**

**Portfolio Cost Accounting**

Controlling the projects and portfolio in order to ensure adequate performance measurement and validation of all commitments, incurred and expended costs. The organization must ensure compliance to all coding structures, including the organization’s code of accounts and any project specific work breakdown structures. This should also include proper allocation of costs at the field level, including any client and contractor accounts. Proper cost collection is also important to support the assessment of any contractual obligations required by the finance and procurement departments. All project costs, regardless of the value, will need to be identified on the project cost tracking report per the defined frequency. These costs will be transferred to the overall portfolio report for variance analysis and subsequent investigations as required.

The organization will likely have defined cash flow requirements, as well as fiscal reporting requests in order to manage their respective cash calls. In regards to financial reporting, organizations may be required to report project accruals, or other costs in order to meet any government, shareholder or corporate financial reporting requirements.

**Manage Schedule and Measurement of Activity Completions**

The organization will be required to measure the activities within the project and portfolio schedules. The measurement of activities, including the start and completion dates, remaining durations, work sequencing, etc. are important to understand as this provides the required information necessary to perform schedule variance analysis and subsequently cost forecasting.

**Measurement of Physical Progress**

To support the measurement of schedule activities, as well as the assessment and analysis of the overall portfolio, the project teams should ensure that their respective projects measure the physical progress of work completed. In order to analyze an accurate physical completion, the project teams will need to capture, check and validate hours and key quantities at a project level.

The collection of physical quantities installed will support the overall assessment of the project. All project assessments within the portfolio will be represented on the overall portfolio plan to support portfolio variance analysis.

**Act (Strategic Portfolio Performance Assessment)**

**Performance Assessment**

**Assess Performance Risks**

Assessment of cost, schedule, resource and productivity values will be required regularly in order to ensure that the organization fully identifies any risks and impacts to the performance of the projects and portfolio. Identifying these risk factors will assist the organization in understanding the overall performance of the portfolio, which will subsequently assist in identifying future cost and schedule variances.

**Assess Estimate to Complete (ETC) and Forecasting**

As each project progresses, the organization will be required to assess the remaining work for both the fiscal year and the overall project time period, as well as prepare and update project forecasts as necessary. This rollup of forecasts will determine the ETC for the portfolio, which paired with incurred costs to date, will determine the estimate at completion. A similar approach can be used to assess the schedule outcomes of the project/portfolio.

Analyzing risk and contingencies regularly is also an important contributing factor in determining remaining costs and schedule on a project. As appropriate, communicating the cost and schedule variances to management and the project/program sponsor is necessary, as alternative plans may need to be identified. These alternate plans may be due to imposed funding restrictions or unexpected scope delays, for example.

**Portfolio Change Management, Recovery Plans and Reconciliation**

**Manage Changes to Performance Baseline Measurements**

Positive and negative deviations from the baseline plans should be identified and analyzed. Managing the changes to the cost and schedule variances should first be assessed at a project level, then at a portfolio level.
Recovery plans to support cost and schedule improvement strategies will need to be established in order to maximize the use of fiscal and AFE dollars. The organization will need to identify any variances that may affect the project fiscal and AFE budgets. At a high level, the funding manager will be required to support the assessment of any portfolio risks in order to assist in resolving any funding issues and implement/approve the change request for the project team.

Control and Decision Making, and Reconciliation
In some circumstances, the organization may be required to introduce changes to the overall execution of the portfolio. This may include additional funding constraints that were not realized at the time the baselines were set, or the addition of a new project(s). Regardless of what the changes are, the portfolio owner and team will be required to introduce these changes. Based on the changes, the portfolio owner will need to reconcile any positive or negative cost and schedule variances in order to identify any further impacts to the delivery of the portfolio. Also, the portfolio risk register should be reviewed in order to mitigate any potential threats that may affect the overall delivery of the portfolio.

Once the risks and changes have been reviewed, and any resolutions have been discussed and approved, the portfolio owner can reforecast the fiscal and overall portfolio. Based on the reconciliation of the budgets, the organization may choose to reforecast the portfolio performance baselines. The organization may also choose to introduce a quarterly reforecast process as well, depending on financial reporting obligations.

Portfolio Closeout and Continuous Improvement Strategies

Collection of Cost and Schedule Data at Closeout
To support the year-over-year fiscal management process, as well as the overall execution of the portfolio, the organization will need to define how project and portfolio historical information will be collected. Based on these requirements, the project teams can start to gather project historical data. Once a project is completed, the project team can collect all the project costs and schedule data. This information will be analyzed to support improvements to estimating databases as well as provide improvement strategies for project delivery. These project closeout assessments will further enhance the development and execution of future portfolios. The organization should utilize a database to store the well-defined metrics and historical data for future use.

Ongoing/Continuous Improvement
Continuous improvement of portfolio management, controlling and reporting efficiencies is an important action that can assist the organization in creating additional improvements for analysis. The organization should introduce opportunities to refine and improve the overall portfolio delivery procedures and processes. The introduction of a continuous improvement strategy, including the assessment of lessons learned, will provide the necessary enhancements to the development and execution of the strategic portfolio management plan, which inadvertently will provide positive

Figure 25 – Fiscal Spend Profile Example
improvements to the strategic portfolio management model.

**Reporting Capabilities**

The last section of this article provides some examples of the diagnostic and reporting capabilities that the strategic portfolio management model can provide. In order to ensure that the appropriate levels of information are distributed to the correct decision makers and authorities, the organization will need to establish the reporting requirements to manage overall portfolio and project reporting.

Portfolio reporting tools offer information to assist the organization in understanding project and portfolio variances. Graphical reports present data in a visually appealing manner, where comparisons and relationships can be revealed through pattern recognition. Tabular reports, on the other hand, can provide information in many forms and styles, as well as through filtering and categorization of project and portfolio data.

The following graphs and tables represent a small sample of portfolio reporting that an organization may want to introduce into their company as a way to manage and control their respective portfolio. These graphical and tabular reports can cascade into greater levels of detail. Information can be presented at the highest portfolio level, or mid-level and project level segments.

Figure 25 is a time scaled histogram and cumulative curve that represents the planned, actual, and forecast fiscal spend. This information is gathered at the portfolio level, and visually identifies the variance between what was planned to be spent, versus what was actually spent.

Based on the information in Figure 25, the audience can view the fiscal plan, monthly incurred costs, as well as the monthly and annual forecasts for the year, for the entire portfolio. The assumption is that the plan was created prior to the current fiscal year based on a set of projects which met the predetermined criteria.

Projects can be classified in many ways, including project type, region or even the party responsible for executing the work, for example. Figure 26 provides a detailed look at the planned, actual and forecast costs for each respective project type. This information allows the user to identify which areas they need to further investigate. The classifications of project data should provide the necessary visibility into the portfolio of projects, which further allows management to introduce corrective actions for each respective area.

Similar to the graph provided in Figure 26, Table 13 provides an understanding of the forecast cost variance for each project type.

As mentioned earlier, it is beneficial to report on the portfolio of projects as defined by the organization. In Table 13, you will see that projects categorized per project type, as well as the current stage of the project delivery process (development or execution). This table allows the portfolio owner and managers from various areas to focus on their respective suite of projects, as well as see how a portion of their project set impacts the entire portfolio. Alternatively, this table can capture the current year plan, rather than the forecast amount. By using various classifications in which to assess the portfolio, the organization can show numerous graphs and tables to complete variance analysis or health checks.

Lower level project reporting can provide project teams and management insight into projects that are over or under incurring costs based on their

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**Figure 26 – Monthly Spend Breakdown per Project Type**
The plan would represent the suite of processes.

The plan would also provide a process for defining and introducing the strategic portfolio management model and policy.

The plan would also provide an outline for developing and managing the strategic portfolio plans, as well as defining resource requirements.

Finally, the article provides some examples of diagnostic analysis and reporting techniques to assist in managing and executing the portfolio of projects.

The following is a list of benefits for introducing a strategic portfolio management model and plan. Ultimately, the strategic portfolio management model and plan should:

- A structurally sound approach to strategic portfolio management.
- An organization with sound enterprise capabilities that support the development and execution of the portfolio based on risk tolerances and operational excellence.
- A continuous improvement platform for increased effectiveness and efficiency of the portfolio of projects.
- A validated strategic portfolio management plan (short term and long term) that is supported by all levels of management throughout the organization.
- A streamlined and optimized end-to-end integrated portfolio of programs and projects to assist in effective and efficient asset delivery.

In conclusion, the organization can now identify the key requirements for establishing a leading position in strategic portfolio management and execution, and provide an understanding of the link between corporate business strategy, portfolio governance and the delivery of a single project within the portfolio.

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Hacking People: Why Your Biggest Vulnerability Isn’t In Your IT Department

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Last week, Chris stopped off at his local coffee shop to have a chai before heading off to a trade show to deliver a keynote speech. As he sat at his usual spot near the counter, a heated discussion ensued next to him regarding the third quarter of 2017. In the middle of the morning’s caffeinated hustle and bustle, a marketing meeting was in progress.

He knew it was a marketing meeting because the three employees left the screens on their computers open to “Marketing Plans.” Much to his amazement, they “abandoned” the table and were apparently on line (as well as online). They left two smartphones and a couple of memory sticks out in the open, plain as a pumpkin spiced latte.

While reasonable predictions aren’t always correct, there’s a strong possibility that sooner or later the company will experience a breach. Moreover, it’s highly unlikely that anyone within the business or IT has taken a serious look at how its users operate to protect from this sort of vulnerability.

The biggest risk for any organization getting hacked is neither the firewall nor the server. It is Social Engineering. Social engineering is when employees inadvertently (or out of malice) give cyber thieves sensitive corporate or client information. The problem with most businesses and IT departments often neglect investing in shielding the most common attack surface motivated hackers use to gain access: employees.

Let’s review some of the socially engineered pitfalls that occur all too often:

• **Public Wi-Fi** – Public Wi-Fi is to your computer network as Kryptonite is to Superman. Unless you are sending out information that is encrypted via a secured site, never conduct any business from an unsecured Wi-Fi hotspot.

• **Public Places** – In the space of two seconds, it would have been possible for a thief to take screen shots of the third quarter plan with a smartphone, or to swipe the smartphones and stick drives or even one of the laptops. Any document, especially any document with links to your organization, is all a cyber thief needs to get going. Never leave documents unattended.

• **Phishing** – Remember those emails we once received from Nigeria, Lithuania, or Romania, that named us as the heirs to great fortunes? All they needed to secure the millions owed to us was a credit card number. People fell for it in droves. Then there were fake job postings that asked us for background information. The postings looked legitimate and we gave them what they asked for – and we fell for that too. Phishing has not gone away. It has become so sophisticated that we believe it comes from our bosses, or a supplier, or a nonprofit we might support. The links in the email are typically malware that can infect the entire network and grab important files. Don’t fall for it. When in doubt, always verify. An interesting fact: Millennials are more prone to falling for phishing than older employees! Over-familiarity with and blind trust of technology can be a dangerous thing.

• **Vindictiveness** – Remember the angry employee who was terminated? What precautions were taken to make sure that he or she was immediately shut out from the network? Terminated employees can sometimes be vindictive. Have a plan and protect your data so the recently fired sales executive can’t walk to your competitor with your latest leads or biggest accounts.

• **Vendors** – Your computer network is only as good as who has access to that network. Many cyber thieves have successfully snuck in through a back door by going through the networks of your vendors. This is a potentially huge problem for any organization having a continuous relationship with suppliers. If your network is “secure,” but your vendors have cyber security that is more like Swiss cheese, it can potentially create a huge vulnerability in your network.
COMP is a comprehensive package of benefits designed to encourage companies to develop the skills of their total cost management employees through AACE membership.

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UPCOMING AACE ANNUAL MEETINGS
- 2017 Annual Meeting - June 11 - 14  
  Hyatt Regency  Orlando, Florida, USA
- 2018 Annual Meeting - June 24 - 27  
  Manchester Grand Hyatt  San Diego, California, USA
- 2019 Annual Meeting - June 16 - 19  
  Sheraton  New Orleans, Louisiana, USA
The Arabian Gulf Section

The Arabian Gulf Section and guests visited the Riyadh Metro project on Nov. 23, 2016. The project team demonstrated the project scope, the progress, and showed the team one of the completed lines.

The Saudi Council of Engineers-Project Management Chapter and the Arabian Gulf Section jointly conducted the section’s third technical dinner meeting on Wednesday, Nov. 23, 2016, at the Saudi Council of Engineers, in Jeddah. Engineer Akram M. Al Najjar, a Project and Program Management Office (PMO) consultant, was the speaker and delivered a technical presentation on "Program Management – Case Studies."

The Arabian Gulf Section sponsored a Fall 2016 CCP Certification Refresher seminar. It opened at 2 p.m. on Friday, Nov. 4, 2016, in the Conference Hall of M/s Tarkiz Consultants, Al-Khobar. There were a total of six participations registered and attending this course. Mr. Ahmad K. Mulhim inaugurated the opening session and briefed attendees about AACE International and the Arabian Gulf Section and about AACE certifications and the advantages to participants of trying to becoming certified. Mr. Madhu Pillai delivered Cost Basics I and II sessions on the first day of the course.

The Arabian Gulf Section and the Saudi Council of Engineers Project Management Chapter jointly conducted the first technical dinner meeting from 6 to 8:30 p.m. on August 24, at the Park Inn by Radisson Hotel, Al-Khobar. The speaker, Takashi Duke Kiyama, is the general manager of the procurement department and associate executive officer of JGC. He delivered a technical presentation on the Kizuki and Kleppa projects.

Members of the Arabian Gulf Section visited Metro Riyadh project in November 2016. Shown above are Section representatives with members of the High Commission for the Development of Riyadh, in front of the main commission building.

Arabian Gulf Section President Ahmed Mulhim presents Dr. Mohamed El-Agroudy, a gift after Dr. El-Agroudy, a risk manager with Proper Engineering and Management, was speaker at the joint October meeting with the Saudi Council of Engineers PM Chapter.
Ahmad Mulhim, President of Arabian Gulf Section, delivered a technical presentation on AACE International certifications and their benefits and also briefed attendees about Arabian Gulf Section activities, etc.

On Oct. 18, 2016, President Mulhim visited King Saud University, Riyadh, and had a meeting with Dr. Khalid Hamzi, College of Engineering Dean and Professor Abdulhafid Shenawi, Civil Engineering Department Chairman. The visit and meeting were to discuss future collaboration between the section and KSU.

The Saudi Council of Engineers-Project Management Chapter and the Arabian Gulf Section jointly conducted their second technical dinner meeting on Tuesday, Oct. 18, 2016, at the Hilton Garden Inn Hotel, Riyadh. Dr. Mohamed El-Agroudy, Risk Manager, PROGER Engineering and Management was the speaker and delivered a technical presentation on, “Project Risk Management – Case Studies.”

On behalf of the Arabian Gulf Section Board, Mr. Bader Al-Saleh, Manager-Academic Development, participated as a speaker at Construction Week which was organized by M/s Flour Arabia, Al-Khobar on Wednesday, Oct. 5, 2016. He delivered two technical presentations, the first an overview and services provided by AACE International and the Arabian Gulf Section. The second presentation was, “Influence Factors for Effective Accurate Estimate in Saudi Arabia.”

**Brazil Section**

On Dec. 9, 2016, over 100 attendees from eight different states across Brazil gathered for the fourth Brazil Section Annual Meeting in Sao Paulo. The event offered internationally renowned speakers across a variety of highly valued topics. Attendees enjoyed the opportunity to interact with specialists and acquire new technical knowledge regarding planning and controlling construction projects and successful contract administration. The event was a fantastic technical and educational opportunity for all attendees and very well received by event sponsors.

**Central Ohio Section**

The Central Ohio Section conducted its October 2016 Section meeting at Barley’s Brewing Company in Columbus, Ohio. The guest speaker was Eric Bull, Executive Vice President of Elford Inc. Elford is a construction management and general contracting company located in Columbus, Ohio. Mr. Bull’s topic was, “Design Assist Procurement,” an up and coming project delivery method which incorporates key subcontractors early in the development of the project team to assist with planning, completion of design, validation of the budget and schedule, and procurement of long lead materials and equipment. Mr. Bull discussed the potential benefits of design assist and explored the criteria to consider when determining whether design assist is appropriate for a project. Mr. Bull shared a case study he has been preparing on a school renovation project that requires a complex strategy of construction phasing during the school year. It was a very informative presentation and enlightening discussion.

The Central Ohio Section is a young, thriving section, chartered in 2011, and it continues to grow and attract members and guest from around the Central Ohio Area. In its first two years, the section obtained both the Platinum and Silver awards
of excellence from AACE International. The Central Ohio Section is committed to enriching the profession in the region through enthusiasm to try new things that increase member value and strengthen the diversity of the section. You can find information about the section at LinkedIn at: www.linkedin.com/groups/8188672.

**Houston Gulf Coast Section**

The Dec. 13 presentation was the Houston Gulf Coast’s final meeting of 2016. James Morrison, computer scientist from the Houston FBI Division, gave an excellent presentation on cyber security. For years the threats of state sponsored cyber threats has been foremost on the mind of cybersecurity professionals and the criminal threats were largely overlooked or minimized. With the dramatic rise in Ransomware criminal cyber threats are becoming more of a threat to corporations. John relayed the importance that every user has a responsibility to become more aware of the threats and what steps they can take to minimize their personal exposure, as well as their company’s exposure to these threats and many others.

On Nov. 4 – 5, 2016, the HGCS assisted with hosting the inaugural Region 5 Symposium at Kiewit’s Office Facility in The Woodlands, Texas. The symposium included several technical presentations with cost engineering professions sharing their knowledge and experiences with others in the cost engineering profession. The technical sessions covered a broad list of topics, across a variety of industries, from a basic to advanced level. In addition, fundamental classes were conducted for estimating, risk, planning and scheduling and cost control.

On Oct. 21, 2016, HGCS participated in an outreach program at the University of Houston, School of Technology, main campus with 45 plus students in attendance. The program started with Josh Rowan giving an introduction and overview of AACE International and all the cost engineering related services and products the association has and how these are delivered to the membership.

Matt Baker concluded the program speaking on how students can pursue a cost engineering career and gave examples of his cost engineering career journey. Special thanks to Yemi Ibiyemi for the photos.

*Attendees at the October 2016 Central Ohio Section meeting included: shown above from left to right—Eric Bull, Exe. VP Elford Inc. and guest speaker at the meeting. Art Rentzch,ave Jones, Eric Stein, Section Board Member; Chris Boyd, Section Secretary; Patty Dadosky, Valerie Johnson, Joe Venditti, Section Board Member; Karen Marshall, Nouhessedo Agondanou, Dan Jones, Eric Kramer, Erik Neilsen, Babak Firoozi, and Fouda Elfaour, Section VP.*
North Florida Section

At this time of year, it is the North Florida Section's tradition to present an “You’re a Star” award. This award goes to a North Florida Section member who has made significant and outstanding contributions that have made a positive difference to the programs and activities of the Section. Previous winners include Joe Brown, Bill Sheerin, David Harrison, Susan Zimmerman, Dallas Lee, Del Younger, Sam Griggs, Marlene Hyde, and John Orr.

The 2016 North Florida Section “You’re a Star” Award was presented to Fernando Villanueva. Fernando has been an AACE member for 16 years, and has served as a Section director since 2013. His active leadership for the Section has benefitted Section programs and activities significantly, including arranging a meeting facility at his company for Section use in recent years. His dedication has meant going well above and beyond in preparing for Section meetings each month, and taking every challenge in stride with a genial can-do attitude.

A Principal/Project Manager at PMA Consultants in Orlando, Florida, Mr. Villanueva is a previous winner of the prestigious 2014 CCTS Engineer’s Week Technical Achievement Award. This award honored his 24 years of outstanding contributions to the cost engineering profession including implementation of revolutionary network-based project planning/scheduling technology both in the United States and abroad; and for excellence in dedication to his professional associations and to their development and success. The Canaveral Council of Technical Societies (CCTS) is a group of 31 area technical associations to which the North Florida Section belongs as a founding member society. For more information, visit the CCTS Web site at www.cctsonline.org.

In recognition of his outstanding leadership and numerous contributions to his profession and to the success of the Section’s programs and activities, the section was pleased to present Fernando with its 2016 North Florida Section “You’re a Star” Award. Sincerest appreciation goes to Fernando for his service to the Section, along with congratulations.

Portugal Section

“The Portugal Section, chartered in June 2016, recently had its debut in public events in Portugal through a presentation delivered at the annual conference of the PMI Portugal Chapter, hosted in Lisbon on November 12, with an audience of about 50 participants. The presentation was developed collectively by the five current board members who founded the Section: Alexandre Rodrigues (President), Jorge Lavaredas (Vice-President), Nuno Barriga (Treasurer), Fátima Matias (Secretary) and Vítor Sá (vowel), and it was presented jointly by Jorge Lavaredas and Nuno Barriga. In the presentation, AACE’s perspective of the cost engineering discipline was explained to center on the broad process of Strategic Asset Management (SAM), and how it relates to project management as a “tool supporting discipline” useful in delivering effectively management decisions at the SAM level. The long-term perspective of the SAM process and its critical impact on the performance of business strategies was also explained, as well as its relevance for the current scenario of the Portuguese economy where investment in projects is far more constrained than in the pre-crisis era: hence, selecting less but higher-value projects and maximizing the efficiency of existing assets created during the economic-boom era is currently the necessary model of economic sustainability and eventual growth recovery. Information was also presented about the...
AACE recommended practices and certification programs, along with the membership benefits and lines of activities.

Despite having been pushed to the lunch time period by both the odd schedule of the conference and its kick-off delay, the presentation was extremely well received by the participants, who endorsed various questions throughout and stayed until the very end of the presentation. The contents of the presentation were partially offered by PMO Projects Group, an Approved Education Provider (AEP).

**Southern California Section**

The Southern California’s annual holiday party-networking event was at 6 p.m. on Thursday, Dec. 15, 2016 at Ballast Point. This beautiful location on the water in Long Beach also offered great food, beer, and wine. Often times at section dinner meetings, attendees get limited time to network with new folks and catch up with old friends, so this was the perfect opportunity to network.

**Marla Miller Memorial Scholarship Fund**

On Dec. 14, 2016, Marla Miller, one of the Southern California Section’s young and vibrant members succumbed to cancer. An active AACE member and a graduate of Cal Poly Pomona, section members, family, and friends will truly miss Marla. In honor of her, the section created a SoCal scholarship. Please help by making a donation to the Marla Miller Memorial Scholarship Fund. All proceeds go directly to students pursuing a program related to cost engineering/cost management. Payment donations can be made online via www.aace-scs.com.

Continuing the Southern California Section’s 55th year, on Nov. 15, 2016, Dennis Ropdriguez, Building Information Modeling (BIM) Enterprise Manager for AECOM’s Transportation/Aviation Sector and John Haynes, Program Manager for Hill International, presented, BIM Data That Serves The Owners Needs Through‐Out the Lifecycle. Advances in technology are ushering in a new era where connectivity is ubiquitous and data is at the center of every building and infrastructure project, along with enterprise BIM implementation/integration strategies. The process integrates design, construction, and commissioning together with facility/asset management and GIS into all aspects of facility operations and maintenance – informing every person, process and decision – enabling AEC firms of all sizes to reap greater ROI. There were 16 in attendance at the dinner meeting including two student guests.

**Franklin Electric Announces Engineering Scholarship Recipients**

Franklin Electric Co., Inc. announces recipients of the 2016 Franklin Electric Charitable and Educational Foundation Engineering Scholarship Program.

As a global engineering leader, Franklin Electric is proud to support local students in an effort to continue to shape the future of the water and fueling system industries. The scholarship program funds up to two consecutive academic years for eligible students. Each scholarship will be $5,000 per academic year payable at $2,500 for each completed semester for a total scholarship of up to $10,000. This scholarship also includes a paid summer internship position between the recipient’s Junior and Senior academic school year.

The recipients of the engineering scholarships have been chosen by a selection committee comprised of IPFW professors and staff and Franklin Electric professionals. Recipients were selected based on scholastic achievement, application details, reference letters and a written essay. Qualifying applicants were interviewed by designated appointees of the selection committee. Join us in congratulating this year’s winners.

**IPFW Engineering Scholarship - Cooper Anthony Hill**

Hill is currently a junior at IPFW, majoring in Electrical Engineering. He has been named a Chancellor’s Distinguished Scholar, member of The Dean’s Honor Roll, Honors Program, and graduated as the salutatorian of Adams Central High School in 2014. Cooper is currently an IEEE member, an ETC tutor for first year engineering students, grades papers for ENGR127 and 128, and is a participant on the intermural flag football team.

**Indiana Tech Engineering Scholarship - Dakota Rene Dawson**

Dawson is the first annual recipient of the Indiana Tech Engineering Scholarship. She is currently a junior at Indiana Tech, majoring in Mechanical Engineering. She graduated from Carroll High School in 2014 with a 3.914 GPA. She is a member of The Dean’s List, American Society of Mechanical Engineers, Fort Wayne Lacrosse Association, and enjoys volunteering for Fort4Fitness and the Allen County SPCA.
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 2017.

2017-2018 Source Section News Submission Schedule

February 2017
• Items submitted from Oct. 16 - Dec. 15, 2016

April 2017
• Items submitted from Dec. 16 - Feb. 15, 2017

June 2017
• Items submitted from Feb. 16 - April 15, 2017

August 2017
• Items submitted April 16 - June 15, 2017

October 2017
• Items submitted June 16 - Aug. 15, 2017

December 2017
• Items submitted Aug. 16 - Oct. 15, 2017

February 2018
• Items submitted from Oct. 16 - Dec. 15, 2017

April 2018
• Items submitted from Dec. 16 - Feb. 15, 2018

June 2018
• Items submitted from Feb. 17 - April 15, 2018

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” items, 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.)
Kimberly Anne Hunter 1960-2016

In memory and everlasting love; our beloved Kim Hunter. Born in September 1960, in Sarasota County, Florida, during Hurricane Donna, to Jerry and Faye Steerman. Kim often joked and reminded her husband that she inherited her energy from being born during that storm.

Kim enjoyed stories and songs with her father – including rides along the beach on the handlebars of a motorcycle guided by her father. In those days – excessive worry about skinned knees and helmets faded into the bliss of joyful play time with a loved one.

Kim was fortunate to be able to spend several years with her grandmother, Evelynn, who had a profound impact on shaping Kim’s character with regard to love for God, family, neighbors, and making sure her home was a warm, safe, and welcoming place.

Enlisting in the United States Marine Corps in 1983, Kim went to Parris Island for recruit training, then followed on to Marine Corps Air Ground Combat Center at 29 Palms California. Kim tested with very high aptitude for arithmetic reasoning, electronics aptitude, and spatial perception.

Her Military Occupational Specialty (MOS) was ground radio repair. After formal school, she was assigned to the unit where she met her husband, Ken Hunter.

Kim and Ken enjoyed runs in the desert, walks in Joshua Tree National Monument, and shooting out in the desert. Kim often enjoyed telling the story of when she and Ken were out shooting and Ken asked her to shoot the leg of an old chair some distance away with her .22 rifle. She shot it, hit it, and the leg shook. Ken asked her to shoot it again, the leg shook again, and Ken immediately proposed marriage. Ken and Kim were both moonstruck in love by that time.

Kim went on to serve with distinction winning the respect of all those junior and senior to her. Kim’s billets include: Communications Officer, Signal Intelligence Officer, and Legal Adjutant. Kim retired at the rank of Major from the Marines in January 2004, with just over 20 years of service.

Kim transitioned well into the professional world as a civilian employee. She again served with distinction, continuing her professional and academic education. She earned the Project Management Professional certification, along with a Master of Science degree from George Mason University. Kim worked for some time on a Ph.D. from Capella University. Kim’s posts included: Senior Project Management, Federal billets, and as a Professor at Defense Acquisition University. At the time of her passing, Kim was employed with Ernst & Young, supporting the FAA, one of the many high points in her career.

Kim enjoyed being outdoors taking care of her family’s 5.5 acre farm. She spent lots of time in the garden, grooming her yard, walking and talking with Ken, and learning about and growing herbs and dried flowers. Kim was very fond of animals and went the extra mile to always show kindness to God’s creatures around us. She enjoyed many hours grooming and being in the saddle of her horses. She spent quality time practicing horsemanship with her beloved friend/neighbor and sister in Christ - Sandy Arnold.

Kim and Ken would occasionally sit down at her PC and iTunes and have what they called a “music date”, where they’d look up music from their past, movies, or probe other areas of music on the current charts. They have quite a playlist of music from all their years together. One of the ways Kim made use of her time during long commutes – was to listen to audio books that talked about history, learning, as well as the classics. Those that spoke with Kim would note that she was always able to quote “someone said from somewhere...” That was her secret.

Kim’s battle with ovarian cancer began in Feb 2013, with diagnosis and follow-on treatment. Kim was able (with prayer and strength from the Lord) to continue working professionally, go on several vacations, and enjoy time with her family and friends.

Kim still managed to do what her husband called a pretty effective “bedside ministry” in her last several weeks of life. Many beloved friends and family came by to visit. This was very good medicine for Kim and in turn – Kim was able to touch their hearts in profound ways.

Kim’s ascension to Glory happened on 25 December. Her husband Ken and her Sister Debra were holding her hands and had just finished reading a beautiful Vidui prayer over her when she ascended.
Our Beloved Kim is survived by many members of beloved friends and family.

- Her Husband: Ken Hunter
- Her Daughter: Brittney Hunter
- Her Grandson: DaVi Hunter-Riegner
- Her Father: Jerry Steerman, Sr.
- Her Brother: Jerry Steerman, Jr. (Jay)
- Her Brother: Daniel Steerman
- Her Sister: Debra Davidson


A service for Kimberly was conducted at the St. Thomas Methodist Church, 8899 Sudley Rd., Manassas, VA, at 10:30 a.m. on Thursday, Jan. 5, 2017, with the Rev. David Forrest officiating. Interment followed in Quantico National Cemetery at 1 p.m. A reception was also held from 2-4 p.m. at the Globe and Laurel Restaurant, 3987 Jefferson Davis Hwy., Stafford, VA. A guestbook was posted at: www.bakerpostfh.com, for friends and acquaintances to sign. This obituary is also archived at ObitsforLife.com

Reprinted from the
Baker-Post Funeral Home & Cremation Center

AACE International sadly announced the passing of Kim Hunter. “We have lost a friend, colleague, and a valued member of AACE International,” said John Livengood, President of AACE International. Kim was a recognized expert in the earned value community and was a certified Earned Value Professional. She served on the AACE International Earned Value Subcommittee, writing several Recommended Practices. She also chaired the Government Liaison Subcommittee and spearheaded the successful conference on “EVM and Risk Management” in April 2012. She taught the Earned Value certification seminars at the AACE Annual Meeting for a number of years and was well-known through her participation in a number of other conferences. She was passionate about EVM and was respected for her expertise on the subject. She taught earned value to all the branches of the Department of Defense. She promoted the AACE International Earned Value Professional (EVP) certification to all who attended DAU and taught a refresher course to other instructors at DAU so they could get their EVP certification.

“My friend Kim was a passionate advocate of EVM throughout her career, and she was also a loving wife, mother, grandmother, sister, daughter, friend, an avid horse rider, and a woman of great Christian faith. I will miss her and so will everyone who knew her.” said Marlene Hyde, AACE International 2012-2013 Past President.

THE COST ENGINEERING JOURNAL IS ALL DIGITAL!

AACE Members, be sure to start the new year off in digital mode and log on to AACE International’s new website at web.aacei.org to view the new digital issue of the Cost Engineering journal.

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**FEBRUARY 2017**

9  **CMAA Owner’s Night**,  
The Grand Event Center,  
Long Beach, CA  
Contact: www.cmaasc.org

15-16  **Risk Quantification Seminar**,  
Zwijndrecht, The Netherlands  
Contact:  
www.costmanagement.eu/seminar

16  **Online or In-Person Class: Load Rating of Highway and Rail Bridges**,  
Structural Engineers Association of Illinois (SEAOI),  
155 N. Wacker Dr.  
Chicago, IL  
Contact:  
www.seaoi.org/registration-load-rating-bridges

**MARCH 2017**

1-3  **The 2017 International Roofing Expo**,  
Mandalay Bay Convention Center  
Las Vegas, Nevada  
Contact:  
www.theroofingexpo.com/attendee/register

2-5  **The 2017 Western Winter Workshop**,  
The San Francisco Bay Area Section and Southern California Section of AACE International,  
Renaissance Indian Wells Resort,  
Indian Wells, CA  
Contact:  
www.westernwinterworkshop.com

2-7  **ASCE Construction Institute’s Ci Summit**,  
Anaheim, CA  
Contact:  
www.cisummit.org/program

7-9  **98th Annual AGC Convention**,  
Las Vegas, Nevada  
Contact:  
www.eiseverywhere.com

**APRIL 2017**

26  **CMAA Southern California Chapter 25th Annual Awards Gala**,  
J.W. Marriott  
Los Angeles, CA  
Contact: www.cmaasc.org

**JUNE 2017**

11-14  **AACE International’s 2017 Annual Meeting**,  
AACE International,  
Hyatt Regency Orlando  
Orlando, FL  
Contact: phone 1-800-858-COST  
fax (304) 291-5728  
info@aacei.org  
web.aacei.org

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

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