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Finding the Right Construction Managers for Your Projects



By Sarah Sparks
IPA Product Champion, Organizations & Teams

In this difficult project environment, project organizations have been under a tremendous amount of pressure to cut costs. This pressure has translated into staff cuts and, in many cases, even the elimination of whole functions from owner organizations. Construction management is one function that, in many cases, owners have eliminated, based on the feeling that contractors are better poised to perform the role. However, Independent Project Analysis (IPA), Inc. research has repeatedly shown the importance of having an owner construction manager on the team early. There are several reasons to not rely solely on contractors to perform the construction manager role.

All contracting involves a form of the “agency problem”; the agent’s (or contractor’s) incentives and goals will never perfectly match the owner’s. This is not due to ill-intent; it is simply a fact of life. Contractors answer to different stakeholders.

Consequently, a contracted resource will never be able to provide input or execute a project with the same owner-driven considerations a company resource can.

A Core Team Member in Delivering Successful Projects. Additionally, to ensure constructability is appropriately considered early enough in the project, a project team requires construction management insights early in the project planning and development process. The construction manager is a core team member and, as such, is required when the team is formed during the scoping phase. However, when the function is performed solely by a contractor, project teams rarely get the early input they need. This leads to ineffective planning and, ultimately, degraded execution performance.

Finally, the owner construction management role is fundamentally different from that of a contractor construction

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Excellence Through Measurement®

Continued from cover



IPA Set Out to Answer the Following Questions for the Construction Manager Competency Study:

- *What specific qualities and characteristics of an owner construction manager drive better performance?*
- *How do these characteristics differ based on project size?*
- *Can companies use the project characteristics to support selection of the right construction manager for the job?*

manager, especially on large projects. Instead of being involved in the day-to-day management of construction resources, materials, and equipment, the owner construction manager is responsible for managing the entire phase with the end goal in mind and communicating with all stakeholders.

A Shift Back to In-House Construction Management Competency. Recently, IPA has seen the industry begin to reconsider its approach to construction management. Owners have begun to realize they cannot rely as much on contractors to effectively perform the role. As we now look to rebuild in-house competency in this function, we are faced with a major challenge—our old ways of hiring based on experience are no longer going to work in the wake of the demographic shift. So how do we rebuild owner construction management in the absence of experience?

IPA has launched a series of competency studies covering various project team functions in an effort to support our clients in strengthening their talent management systems—from hiring to assessing performance—by identifying the “softer” aspects of a person that support performance in

their role. The first IPA competency study was unveiled early in 2016. The study, completed by IPA Senior Analysts David Purzer and Jon Walker, focused on the characteristics and leadership attributes of project managers.

IPA’s second and latest competency study, introduced to the capital projects industry in March at the Industry Benchmarking Consortium (IBC) 2017, examines the construction manager role. This timely research, led by IPA’s Organizations & Teams Product Champion Sarah Sparks and Associate Research Analyst Catherine Petrick, is based on surveys from over 250 construction managers across three key dimensions: experience, personality, and leadership style. Sparks and Petrick then linked attributes within each dimension to several success factors, including safe project execution, predictable delivery (on-time, on-budget), and the effectiveness of the delivery (low cost, fast).

Overall, the construction manager competency study found that the characteristics that support construction manager performance are dependent on the project size and priority (i.e., low cost vs. fast schedule). Here are highlights of the study findings:

Identifying Attributes That Support Construction Manager Success



- **Prior knowledge and experience in operations supports the small project construction manager in effectively using his or her knowledge of the site's practices and procedures to support better planning.** However, no specific prior functional experience (outside construction management experience) was found to support performance on large projects.
- **On a small project, it is important for construction managers to be extroverted while on a large project higher levels of vigilance pay off.** On small projects, being sociable is critical to effectively working and negotiating with stakeholders to get the resources required at the right time. However, on large projects, which are very sensitive to quickly spiraling out of control amidst problems, neuroticism is the most critical trait. People with higher levels of neuroticism are able to anticipate and plan for problems before they occur.
- **When speed is a priority, there is a clear difference in the leadership style that supports performance on small and large projects.** On small projects, construction managers who are able to build a collaborative team that works together toward a

common vision are able to achieve faster schedules. On large projects, construction managers who clearly articulate their expectations to the team, but give them the autonomy to execute the project as they see fit, are more effective.

These findings show the need for Industry to improve the sophistication of its hiring, selection, and development processes to include attributes beyond just prior experience in a role. IPA's research is conclusive in showing that a detailed understanding of a project team's personnel, combined with a clear understanding of the project and its priorities, aids in selecting the individuals who are most likely to help projects succeed.

Lastly, IPA would like thank all of the companies and construction managers who participated in the study. Without their willingness to provide us with detailed information about themselves, we could not have performed the research that enabled us to quantitatively link individual characteristics with performance.

To learn more about IPA's project team competency assessment research and client services, please contact Sarah Sparks, IPA Product Champion, Organizations and Team, at ssparks@ipaglobal.com.

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IPA, Clients Collaborate in Creating Unified Cost Coding Structure for Mining & Minerals Industry

AACEI Endorses Standardized Industry Coding Structure

Cost coding is not standardized across the mining industry. Mining companies have developed their own internal convention of how to group scope components and commodities into categories. The resulting lack of cost category commonality from company to company, and from contractor to contractor, creates barriers to using and sharing others' data. Therefore, the cost performance of individual mining and minerals projects is difficult to compare for even similar scope projects.

Some industry players committed to improving the performance of their mining and minerals projects recognize the value of an industry-wide code of accounts. However, many mining and minerals company managers are quick to point out the burdens that go along with adopting a new cost coding system for their company's capital projects. Implementing a new cost coding structure entails time-consuming staff training. Plus, the new cost coding system might necessitate the procurement or modification of software applications. To them, the link between adopting a unified cost coding structure and improving capital effectiveness is not immediately clear.

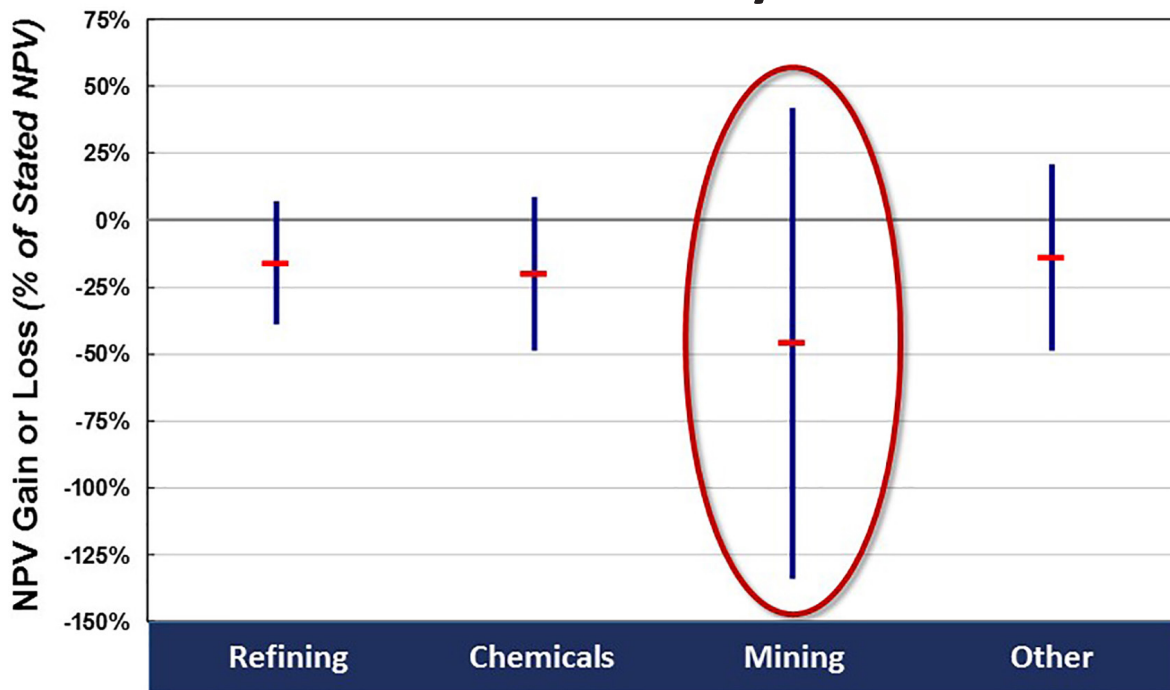
IPA has seen many company-specific cost coding structures during the course of evaluating clients' mining projects. The scope of these mining projects ranges from ore body exploration, to mine development, to stockpiling, to tailings and infrastructure projects. While the commodities, methods, and processes for these mining projects differ greatly, a review of the scope of mining projects reveals a lot of commonality across first, second, and even third level cost categories. For instance, despite the difference in codes or

category titles, many cost structures at "level 1" account for mine costs, processing facilities, and infrastructure needs. Relatively common "level 2" cost categories include the costs of major components of mine development and production systems; process facilities, including major concentration and auxiliary facilities; and major off-site and on-site infrastructures components. Differences are a bit more frequent at "level 3" as project scopes vary in accordance around the types of mines and facilities, but many cost coding similarities, such as for mobile equipment and on-site bulk storage, can still be identified among companies.

Uniform Cost Coding Structure Benefits. Without industry-wide recognized cost codes, cost comparisons are less reliable. Contractor cost data for mining projects cannot be compared on an equal basis. What's more, cost models are difficult to develop. To be certain, if mining companies could agree on a shared cost coding arrangement, they would be able to deliver projects more effectively. A good example of an industry benefiting from a uniform cost coding structure is the oil industry's widespread acceptance and use of the Norsk Sokkels Konkuranseposisjon (NORSOK).

For the last few years, IPA has been working with several of the world's leading mining and minerals companies to create a uniform cost coding structure suitable for use by owners and contractors alike. In 2014, a joint steering committee comprising Anglo American, Barrick, BHP Billiton, and Rio Tinto was formed. A short time later, the steering committee agreed to sponsor an IPA-facilitated cost coding structure study.

Mining Projects Have a Higher Average NPV Loss* Than Other Industry Sectors



* From project authorization to 2 years after handover to operations

For the study, each of the four steering committee members reviewed each other's cost coding structures and practices. The steering group and IPA determined that at the highest breakdown structure levels, project costs, more often than not, are categorized and defined the same way. They are just coded differently.

Consequently, the steering group committee members were able to consolidate the individual coding structures into a single coding structure that all four companies can use to meet their project cost coding requirements. The result—after many meetings and review periods—is the first version of the Mining and Mineral Processing Uniform Cost Coding Structure (MMP-UCCS), which was approved by the steering committee in mid-2015. Since the beginning of 2016, the MMP-UCCS has been used on a trial basis on projects funded by the steering committee member companies.

Sharing With the Mining Industry. Early on, one of the steering committee's key objectives was to share the common cost coding structure for mining projects with a large audience of cost engineers and project professionals. At the AACE International 2017 Annual Meeting on June 12 in Orlando, Florida, the MMP-UCCS will be introduced to a large industry audience for the first time. AACEI's Technical Board has agreed to process the MMP-UCCS as a Recommended Practice (RP). The proposed cost coding

standard will go through a rigorous review process before being accepted as an RP for use by the mining industry and contractor community. The release of the MMP-UCCS, as it happens, coincides with the recent uptick in project activities in some regions, driven by modest commodity price increases. This is a good time for the MMP-UCCS rollout.

At the AACEI event, IPA Mining, Minerals, and Metals Business Area Manager Baqun Ding will present a technical paper covering the MMP-UCCS's development, purpose, and design. As the paper explains, the MMP-UCCS is not in itself meant to improve the development of project cost estimates or substitute for a company's existing Work Breakdown Structure (WBS). Rather, it is hoped that the industry will embrace the code as a means of increasing its visibility into project costs. The value of its adoption will be shared and recognized as more companies adopt it. The vision for the MMP-UCCS is to improve capital efficiency by facilitating transparency between mining and minerals owner companies and contractors. Adoption of the cost coding structure also will enable the development of mining-specific cost metrics to be used in evaluating and benchmarking projects at different levels.

For more information, contact Baqun Ding, IPA Mining, Minerals, and Metals Business Area Manager, at bding@ipaglobal.com

—By Geoff Emeigh



Six Examples of How IPA Works With Government Capital Projects

Governments around the world, from the local to the federal level, spend billions of dollars investing in infrastructure through capital projects. These efforts can range from routine expansions of transportation routes to megaprojects, such as new airports. As in the private sector, meeting capital budgets and delivering value to the customer are key goals. Over



By Phyllis Kulkarni,
IPA North America
Regional Director

the years, Independent Project Analysis, Inc. (IPA) has examined a number of government-run capital projects. IPA understands the challenges these projects face.

Compared to the private sector, government capital projects may have added constraints—such as the contracting strategy that can be used, required contingency levels, and authorization timing—that can impede good planning. They also frequently have multiple stakeholders, including not only the government and private developers but also landowners and constituents. That said, the same project Best Practices that are beneficial to the development and execution of private sector projects are applicable in the government sector. Below are six examples of IPA's work with government departments around the world:

1. Analysis of Contracting Incentives in Civil Construction Projects for Military Facilities. A defense organization commissioned IPA to benchmark a broad

sample of its projects, as well as conduct a study of other civil projects in IPA's database, to determine the use and benefit of contracting incentives in civil projects. Incentives could include additional money for meeting certain productivity metrics, such as hours per drawing or accepted welds per 100.

IPA examined over 100 civil projects that cost between US\$1 million and US\$100 million, including laboratories, office buildings, and warehouses. The study quantified how contracting incentives are used, and where they show some benefit. The study documented an array of practices that help civil projects achieve better cost and schedule performance, beyond incentives. The end result was a checklist that the organization could use to determine whether to apply incentives.

2. Productivity Study for a Government Finance Department. A government finance department hired IPA to establish quantitative productivity metrics that it could use to better assess contractor project cost and schedule estimates. IPA created a framework for the department to assess productivity at different points in a project's life. We also analyzed the department's past projects to understand root causes of better or worse performance.

IPA provided the department with recommendations it used to improve site representative participation early on in the project and to standardize and improve its own cost estimating methods to better assess contractor estimates. For example, some projects did not accurately split the material and labor costs, which limited the organization's ability to determine whether procurement or construction required improvement.

3. Program Team Development for International Airport Expansion. An airport was planning an

infrastructure expansion to keep up with airline passenger growth. The expansion project was the largest capital investment in the airport since it opened. The client sought to understand its owner team needs for a project of this size, as well as the optimal contracting strategies for design and execution.



IPA used its database of project teams to recommend a specific team structure, reporting relationships, and headcount for the project, along with recommendations to effectively use a project manager consultant (PMC).

4. Benchmarking Project Schedule Durations for a Defense Agency. In this work, IPA compared the defense agency's schedule durations for typical projects against industry norms, and assessed whether recent measures, such as establishing a central Project Management Office (PMO) and centralized procurement, had improved schedule durations and predictability.

5. Evaluation of New Technology Commercialization Capabilities of an Energy Department. In a multi-year effort, IPA conducted a deep assessment of the department's capabilities around commercializing new technologies. IPA provided an independent assessment of proposals provided from public and private companies to develop the required new technologies. This helped the department identify the proposals that were most likely to be successful, and opportunities to further mitigate risk. After the accepted proposals were executed, IPA conducted a lessons learned evaluation of the projects.

6. Improvement of Project Delivery Systems for a City Metro System. With an annual project portfolio of about US\$5 billion, this rapid transit client needed a more comprehensive, standardized investment processes for its project delivery system. IPA conducted an "as-is" assessment to document the current state of its investment processes, developed a "should-be" plan, and is currently identifying solutions to maintain the strengths and close the gaps. IPA was also asked to assist in the implementation of the recommended changes.

For more information on how IPA can help improve government project outcomes, contact one of IPA's regional directors. This contact information can be found by visiting IPA's website at <http://www.ipaglobal.com/regions>.

Supporting Continuous Improvement for Power Projects

Power companies often struggle to deliver power projects close to their anticipated cost and schedule targets. This poor capital performance can be attributed to several causes. For example, IPA has found that power companies are more likely to develop projects without a formal project development process in place. Power companies also tend to authorize project funds before roles and responsibilities and risk mitigation plans are defined. Incomplete basic designs and summary-level status updates detract from performance during project execution.

IPA has a long history of helping companies in many industry sectors improve their capital project systems and individual project outcomes. Central to IPA's work is its database of more than 18,000 capital projects, which includes more than 500 power projects. IPA can measure and evaluate the performance of power projects relative to a power sector industry average and identify links between project practices and outcomes.

In the case of a large U.S.-based power company, for

instance, IPA deployed a project benchmarking study to determine there were significant differences in the quality and nature of the practices the company used in planning, developing, and executing its capital projects.

After the benchmarking study, the company asked IPA to conduct follow-up activities, including work process reviews, organizational assessments, and front-end planning workshops. The company and IPA's shared goal was to assist with the development and institutionalization of a more uniform system of project planning, development, and execution.

Today, the company's project delivery system makes

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IPA Current Power Sector Database

500+ Projects (Total IPA Database is >18,000 Projects)



Generation: 190+ projects

- From <50 MW to > 500 MW
- Multiple feedstocks: natural gas, coal, refinery fuel, nuclear, wind, hydro, solar, etc.



Transmission: 40+ projects

- Lines from 9 miles to 900 miles
- Voltages from 130 kv to 800 kv, AC and DC
- Support structures, towers, poles, foundations, conductors, insulators, communication, control and protection facilities, etc.



Distribution: 280+ projects

- Substations, switchgear, transformers, etc.

use of a gated work process with clear deliverable requirements for approval. In addition, core project team assignments are made during the early phases of the company's project development work process. Project control procedures are now standardized and, importantly, late design changes are subjected to rigorous review, if they are approved at all. The company credited the late design change gate review process for lowering one project cost estimate by more than \$60 million.

Other IPA power company clients have credited IPA with reducing their project risk profiles. According to one senior power company official, IPA showed the company how a properly designed project system forces project teams to reconfirm and refine the assumptions used to develop a project's scope, schedule, budget, and operations plan at each stage of the project development process. "If used correctly, it affords the team the opportunity to modify its plans to satisfy the project constraints prior to the construction phase where such changes can be expensive and may jeopardize the project schedule," the official said. Another client representative said IPA's power projects database and quantitative analysis capabilities linking project inputs

with safety, cost, schedule, and operability outcomes were central to steering their company away from investing in a capital project that IPA deemed as being set up for failure.

IPA's capital project expertise can also enhance the role of business involvement and strengthen project organizational effectiveness. For example, IPA helped a client develop a Project Management Office (PMO) to support its multiple project sites. Today, the PMO enables the company to identify, quantify, and implement system improvement opportunities, thereby promoting continuous quality improvement efforts going forward.

IPA can also support project teams by conducting project evaluations. These evaluations are intended to identify project risks, practices, and organizational gaps that may be detrimental to project success. For example, the IPA metrics may identify a particular function that project teams frequently lack, and the lack of this functional involvement may be statistically linked to major late design changes and increased costs and longer schedules.

For more information about how IPA can improve the performance of power sector projects, please contact IPA COO Elizabeth Sanborn at esanborn@ipaglobal.com.

Visit www.IPAGlobal.com to learn more about IPA's capital project evaluations, consulting and research services, conferences, and training courses.



THE IPA INSTITUTE
ADVANCING PROJECT KNOWLEDGE

2017 Public Course Schedule

The IPA Institute's 2017 public course schedule is shown below. Based on participant feedback, the IPA Institute has reduced the durations of these courses from 3 days to just 2 days, resulting in lower registration fees and less time required out of the office.

Visit www.ipaglobal.com/public-courses for additional information about these courses.

Project Management Best Practices (16 PDUs)

September 26-27 Houston, Texas	October 10-11: Paris, France
October 10-11: Bangkok, Thailand	November 28-29: São Paulo, Brazil

Best Practices for Site-Based Projects (16 PDUs)

June 27-28: São Paulo, Brazil	September 12-13: Perth, Australia
September 19-20: The Hague, Netherlands	October 17-18: Orlando, Florida
November 7-8: Kuala Lumpur, Malaysia	

Delivering Value Growth Through Effective Oil & Gas Asset Developments (16 PDUs)

July 11-12: Jakarta, Indonesia

Gatekeeping for Capital Project Governance (16 PDUs)

August 29-30: Santiago, Chile

Free Webinars

The 7 Deadly Sins in Industrial Megaprojects—IPA data from more than 300 global megaprojects show more than 50 percent failed to meet business objectives. IPA Institute Director Andrew Griffith discusses the specific reasons why megaprojects in the oil and gas, refining, chemicals, minerals, power, and related industries fail so frequently.

Site Improvement: Identifying the Pathway to Success—Through benchmarking, Industry has improved the cost performance of its site-based capital projects by 5 percent. However, IPA data show that, when using established Best Practices, this number has the potential to be much larger. IPA Senior Research Team Lead Alexander Ogilvie leads this discussion.

Project Controls Best Practices—IPA Institute Director Andrew Griffith leads a webinar on project controls practices that are aimed to minimize deviations from plan as the project advances through execution. Griffith discusses proven Best Practices that drive improved capital project outcomes.

PMI Registered Education Provider

The IPA Institute is a Registered Education Provider (REP) of the Project Management Institute (PMI). All IPA Institute seminars align with current PMBOK standards, enabling PMI credential holders (PMP, PgMP, PMI-SP, PfMP, etc.) to claim Professional Development Units (PDUs) upon completion of each IPA Institute course.



IPA Capital Solutions Director Allison Aschman Presents at BreakBulk Europe 2017

Capital project supply and cargo shipping companies got a big-picture look at how owner companies are responding to global uncertainty vis-à-vis capital spending.

Owner companies have cut back drastically on capital spend since 2013, IPA Capital Solutions Director Allison Aschman said during a presentation at BreakBulk Europe 2017, held in Antwerp, Belgium. Although lower commodity prices are to blame for lower capital project activity in more recent years, global uncertainty that can be traced all the way back to the 2008 Global Financial Crisis has caused owner companies to curb capital investment. "Clearly, we are living in very uncertain times," Aschman said, whose presentation echoed IPA President Edward Merrow's keynote address and other IPA presentations at the Industry Benchmarking Consortium (IBC) 2017, held in Landsdowne, Virginia, USA, in March. "Lately the trend has been for owners to retrench rather than grow through capital investments."

Case in point: Fewer capital projects were completed in 2016 than at any time since the 1990s, a decade that saw delivery of relatively few large projects. Of the capital projects completed in 2016, IPA found that a majority of them were small projects valued less than US\$10 million. "The



Allison Aschman

smaller number of large projects reflects market uncertainty," Aschman said, speaking at the conference on April 26.

Meanwhile, some owner companies that decided to invest heavily in projects expected for completion in 2016 have seen those projects experience severe issues and delays. Included among those problematic projects are megaprojects valued at more than US\$1 billion. "The megaprojects currently in execution are known to be in trouble in too many cases."

The demographic shift in experienced project professionals is a reason for the industry's struggles in delivering capital projects. Some observers suggest the "demographic cliff" has been reached and that fewer seasoned professionals will be retiring or leaving the workforce over the next several years, but owner companies are finding it difficult to fill critical engineering and project control functions.

Efforts to establish and maintain project team competencies are not the only challenges facing owner companies looking to improve the effectiveness of their capital investments. Business pressures are resulting in disappointing project outcomes also. "Less experienced project professionals are very good at smaller, less complex projects," Aschman said in her presentation. However, they are less successful at delivering schedule-driven projects and complex megaprojects.

IPA has observed that businesses are more risk-averse today. Few companies are investing in new technology projects. Aschman also said that businesses are more averse to project cost risk, which is leading to rampant overestimating on the part of project teams. "IPA is seeing a highly punitive culture around cost growth, which is driving overestimating across the board."

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IPA improves the competitiveness of our customers through enabling more effective use of capital in their businesses. It is our mission and unique competence to conduct research into the functioning of capital projects and project systems and to apply the results of that research to help our customers create and use capital assets more efficiently.

IPA Community Service



Red Nose Day, United Kingdom

Employees with IPA's Europe, Middle East, Africa, and Russia regional office in Reading, United Kingdom, above, joined the Red Nose Day fundraising campaign in the United Kingdom this year. The annual fundraising campaign raises millions of dollars annually for poor communities and not-for-profit groups in the United Kingdom and around the world. IPA donated the money it collected to YoungMinds (www.youngminds.org.uk), which is committed to improving the emotional wellbeing and mental health of children and young people.



Habitat for Humanity

IPA North America corporate and regional office staff based in Ashburn, Virginia, lent their time and energy to help build a home for a local family sponsored by the not-for-profit group Habitat for Humanity. As the group's website, www.habitat.org, states, Habitat for Humanity creates opportunities for affordable homeownership that "frees families and fosters the skills and confidence they need to invest in themselves and their communities."



IPA In the News

IPA staff have been featured in recently published articles and IPA research has been cited in recent articles also. Take a moment to check out online how IPA's work to improve capital project effectiveness is being reported on by industry and business publications.

- "Personality Matters for Project Managers," SPE's *Oil and Gas Facilities* news online, by Stephen Whitfield, May 31, 2017.
- "As Cost Overruns Plague Gulf Coast Projects, Owners Look for Answers," Greater Baton Rouge Business Report, by Sam Barnes, May 17, 2017.
- "Building Value from Every Dollar Spent," Oil & Gas Financial Journal, by Jim Nyquist, May 17, 2017.
- "Standardization Key for Project Industry," BreakBulk Events & Media, by Gary Burrows, May 8, 2017.
- "Short-Cycle Projects Key to Surviving the Downturn," SPE's *Oil and Gas Facilities* news online, by Stephen Whitfield, April 19, 2017.

Upcoming IPA Events & Presentations

June 12

2017 AACE International Annual Meeting

IPA Mining, Minerals, and Metals Business Area Manager Baqun Ding will speak about the creation and need for a uniform cost coding structure for the mining and minerals industry at the 2017 AACE International Annual Meeting in Orlando, Florida. Visit www.web.aacei.org for more information.

September 26-27

Cost Engineering Committee (CEC) 2017

The CEC is a working subcommittee under the Industry Benchmarking Consortium (IBC) that assists cost engineers by providing metrics and tools that offer an unbiased snapshot of Industry cost and schedule estimates and trends. The CEC focuses on all aspects of cost (or investment) engineering, including cost estimating, scheduling, and project control practices and metrics. For more information, contact IBC Director Andrew Griffith at agriffith@ipaglobal.com.

October 11

IPA at 2017 Calgary Energy Roundtable

IPA Chief Operating Officer Elizabeth Sanborn will be on a panel discussing how Canadian oil and gas companies can accelerate technological innovation, speed up commercialization, and restructure systems and operations for sustained productivity at the 2017 Calgary Energy Roundtable, Calgary, Canada. More information about the event is available at <http://energyroundtable.net/registration-calgary/>.

October 18

IPA Founder and President to Speak at Oil & Money Conference

IPA Founder and President Edward Merrow will speak at the 2017 Oil & Money Conference on the topic of project management in the oil and gas industry. He will discuss whether the industry has taken the opportunity afforded by the downturn in oil prices to improve the execution of major projects. The annual conference, presented by *International New York Times* and Energy Intelligence, will be held in London, United Kingdom. For more information about the event, visit <https://www.oilandmoney.com/om2017/51908>.

October 20-21

AACE International, Peru Section, 5th Congress of Cost Engineering

IPA Mining, Minerals, and Metals Business Area Manager Baqun Ding will speak about the creation and need for a uniform cost coding structure for the mining and minerals industry at the AACE International, Peru Section's 5th Congress of Cost Engineering in Lima, Peru. Visit www.aacei.org.pe for more information.

November 13-15

Upstream Industry Benchmarking Consortium (UIBC) 2017

The UIBC is solely dedicated to the exploration and production (E&P) industry. It provides an independent forum for each participating company to view key metrics of its project system performance. The consortium highlights Best Practices, reinforcing their importance in driving improvements in asset development and capital effectiveness. For more information, contact IBC Director Andrew Griffith at agriffith@ipaglobal.com.

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