IPA

Independent Project Analysis Newsletter

Independent Project Analysis, Inc. is the preeminent organization for quantitative analysis of capital project effectiveness worldwide. At IPA, we provide practices you can use to ensure your success.

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Inside this issue:

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Cost Savings Through Smart Staffing

Sarah Sparks, Product Champion for Project Organization and Team Analysis

Site project organizations can reduce their project costs by an average of 7 percent by having more owner participation in their project groups.

A recently completed IPA study, *Smart Staffing Your Site-Based Organization*[1],concludes that top performing sites can accomplish more work for less money through a "smart staffing" strategy that involves greater owner staff participation.

A comparison of staffing strategies at two sites—Sites A and B—helps illustrate the smart staffing strategy. The two organizations are based at manufacturing plants located within 400 miles of one another. Both are in the same industrial sector and execute similarly sized project portfolios.

As shown in ***Figure 1***, Site A had a staff of 19 full-time equivalents (FTEs) executing projects, covering all key functions with owners including conceptual design engineering, cost estimating, scheduling/planning, and construction management. All 19 FTEs were owner personnel. This site had well-developed project teams, with complete functional representation and objectives that were clearly communicated to all team members. This translated to well-defined projects that were executed according to plan, and achieved better than average cost competitiveness.

In contrast, Site B had significantly more staff for the same size portfolio, with 41 FTEs. Despite having more staff, very few were owners—there were only nine owner personnel while the remainder were agency (third party) staff. This meant project teams at Site B were often missing owner representation from one or more key functions, causing projects to be ill-defined. The projects experienced a significant number of changes in execution, were not cost competitive, and slipped their schedule targets significantly.

The Site A-B comparison shows how a reliance on agency personnel actually drives staffing up. In other words, it takes more agency personnel to do the same job as owner staff. Furthermore, this abundance of agency staff actually does the same job *less effectively* than owners, as shown by the inferior project performance of Site B relative to Site A.

1 Sarah Sparks and Lucas Milrod, IPA, IBC 2013, March 2013

Continued on page 2

Continued from page 1

	Site A	Site B
Full-Time Equivalents (FTEs)	19 FTE	41 FTE
Total Organization Staffing	Owner: *100%* Agency: *0%*	Owner: *22%* Agency: *78%*
Key Functions Filled By Owners	*100%*	*40%*
Team Development Index	*Good*	*Poor*
Front-End Loading Index	*Good*	*Poor*
Cost Index	*0.92*	*1.11*
Execution Schedule Slip	*22%*	*72%*

Better than Industry | Industry Average | Lagging Industry

Figure 1. Comparison of Staffing Strategies and Key Project Drivers and Outcomes Metrics for Sites A and B

Why is owner staff typically more effective than agency staff?

First, owner staff has a greater stake in project performance. There is an incentive to consistently deliver excellent projects. Second, agency staff has more difficulty scoping a project that meets the business needs. It is harder for them to get input from stakeholders because they have fewer contacts within the organization. Third, the rate of turnover with agency staff tends to be higher than with owners, meaning organizations with high agency staffing have fewer people trained and experienced in the work process. Finally, agency staff still requires owner oversight. Many organizations hire agency staff with the belief that it will save them money on the overhead associated with owners. However, agency staff still requires owner supervision, so hiring a number of owners is often necessary for this purpose. In the end, organizations that rely heavily on outsourcing to staff their organizations end up with significantly more—and less effective—staff than those organizations composed largely of owners.

Leveraging a high percentage of agency resources does not save money; ultimately you pay with less effective projects.

An in-depth assessment of a site's staffing, including resource requirements based on the annual portfolio, is included in our Organizational Effectiveness (OE) assessments. To learn more about the research described or any of our organizational effectiveness products or research, please contact ***Sarah Sparks*** at ***ssparks@ipaglobal.com***.

Professional Profile: *Sarah Sparks, Ph.D., Associate Project Analyst*

Sarah joined IPA in July 2011 and she currently serves as Project Organization and Team Analysis Product Champion and Associate Project Analyst. As the Product Champion, Sarah leads the Project Organization and Teams Group at IPA, has performed several site and system organizational effectiveness (OE) assessments, and has led several research studies related to organizations. As Associate Project Analyst, she has analyzed capital projects across a number of sectors, including refining, chemicals, pharmaceuticals, and metals. These projects have ranged in size from $250k to over $1 billion. She has also participated in and led a number of site and system benchmarkings.

Before joining IPA, Sarah worked for a year as a postdoctoral teaching fellow at Stonehill College in Easton, Massachusetts, where she taught General Chemistry and Polymer Chemistry.

Sarah holds a Ph.D. in Organic Chemistry from Rutgers, the State University of New Jersey in New Brunswick, New Jersey, and a BS in Chemistry from Union College in Schenectady, New York. She is a member of the American Chemical Society and has authored several peer-reviewed publications.

Project Organization & Team Services

Are you familiar with the suite of organization and team products offered by IPA and how they integrate with standard products like Project Evaluations and Benchmarkings? Are you aware of IPA's capabilities in organizational research?

IPA offers a suite of products designed to evaluate if capital project organizations and teams are set up to deliver successful projects. For capital project systems, IPA can evaluate organizational structures, work processes, staffing levels, and overall functionality. For capital project teams, IPA can determine whether team staffing levels are adequate and include the right people, as well as evaluating team functionality and effectiveness.

Need insight into a unique project organization or team staffing issue? Contact IPA about customizable organizational effectiveness research services.

IPA products include:

Organizational Effectiveness Assessments

Compare key elements of an organization against Industry and Best Practices, and provide specific recommendations for organizational effectiveness improvements.

Functionality Evaluations for Plant-Based Systems

Gauge the perceptions of project professionals, and diagnose organizational processes and use of Best Practices to achieve successful project outcomes.

Staffing Assessments

Determine if a project is adequately staffed with sufficient key functions to succeed, compared to projects of a similar size and scope. Available for projects from $10 million to above $30 billion.

Team Functionality Evaluations

Assess whether a project team has the information it needs and is functioning effectively to deliver successful project results.

Customized Studies

Provide clients with answers to specific questions about their organizational effectiveness, team staffing structure, and work processes.

For more information, contact *Sarah Sparks,* Product Champion for Project Organization and Team Analysis, at *ssparks@ipaglobal.com*.

Follow IPA on LinkedIn at *www.linkedin.com/company/independent-project-analysis*

Do You Have the Discipline to Follow the Rules?

Talking Governance & Gatekeeping with IPA's Paul Barshop

In a recent interview, IPA Chief Operating Officer Paul Barshop explains what motivated him to create the IPA Institute's Gatekeeping for Capital Project Governance education seminar. He also discusses how the seminar was developed to benefit individuals with varying levels of experience.

Tell us about IPA's experience with project governance and gatekeeping

As the use of a stage-gate process has increased, companies have correspondingly turned their attention to governance and gatekeeping. The stage-gate process is only as effective as the rules that govern its operation, especially in relation to how the gatekeeping decision is made. Without effective gatekeeping, the whole system falls apart.

IPA completed its first formal research study on gatekeeping in 2008. Since then, I and others at IPA have expanded our research work to cover the broader subject of project governance. Our goal is to help our clients understand how governance and gatekeeping should work and how it needs to be managed.

Who are some of the key players in the gatekeeping process?

Gatekeeping involves a whole cast of characters, which is one reason why its effective implementation can be difficult. Gatekeeping answers two basic questions: (1) Are we ready to proceed to the next stage, and (2) should we proceed to the next stage? Think about all the functions within a company that are involved in answering those questions. The most obvious is the business sponsoring the project. Operations, a key stakeholder, must be aligned with the asset's scope and design; Finance has to sign-off on the cash-flow requirements; Portfolio Managers have to agree that the project's business objective is in line with long-range business strategy; Engineering must endorse that the project's strategy and current level of definition will yield reasonably predictable results. This isn't even an exhaustive list.

What are common reasons for governance and gatekeeping failures?

Project governance fails when its components are out of balance. Think of project governance as a set of checks and balances put in place to ensure project decisions are weighed carefully and that project assessments are rigorous. When the system gets out of balance, the results are suboptimal.

For example, a critical role of the businesses within a corporate structure is to identify capital projects that will increase shareholder wealth. However, human nature, being what it is, causes business managers to be overly optimistic about the prospects of capital investment. There has to be a counterbalance to this business optimism, otherwise businesses will take on too much risk in the pursuit of profits. That counterbalance is an independent group—often part of corporate management—that is responsible for deciding if further investment is warranted. Said another way, this "investment committee" is meant to prevent the authorization of funds for projects with business cases that overstate the expected return on investment. However, if the investment decision process is so onerous or demands a very narrow range of outcomes before a project can be approved, the company will be too risk-averse and pass on projects that would have otherwise delivered positive returns. Striking a proper balance and maintaining it over a long period has proven to be very difficult for many companies.

IPA works with companies in many industries, from mining, minerals, and metals, to petroleum exploration and production, to food and consumer products, and others. How are differences in approach addressed in the seminar?

Overall, governance and gatekeeping does not differ much in form by industry. The questions asked and

Continued on page 5

Continued from page 4

answered at each stage gate are about the same. What is different is the information developed and used for project decision-making. For instance, the viability of a petroleum or minerals production project is highly dependent on the quality of a reservoir or resource. For specialty chemicals, assessing customer preferences for certain product characteristics is a key input to determining the attractiveness of the project. In both cases, the potential revenue from the investment is a key parameter in deciding whether to continue with the project. The course material we bring to each training session is general enough to cover all industries, but contains specific examples tailored to different industries.

Tell us about the research study on capital project governance that you presented at the Industry Benchmarking Consortium (IBC) in March 2013.

The study I presented at the 2013 IBC, The Dysfunctions of Capital Project Governance Boards, delved deeper into the subject of steering committees and how these committees function. Steering committees are groups of managers that, as the name suggests, give projects direction. These committees supervise project teams and in many cases endorse projects prior to the investment decision. The study looks at the strengths and weaknesses of steering committees and examines some practices for making them work better.

You've led this seminar four times now in 2012 and 2013. Who benefits the most from the seminar, beginners, or those with previous gatekeeping experience? And what have you enjoyed most about teaching the seminar?

One of the hardest things about developing the course was preparing the material for people with a wide range of experience and backgrounds. The material is broad, but I try to cater more to the experienced practitioner by emphasizing areas and roles in governance and gatekeeping in which they are likely to be less familiar.

It is always fun to talk to people who are involved in governance. Their backgrounds span the gamut from making the investment decision, to doing assurance reviews, to working on project teams. Because governance and gatekeeping can be organized in different ways and still produce good results, discussing the merits of different structures always surfaces some interesting issues. We get some great dialog between participants, which really adds to the value of the session.

We're almost out of time, so we'll leave you with one last question. Is there any advice that you can offer up to individuals involved in the gatekeeping process?

That's a good question. Governance and gatekeeping break down when people do not know what their roles are. And so, my advice is, if you're new, to learn the company's rules and the reasons those rules are in place. For example, do you know why it is important for the project sponsor to give the project team clear business objectives to work on? If you know why things are important, you are more likely to follow the rules.

If you are more experienced, the thing you've got to remember is people around you may not have as much experience as you do. So, one of the things you continually need to do is educate others. You may have 20 years of project experience, but members of the team whose work you are reviewing may only have one or two projects under their belt. You need to be patient with them, explain their roles, and help them out along the way.

We thank Paul Barshop for sharing his knowledge and insight on capital project governance.

In 2014, the ***Gatekeeping for Capital Project Governance*** seminar will be held:

May 20: Rio de Janeiro, Brazil	August 5: Santiago, Chile	August 12: Johannesburg, South Africa
September 23: Gold Coast, Australia	October 21: Calgary, Canada	

The Gatekeeping course can be customized to suit your company's training objectives and delivered at an in-house site. For more information, please visit: ***www.IPAInstitute.com***.

E&P Studies Presented, Ideas Shared at UIBC 2013

Geoff Emeigh, IPA Staff Writer

Despite industry turbulence in the form of increased project costs and demand for engineering talent, there are ways for Exploration and Production (E&P) owner companies to mitigate market instabilities and improve project outcomes.

At IPA's recent ***Upstream Industry Benchmark Conference (UIBC)*** near Leesburg, Virginia, representatives of 21 owner companies gained insights into project practices that can strengthen project planning through Front-End Loading (FEL). IPA analysts presented study outcomes relating to the types of business definition, project scope, and engineering obstacles owner companies and their project teams should be aware of as they pursue positive net present value projects. Participating companies found out how their own collective set project benchmarks, as kept in IPA's database, stack up against their Industry peers.

The goal of the UIBC is to support continuous E&P Industry improvement by measuring and comparing project performance, conducting research, identifying Best Practices, and sharing those practices across the industry, said Neeraj Nandurdikar, IPA E&P Business Area Manager. Conference attendees are also introduced to tools developed by IPA to assist with project planning and decision-making activities. At the end of the conference, owner company representatives are familiar with quantifiable links between project practices and outcomes to foster fact-based management decisions, not ones based on opinions, Nandurdikar said. "Ultimately, our hope is to help foster owner project organizations that create business value."

New IPA studies presented at the conference included:

- ***An approach to redesigning wells construction front-end loading:*** The study found that current wells asset and construction planning activities are too limited. Companies should expand their well project planning practices, such as involving well program planners in FEL 1 and identifying the work necessary for asset sanction separately from the activities to spud the wells.
- ***The portfolio management problem for E&P:*** Recognizing that portfolio management is fundamental to delivering effective capital projects, the study suggests criteria for selecting and deselecting E&P opportunities and addresses portfolio management barriers, including difficulties in aligning the hand-over process between exploration and development teams and management teams at the FEL 1 Gate.
- ***Approaches to managing oil and gas developments operated by other organizations:*** Looking beyond IPA's traditional focus on owner companies' project organization and planning practices, the study looks at partnership arrangements, including the selection and oversight of projects operated by others.
- ***The anatomy of schedule slip for E&P projects:*** What causes E&P projects to slip in schedule, and what contributes to later than anticipated first oil dates? IPA Institute Director Andrew Griffith finds a cascading effect that starts with early engineering schedule slip.

Based on discussions among UIBC attendees during the 3-day conference, the conclusions and practices highlighted in the studies accentuate many of the project challenges facing the industry today and in the foreseeable future.

The E&P supply chain "is in significant stress," and market uncertainties, particularly the potential for falling global oil prices, will likely make it more difficult for E&P projects to deliver even marginal results, IPA Founder

Continued on page 7

Continued from page 6

and President Edward Merrow told UIBC attendees in a keynote address. Prices going into projects increase every day. Capital expenditures are on a "relentless climb."

As part of the conference's knowledge-sharing theme, Industry representatives delivered presentations on the processes their companies have adopted to boost project performance. Representatives from Statoil, Marathon Oil, BP, Nexen, and Chevron also participated in two separate panel discussions, one addressing the competency issues relating to the E&P engineering workforce and initiatives to train future project engineers, and the other on what their companies are doing to compensate for weaknesses in the E&P supply chain.

Additional UIBC studies completed last year, but still relevant to E&P industry issues today, were presented at this year's conference also. These studies centered on practices to reduce resource promise estimate (RPE) volatility respective to reservoirs; evaluating floating production, storing and offloading (FPSO) vessel project performance; understanding root causes to disappointing project outcomes; and examining challenges to improving E&P project systems.

Please contact IPA for additional information on any of the UIBC studies and to learn how your company can participate in UIBC 2014.

Staffing Assessments for Large Refining, Chemical, and Distribution Projects

Lucas Milrod, Research Analyst, Teams & Organizational Research

IPA has developed a Refining, Chemical, and Distribution staffing database and expanded its capability to assess the team size and composition of large projects. This allows us to provide owner companies with a set of benchmarks that address how an owner should staff a team based on the unique characteristics of the project such as scope, size, and location. Benchmarks are provided for functions and the entire team across FEL 3, execution, and commissioning stages.

The assessment can be applied across a project's life cycle; projects that are in development stages can use the assessment for guidance in building their team for the next stage, while completed projects can use the assessment to diagnose problems or issues related to the team. Refining, Chemical, and Distribution projects greater than $350 million US can be assessed.

Figure 1 provides a list of the standard functions that are evaluated as part of the team staffing assessment. These functions are generally influenced by things other than scope, such as size and location. There are several additional functions that are evaluated based on the scope of the project.

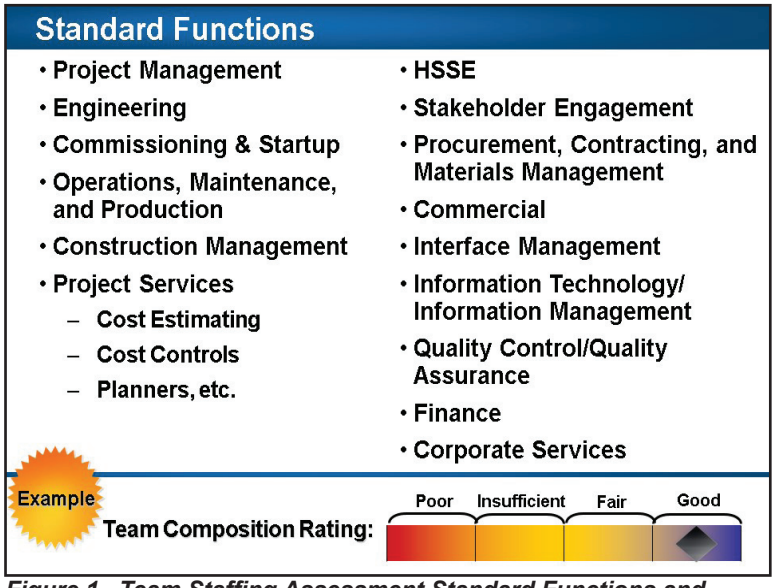

Figure 1. Team Staffing Assessment Standard Functions and Rating Scale

Figure 1 also provides an example of an overall team composition rating. In addition to function and team benchmarks, a similar rating is provided for the team for each stage of the project being evaluated.

For additional information, please contact *Sarah Sparks*, Product Champion for Project Organization and Team Analysis, at *ssparks@ipaglobal.com*.

Research Corner:

Updates for IPA's Current Research Initiatives

Understanding the Drivers of Rising Owner's Cost in the Oil & Gas Industry

Today's landscape in which oil and gas projects are executed is a difficult one. Projects are complex, much larger, executed in frontier regions and done against a backdrop of demographic and supply chain constraints. Yet, the number of projects continue to increase leading to significant sector inflation. Once such area of inflation is Owner's Costs. At the request of several clients, IPA launched a study to determine what is driving owner's costs in the oil and gas exploration and production industry. This study will establish a common basis for comparing owner's costs, identify trends and drivers, and test correlations between higher owner's costs – either in its entirety or by category - and project outcomes. Companies are welcome to participate in the ongoing E&P study and research will kick-off for other industries as soon as a sufficient number of participants sign on.

Neeraj Nandurdikar, Business Manager for Exploration & Production: ***nnandurdikar@ipaglobal.com***

Global Equipment Procurement for Capital Projects

IPA is soliciting interest in a study that aims to advance Industry's understanding of the current trends and practices in equipment procurement for capital projects. A key focus is to evaluate the total cost of procurement in various global regions, taking into account equipment prices, the costs associated with transportation and setting up and maintaining regional procurement organizations, and other costs tied to addressing potential quality problems. IPA will also assess how companies' organizational structures, procurement approaches, contracting strategies, and other purchasing practices and strategies affect procurement effectiveness. The study results will help companies devise more-effective equipment sourcing strategies. IPA is currently forming the study group. Interested companies can still request the study prospectus.

Natalia Zwart, Business Manager for Chemicals, Life Sciences and Nutrition: ***nzwart@ipaglobal.com***

Gulf of Mexico (GOM) Decommissioning

The purpose of the GOM Decommissioning study is to pool the learnings of decommissioning projects in the GOM from several operators and distill them into Best Practices, identify root causes of the poor outcomes, benchmark company performance against Industry as a whole, and guide later projects on cost and schedule planning. All of the data needed for the study analysis has been received and work is underway. We anticipate delivering results within 6-8 weeks to the study participants. The study remains open to additional participants.

Jonathan Jordan, Study Principal Investigator: ***jjordan@ipaglobal.com***

Supply Chain Risks to Large Projects in the U.S.

In recent years, natural gas has become increasingly competitive in the United States, leading to a glut of announced capital projects. These projects are likely to strain capital project supply chain resources, notably engineering services, equipment vendors, and construction services, as well as regulatory agency permitting bandwidth. IPA has completed Phase I of its U.S. capital investments "hot market" study, which explored the historical effect of a strained supply chain on capital projects. Work has begun on Phase II and will investigate which supply chain elements are likely to be the most vulnerable in the coming market. Using lessons learned from successful projects in previous hot markets, the study's second phase will examine how companies may better mitigate risks associated with overwhelming project supply chain demand versus supply. The study is open to additional participants. Phase II is due to be completed by the first quarter of 2014.

Kristin Lewis, Study Principal Investigator: ***klewis@ipaglobal.com***

Continued on page 9

Continued from page 8

Permitting in the U.S.

Companies can expect already complex and time consuming U.S. permitting requirements to become even more burdensome, especially with the implementation of new environmental regulations. As a consequence, companies are being forced to disrupt well-established engineering work processes to ensure that sufficient engineering design is done early in a project's life cycle. IPA plans to examine the effect the changing U.S. permitting landscape has on a project's Front-End Loading (FEL) engineering work processes. The study will also identify ways to alleviate permitting headaches. IPA is currently soliciting additional client input for this study and research work will begin in summer 2014.

Andras Marton, Business Manager for Hydrocarbon Processing & Transportation: ***amarton@ipaglobal.com***

Benchmarking Tank Maintenance

At the request of several clients in the refining and transportation/logistics sectors, IPA has initiated a study to compare the cost and schedule competitiveness of tank maintenance programs. Companies in these sectors must continually clean, inspect, and repair their numerous tanks. These projects do not generate revenue, but can be quite costly to execute. Further, they typically require taking tanks out of service. Hence, executing tank maintenance efficiently is vital. This study will identify the best metrics to use to gauge competitiveness and allow participating companies to compare their metrics (e.g., $/barrel) and approaches versus industry norms. IPA started data collection for this study in October 2013. The study remains open to additional participants.

Josh McClellan, Study Principal Investigator: ***jmcclellan@ipaglobal.com***

Benchmarking Allocation of Sustaining Capital

IPA's multi-client study investigating sustaining capital allocation practices and expenditure levels in the Mining, Mineral, and Metals (MMM) sector is now complete and it is expected that the draft outcomes will be released to the participating organizations in mid-December. After careful analysis, data normalization, and scrutiny, the study established recent sustaining capital expenditure norms relative to key economic indicators such as asset value and net annual depreciation value relative to design throughput on a facility and commodity basis. In addition, the study investigated the impact of growth capital and maintenance expenditure on sustaining capital expenditure as well as the impact of planning and development methods and practices. The second phase of the study will seek to expand the commodities base and range of operating assets and is expected to commence in Q1, 2014.

Petros Kapoulitsas, Study Principal Investigator: ***pkapoulitsas@ipaglobal.com***

Improving Mining, Minerals, and Metals Operating Cost Estimates

Recently completed mining, minerals, and metals (MMM) capital projects have seen significant net present value (NPV) erosion because of misestimated operating costs. Recognizing that early operating costs are often poorly estimated and play a significant factor in driving NPV, IPA seeks sponsors for a planned study focusing on the development of accurate MMM operating cost estimates. Specifically, the study will diagnose the causes of poor estimating. Inadequate review and validation, poorly understood operating regimes, and productivity optimism are among the additional issues that will be examined. The study will kick-off in April 2014.

Swati Bhat, Study Facilitator: ***sbhat@ipaglobal.com***

Continued on page 10

Continued from page 9

Standardized Cost Coding Structure for the Mining and Mineral Processing Industry

The global mining and mineral processing industry currently uses a variety of company-, region-, and project-specific cost coding structures for major projects. As a result, making comparisons, collecting and collating historic data, and benchmarking are difficult. A standard cost coding structure for the industry could provide significant benefits in estimate preparation, estimate validation and comparison, and project control development and execution. The value of implementing a common coding structure has already been proven with the availability and use of the NORSOK uniform coding structure in the oil and gas sector.

Over the past several months, several major mining and mineral processing companies and engineering contractors have expressed an interest in working together with IPA to establish a common cost coding structure. The study will kick off in December 2013 and the first industry study participants steering committee meeting is planned for February 2014. The study remains open to additional participants.

Christian Yip, Study Facilitator: ***cyip@ipaglobal.com***

Surveying Asian Company Views on Capital Effectiveness

IPA has recently surveyed several Asian companies to gather information and understanding of how these companies view capital effectiveness. Survey questions included:

- What are the key success criteria for capital projects in your company?
- How does your company measure competitiveness?
- Where are your challenges?
- Are you implementing continuous improvement efforts for your capital projects?
- How do you view your company's future for capital investment in light of the current economic situation in Asia?

Despite current economic uncertainty in Asia, driven by the slowdown of the Chinese economy, over 50 percent of our survey respondents indicated that their companies are more likely to increase capital spending in the near future. In this survey, construction safety (unsurprisingly) was noted as the top success criterion. The survey also indicated that Asian-based owners are placing importance on low-cost assets and valuing low-cost over cost predictability. Despite the general agreement that continuous improvement is an important element to a successful capital project system, only about 60 percent of the Asia-based owners that completed the surveys are implementing any continuous improvement program to the capital project system (compared to 100 percent of the non-Asian owners).

We intend to distribute the survey to a wider set of Asian-company representatives. If you are interested in participating in the survey and viewing the results please contact *Christina Yip* at *cyip@ipaglobal.com*.

Subscriptions & Publications Update

IPA Western Canada Capital Projects Journal

The ***IPA Western Canada Capital Projects Journal*** represents a continuous research program aimed at challenges facing capital projects in Western Canada. IPA's Western Canada database now includes 477 projects and we have added 31 projects since our previous journal. The second edition delivered to subscribers included the following highlights:

- ***Project Performance Measure (Metric) Comparison for the Period:*** IPA took a close look at schedule predictability in Western Canada. It seems schedule predictability takes precedence over cost predictability in Western Canada, but why? An emphasis on schedule is not supported by financial metrics.
- ***Managing Projects in a Labour-Short Environment:*** The beginning of a Western Canada modular construction research series is provided. It is a commonly held belief that construction safety performance is better on projects utilizing modular construction. However, the IPA database does not entirely support this perception.
- ***Western Canada Technology Developments:*** This edition focused on tailings projects and discussed how advances in technology may reduce the need for future tailings projects and presented cost capacity relationships associated with oil sands tailings projects. The next edition will focus on LNG projects.
- ***Regulator's Corner:*** A recent Supreme Court of Canada decision on substance abuse testing in the workplace was examined. What implications does this ruling have for companies in Western Canada? What information from the IPA database can shed light on this ruling?
- ***EPC Discussion:*** Labour productivity and improving labour productivity is a popular topic in Western Canada and is the subject of this section. Labour productivity can be influenced and controlled by practices employed by the owner. Better execution planning can yield improved labour productivity.

Business Professionals' Capital Projects Journal

The ***Business Professionals' Capital Projects Journal*** has completed its first year and based on subscriber suggestion, we will begin a new series in 2014 focused on the ***IPA15***. A wide range of metrics and analysis will center on the capital projects of 15 owner clients IPA has been continuously supporting over the years. The aggregation of these metrics will provide a unique perspective on the capital project market. First, we will explore the typical project portfolio–size distributions, geographical locations, use of new technology, and contracting strategies will be reported and examined over time. Second, the ***IPA15*** will provide an indication of market activity. The spending patterns of these companies likely foreshadow overall market trends. Third, we will analyze the relationships between the ***IPA15*** and various publicly available trends such as manufacturing utilization rates, commodity prices, stock related information, etc. We expect business professionals will use this information to better understand the capital projects marketplace. It is not just doing the right project well, it is also important to do the right project at the right time.

EPC Market Forecast Newsletter

EPC Market Forecast Newsletter will begin its seventh year in 2014 and we will facilitate much more direct interaction among subscribers. For example, IPA will host a ***Subscriber Network*** conference call to discuss prior editions and suggestions for future editions. A common use of the information is to estimate the escalation line item in capital project cost estimates. A discussion among users may result in a different way of delivering the historical and forecasted data. And, some regions may be dropped and others added. Please plan to participate in the ***Subscriber Network*** in the near future.

For further information, about IPA's publications and subscriptions, please contact *Dean Findley*, Director of Subscription Services, at *dfindley@ipaglobal.com*.

CEC Members Gather for 2013 Conference

Geoff Emeigh, IPA Staff Writer

Capital project managers, engineers, and cost estimating specialists convened late this summer for IPA's 2013 Cost Engineering Committee (CEC) conference to find out how the CEC's updated metrics can be used by member companies to strengthen their cost and schedule estimating, review, validation, and project control practices.

During the conference held Sept. 17-18, 2013, in McLean, Va., IPA managers and project analysts delivered presentations to familiarize attendees with the latest CEC metrics. Attendees also received instructions on how the metrics, and accompanying analysis tools developed by IPA, can best be utilized to aid in business planning, scope development, and project definition.

"First and foremost, we provide CEC participants with the data—the cost and schedule metrics. Therefore, their companies' cost engineering organizations have access to the industry averages for estimate comparisons "and to get a better perspective on Industry," said IPA Associate Director and Cost Analyst Luke Wallace, who coordinated this year's conference.

The metrics also offer up an opportunity to quantify cost engineering trends over the last ten years. At the end of the conference, attendees leave with an unbiased perspective of industry cost engineering trends, based on data from IPA's database, Wallace said.

New to the conference this year was the introduction of a metrics framework. Wallace said the framework is designed to enable estimators to work through summary and detailed metrics so, they can judge what logic they should use when preparing their cost estimates. The conference is also a forum for cost estimators and business managers to review Best Practices with their Industry peers, Wallace said, noting a presentation by IPA Institute Director Andrew Griffith on the results of his recently completed analysis of planning and scheduling infrastructures and processes.

IPA Founder and President Edward Merrow delivered a keynote address highlihgting the partnership between the project estimating and benchmarking disciplines, and their key differences. IPA project analysts presented other findings based on the 2013 CEC metrics, including modular versus stick-built project cost, schedule, and predictability comparisons.

Also at this year's conference, attendees were briefed on the productivity of revamp projects more closely. They additionally learned about fabricated equipment cost trends and possible leading indicators of price swings.

Ninety attendees representing 26 CEC member companies participated in the conference.

Luke Wallace, IPA Associate Director and Cost Analyst

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ADVANCING PROJECT KNOWLEDGE

2014 IPA Institute Programs Schedule

To view full course descriptions, pricing, up-to-date registration details, and special discounts, please visit our website at www.IPAInstitute.com

Public Courses

Practices for Shorter, More Cost-Effective Turnarounds (14 PDUs)

- February 11 - 12: The Hague, The Netherlands
- November 11 - 12: The Hague, The Netherlands

Megaprojects - Concepts, Strategies, and Practices for Success (22 PDUs)

- March 11 - 13: Belo Horizonte, Brazil
- April 1 - 3: Moscow, Russia
- April 15 - 17: New Orleans, Louisiana
- May 18 - 20: Dubai, United Arab Emirates
- June 17 - 19: Kuala Lumpur, Malaysia
- June 24 - 26: Calgary, Canada
- October 28 - 30: Perth, Australia
- November 18 - 20: Lima, Peru

Best Practices for Small Projects (22 PDUs)

- March 11 - 13: Las Vegas, Nevada
- May 6 - 8: Perth, Australia
- June 24 - 26: The Hague, The Netherlands
- October 14 - 16: Orlando, Florida
- November 11 - 13: Seoul, Korea

Best Practices for Mining Projects (16 PDUs)

- April 8 - 9: Santiago, Chile
- September 2 - 3: Sao Paulo, Brazil

Exploration & Production Project Best Practices (22 PDUs)

- April 22 - 24: Jakarta, Indonesia

Gatekeeping for Capital Project Governance (16 PDUs)

- May 20 - 21: Rio de Janeiro, Brazil
- August 5 - 6: Santiago, Chile
- August 12 - 13: Johannesburg, South Africa
- September 23 - 24: Gold Coast, Australia
- October 21 - 22: Calgary, Canada

Project Management Best Practices (22 PDUs)

- May 20 - 22: Houston, Texas
- June 10 - 12: Bogota, Colombia
- August 19 - 21: Macau. China
- September 23 - 25: Dubai, United Arab Emirates
- October 7 - 9: Moscow, Russia
- October 7 - 9: Salvador, Brazil

The goal of the *IPA Newsleter* is to provide you with research-based articles on current capital project issues, announce upcoming IPA events and IPA Institute course offerings, and introduce new and future IPA products that can improve your project management systems.

To subscribe to the IPA Newsletter and to view an archive of all past issues, please visit our website at *www.ipaglobal.com/Newsletter*.

To be kept informed regarding upcoming IPA Institute programs and courses being developed for capital project improvement, please join our mailing list at *www.IPAInstitute.com*.

IPA Events & Presentations for 2013 & 2014

December 11

IPA President to Present at Manchester Business School in the UK

IPA's President and CEO, Ed Merrow, will present at an event hosted by Manchester's Business School's Centre for Infrastructure Development as part of its Thought Leaders in Infrastructure series. Mr. Merrow's talk is entitled *"Managing Large-Scale Infrastructure: Lessons from the Private Sector."* For more information please visit ***www.mbs.ac.uk/about-mbs/news/***.

March 31 - April 3

IBC 2014 in Leesburg, Virginia

The Industry Benchmarking Consortium (IBC) 2014 provides an independent forum for each participating company to view its performance against other companies' performance. The consortium highlights Best Practices used and reinforces their use to improve capital effectiveness. During the consortium meetings, attendees learns ways to improve specific elements of capital project execution through presentations and face-to-face discussions. For more information regarding the content of the IBC, please contact ***Andras Marton*** at ***amarton@ipaglobal.com***.

June 11 - 12

UCEC 2014 Annual Meeting in The Woodlands, Texas

The Upstream Cost Engineering Commitee (UCEC), formally organized in 1999, is an approved subcommittee of the UIBC. The purpose of the UCEC is to improve upstream project and business results by providing metrics for better cost engineering. The UCEC metrics provide asset evaluation and concept development professionals with a better understanding of costs and schedules. The sixteenth annual UCEC meeting will be held in The Woodlands, Texas. For more information, contact ***Carlton Karlik*** at ***ckarlik@ipaglobal.com***.

September 16 - 17

CEC 2014 Annual Meeting in Tysons Corner, Virginia

The Cost Engineering Committee (CEC), formally organized in 1998, is an approved subcommittee of the IBC. The CEC focuses on all aspects of cost (or investment) engineering, including cost estimating, scheduling, and project control practices and metrics, with the goal of expanding the capability of the owner cost engineer. The primary vehicles for accomplishing these objectives are metrics, research, and practice sharing. The event is structured as a working meeting in which active participation is expected; the reward for participants is greater insight into the metrics and Best Practices. For more information, contact ***Luke Wallace*** at ***lwallace@ipaglobal.com***.

November 17 - 19

UIBC 2014 in Leesburg, Virginia

The Upstream Industry Benchmarking Consortium (UIBC) provides an independent forum for each participating company to view its performance against the performance of other companies. The consortium highlights Best Practices, reinforcing their importance in driving improvements in asset development and capital effectiveness. Consortium attendees learn ways to improve specific elements of capital project execution through presentations and interactive discussions. For more information, contact ***Neeraj Nandurdikar*** at ***nnandurdikar@ipaglobal.com***.

IBC Industry Benchmarking Consortium 2014

The 24th annual meeting of the IBC will be held March 31 to April 3, 2014, at the Lansdowne Resort in Leesburg, Virginia.

The Industry Benchmarking Consortium (IBC) is a voluntary association of owner firms in the process industries that use IPA's quantitative benchmarking approach.

The members exchange data, information, metrics, and lessons to improve the capital effectiveness of their project systems.

Agenda:

Monday

- The IBC begins with a metrics and statistics primer session, followed by highlighted research presentations from previous IBCs. Roundtable sessions will also be held to provide the opportunity for small groups of company representatives to discuss a topic of interest with facilitation by IPA.

Tuesday & Wednesday

- The centerpiece of each IBC is the sharing of outcomes and practices of the participating project systems. A plenary session will highlight overall industry trends and company metrics; breakout sessions will be held for individual industries
- Major research topics to be presented may include the following: *FEL 1 Process and Governance, and Organizational Best Practices*; *Classes of Facility Quality*; and *How Owners Should Control Engineering*
- IPA research will be complemented by presentations from member companies on relevant topics

Thursday

- Performance results and practices specifically applicable to site-based projects will be shared
- Site-based systems metrics and turnaround trends will be presented in addition to the following research topics: *Site Construction Contracting* and *Site Portfolio Management*

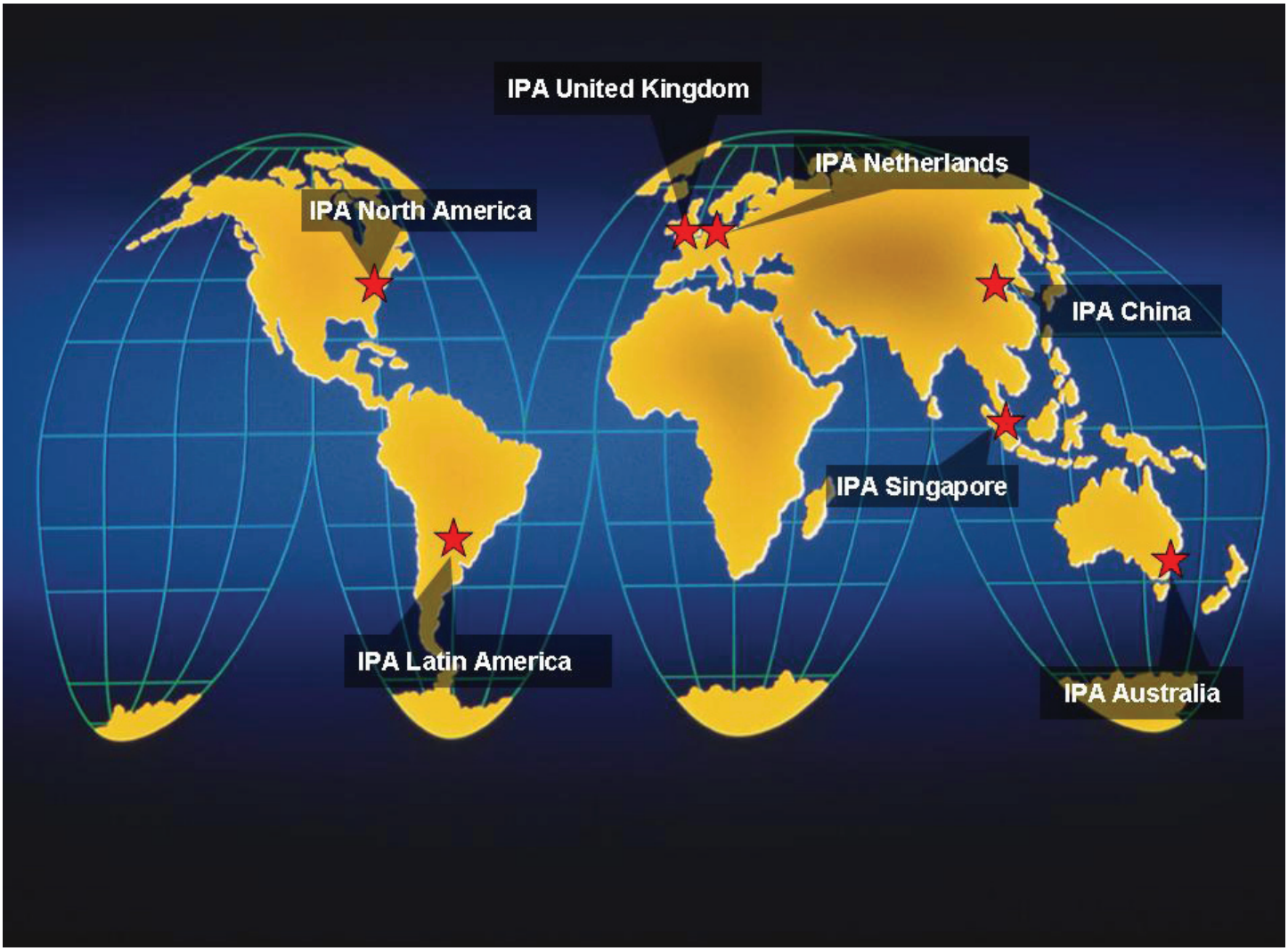
Edward Merrow, Founder and President
Paul Barshop, Chief Operating Officer
Elizabeth Sanborn, Regional Director, North America
Carlos Flesch, Regional Director, Latin America
Mary Ellen Yarossi, Regional Director, Europe
Allison Aschman, Regional Director, Asia Pacific
Kelli Ratliff, Managing Editor
Geoff Emeigh, Staff Writer

IPA
www.IPAGlobal.com

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.

THE IPA INSTITUTE
ADVANCING PROJECT KNOWLEDGE
www.IPAInstitute.com

The IPA Institute's mission is aligned with the overall IPA mission to improve the capital productivity of its clients. The programs offered provide a forum for in-depth understanding of key elements of the capital project process and how to apply these learnings to effect positive changes and improvements, resulting in the more effective use of capital.



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