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.

Volume 3, Issue 2 **June 2011**

Research Spotlight:
Best Practices for Successful Microprojects - What Is Really Important for Projects Less Than US$400,000?

Phyllis Kulkarni

Every manufacturing plant must execute dozens or even hundreds of very small projects in a given year to stay in business and maintain a safe work environment. Although these projects are small, a plant that defines and executes them well can save millions of dollars versus a plant that handles them poorly. Among the 200+ plants that IPA benchmarks, the average plant spends about $13 million each year to execute about 80 different projects under US$400,000. Although these projects are small, applying the appropriate work process can still lead to a competitive advantage.

Yet, sites frequently struggle with the correct approach to very small projects:

- ***Should we use the same work process that we use for larger projects?***
- ***Or should the work process be simplified?***
- ***How extensively can the work process be simplified without losing its value?***

To answer these questions, IPA has for the first time applied its methodology to statistically link project practices with performance on microprojects—sometimes referred to as minor projects, or capital work orders. For the meeting of the 2011 Industry Benchmarking Consortium (IBC 2011), Alex Ogilvie of IPA conducted a research study on *Best Practices for Microprojects: Creating Order in the World Under $400,000*.

By studying the 800+ microprojects in IPA's database and surveying 22 of the manufacturing sites represented by those projects, he was able to answer some common questions we hear about microprojects.

How Do Other Companies Handle Microprojects?

By surveying sites and examining the practices used on microprojects in our database, IPA observed an interesting range of approaches to microprojects, and identified which practices are correlated with superior outcomes.

First, each site in the study used slightly different criteria to define a microproject. For some sites, only projects less than US$250,000 are considered microprojects. For other sites, projects up to US$5 million can be considered microprojects and follow a streamlined work process.

Second, each site made different efforts to simplify the microproject work process. For example, the number of formal gates that microprojects need to pass through prior to and including authorization varies from company to company and even from site to site. Some sites have three gates, just as they would for a larger project, whereas other sites have a single gate. However, the most common approach is to have two gates. The data suggest that a work process with fewer gates is correlated with more cost-effective performance.

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Editor: ***Kelli L. Ratliff***
IPA-Newsletter@ipaglobal.com

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The level of owner involvement in microprojects also varies. Some sites staff the project manager and construction manager positions on microprojects with owner personnel, whereas other sites routinely outsource these functions to contractors. Some sites adopt a combination approach, using owner personnel when possible, and supplementing with contractor personnel as needed. The study identified a cost benefit of as much as 10 percent or more when using owner personnel on microprojects. IPA has observed the cost penalty associated with contractor personnel in these functions on larger projects, and this study confirmed a similar result for microprojects.

Last, a "single point of accountability" approach to microproject management drives better team development and project definition. Most sites follow this approach; however, about one-fourth of sites use a disintegrated approach, characterized by a hand-off from engineering project manager to construction project manager. These functions are individually responsible for their own phases, and may not even report to the same manager or department. The disintegrated approach is associated with poorer definition and team development.

Where Can I Draw the Line to Simplify My Work Process?

Given these varying approaches, many sites have two key questions. First, how do we properly define a *microproject*? And second, to what extent can the work process for microprojects be simplified? Based on the relationship between practices and outcomes, the IPA study defined a microproject as a project costing less than US$400,000 (today's dollars) that is not technically complex (no new technology, utilizes fewer than three engineering disciplines, and does not have multiple linked process steps). The study also quantified the level of optimization, or reduction, in work process that is appropriate for microprojects, and showed how such an optimization leads to more competitive results. It is critical that any reduction maintain the original intent of the work process.

Is Front-End Loading Important for Microproject Success?

In optimizing a work process for microprojects, what practices are essential to maintain? Does project definition, or Front-End Loading (FEL), influence project results in a similar way to merely "small" projects (up to US$10 million)? The answer is that the FEL practices that drive superior cost performance are slightly different for microprojects. For microprojects, resource coordination at the site level is critical. Applying formal software-based resource planning for site project portfolio management is associated with significantly better cost performance, even if individual microproject schedules are not resource loaded at the time of authorization. As shown in ***Figure 1***, resource coordination at the site level, combined with an individual microproject FEL Index

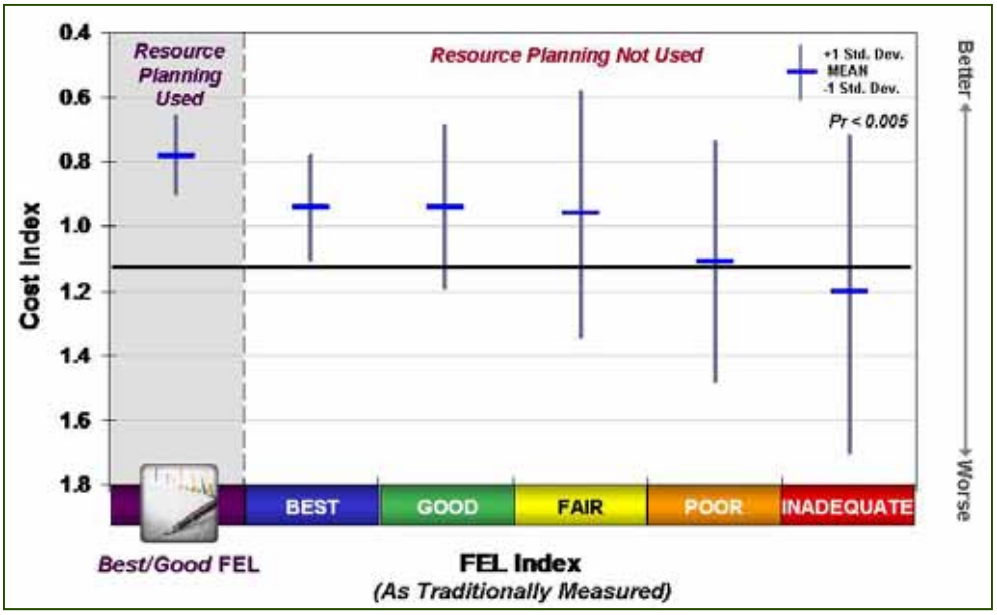

Figure 1. **Formal Resource Planning Drives Microproject Cost Competitiveness**

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of *Good* or better, produces a cost index that is 22 percent better than industry average. When resource coordination at the site level is not practiced, the improvement on average cost index of moving from a *Fair* FEL Index to *Best Practical* is much less pronounced.

Conclusion

For the first time, IPA correlated project practices with outcomes on the smallest of projects, or microprojects. We have identified key practices that drive microproject success, including how extensively the work process should be optimized and what FEL practices are most critical.

Are you wondering whether your microproject organization is structured for success? Looking for guidance in simplifying your work process for microprojects? Does plant management want to know if microprojects at its site are being executed competitively? For further information on evaluating your microprojects, please contact ***Phyllis Kulkarni***, IPA Plant-Based Systems Manager, at ***pkulkarni@ipaglobal.com*** or ***+1 (703) 726-5472***.

Professional Profile: *Phyllis Kulkarni, Manager Plant-Based Systems*

As Plant-Based Systems Manager, Phyllis oversees the worldwide business and technical development needs for the Plant-Based Systems business sector of IPA. Plant-Based Systems encompasses small project benchmarking, turnaround benchmarking, and licensing of IPA's FEL Toolbox.

Previous to her promotion to a managerial position, she served on IPA's Review Board for two years, reviewing projects for multiple IPA business areas. Before her position as a Reviewer, she was a Senior Project Analyst with IPA's Latin American Project Center (Centro de Proyectos Latinoamericanos) and was involved in the analysis of petroleum, chemical, and mining projects in Latin America, the U.S., and Spain. In addition, Phyllis has led megaproject assessments, site benchmarkings, turnaround evaluations, and analyses of exploration and production projects. In 2003, Phyllis presented the results of a research study that she led on Joint Venture projects at IPA's annual Industry Benchmarking Consortium (IBC). Phyllis was the Coordinator for IBC 2010 and 2011.

Prior to joining IPA in 2002, Phyllis interned as a translator for Repsol YPF in Buenos Aires, Argentina. Phyllis holds a B.S. in Languages and Linguistics from Georgetown University, Washington, D.C.

IPA China Project Management Forums

The IPA China Project Management Forum (CPMF) was formed in 2007. Forum members are representatives from more than 25 Chinese and Western owner companies operating in the resource development and processing industries within China.

Semiannual meetings organized and facilitated by IPA provide members with the opportunity to network and to share experiences, ideas, practices, and solutions for project system effectiveness in China.

Meetings consist of a mix of guest speakers, member presentations, dialogue, and workshops focused on a theme and agenda as agreed by the forum members.

For more information, please contact **Christina Yip**, Senior Project Analyst, at **cyip@ipaglobal.com** or ***+65 6567-2201***.

Chinese Design Institute (CDI) Engineering - *Managing Quality to Realize Benefits*

Christina Yip, Pei Hsing Seow, and Allison Aschman

IPA China White Papers

The following article summarizes a more comprehensive article scheduled to be released by IPA in June 2011 as part of a White Paper Series for China. The China White Paper Series will provide a view of the current status of the development, planning, organization, and related outcomes for capital projects in China. Upcoming White Papers will cover the following topics:

Managing CDIs

Key practices to ensure engineering quality and realize cost savings. The article summarizes common management practices used by owner companies to manage the CDIs, as well as recent trends identified in managing CDI engineering quality.

Project Planning and Development in China

This article highlights differences and similarities in Western-company and Chinese approaches.

Western-China partnership arrangements

A discussion of strengths, weaknesses, opportunities, and threats in these partnerships from both Western-company and Chinese perspectives.

Background and Opportunity

Many foreign enterprises have established a presence in China, and foreign investments continue to grow despite the recent global financial crisis. China continues to offer opportunities for significant cost savings; however, the savings may not materialize if the quality aspect of the capital project is not managed competently by project teams. In fact, management of the quality of engineering design—specifically, the quality management of the Chinese Design Institute (CDI)—is a commonly identified problem faced by most project teams that work for foreign enterprises.

All capital projects in China, whether fully Chinese owned or fully foreign owned, require the involvement of a CDI at some stage during the project life. At a minimum, the Chinese design approval or government permitting process requires that all engineering design documents be verified and stamped ("chopped") by a qualified CDI to ensure compliance with Chinese regulations.

Prior to 2005, most CDIs solely provided the "chopping" service required for foreign-invested capital projects to meet the government's approval requirement. However, as foreign enterprises gain more project and engineering experience in China, the work scope offered to the CDIs has increased, both (1) as means of a "project localization" strategy by foreign companies (which is viewed as an opportunity to save capital investment) and (2) as a strategy to overcome the lack of local knowledge of the design requirements from the global engineering companies. Subsequently, IPA has begun to observe that the responsibilities of CDIs are increasingly extending beyond simply "chopping" design documents. Typical tasks that foreign owner companies engage CDIs to perform include performance of Basic Engineering Design (BED), preparation of the design package for government approval (Preliminary Design Package, or PDP), and/or completion of detailed engineering.[1] On average, for Western companies performing projects in China, 45 percent of the total design is now performed by the CDIs. In some cases, experienced foreign owners in China are engaging CDIs as EPC/EPCm contractors for smaller projects that employ conventional technology.

With the expanding responsibilities of CDIs, the engineering quality from these institutions becomes more of a focus. Based on the general feedback received and the research conducted by IPA in assessing performance

[1] Christina Yip and Jian Kang, *Developing Successful Projects in China, December 2009.*

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of projects executed by foreign owners in China, expanding the work scope of CDIs does provide a cost savings opportunity (of up to 50 percent) because of more competitive local wages; however, if the engineering quality from the CDI does not meet the owner's requirements, the value of employing a CDI for engineering tasks will be offset by higher costs for rework. Historically, foreign enterprises have found it challenging to manage the design quality from CDIs; this is further exacerbated by the diverse nature of these institutions, which vary vastly in characteristics and quality.

We do not suggest that CDIs provide poor quality work. In fact, some foreign-invested projects have been able to successfully realize the potential savings from employing CDIs, without jeopardizing the long-term operability of the facility. This proves that foreign owners can actively manage the performance of CDIs to ensure that all the owners' objectives and interests are met.

The Right Strategies

There is no single perfect owner project management methodology that is applicable to all CDIs.

As noted previously, it is important to understand the significant differences between various CDIs in China; likewise, it is important to understand that different strategies may be required in managing the different CDIs appropriately. In general, CDIs can be categorized under four major grades or classes, with a focus on different industry specialties. CDIs that possess a Class A license have no restrictions on the project type or location of the facility, and are as such the most highly rated/ flexible. Quality, competency, and experience levels vary significantly among the classes and industry focus areas. In addition, recently some global engineering contractors have obtained the Class-A CDI license through joint-ventures and acquisitions, which increases the complications faced by owners in managing CDIs.

Considerations in developing customized CDI management strategies can include:

- **CDI internal quality procedures**
- **Contracting strategies (example: IPMT versus EPC/EPCM)**
- **Link of CDI with EPC contractor**
- **Use of single CDI versus multiple CDIs**
- **Project size**
- **Technology and IP protection**

In recent meetings of IPA's biannual China Project Management Forum (CPMF), participants identified common management activities and highlighted those that are generally applicable to working with all CDIs:

- **Build long-term relationships**
- **Develop and implement formal CDI selection process**
- **Negotiate terms and conditions of the engagement, with particular focus on quality**
- **Develop comprehensive owner's QA/QC plan**

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IPA's White Paper will provide a detailed view of the key practices within each of these general strategies that are shown to be effective in ensuring CDI engineering quality. A key conclusion from IPA research and from discussion among the CPMF members is that there is no substitute for owner involvement in all aspects of CDI management. Strong owner involvement - from careful pre-planning of CDI strategy and selection process well before a project begins to thorough engagement with the CDI and active monitoring of QA/QC - may appear to increase upfront and execution costs, but will enable the owner company to obtain maximum value from the CDI.

For information on the IPA China White Paper Series please contact Allison Aschman, Managing Director of IPA's Singapore Office, at **aaschman@ipaglobal.com** or ***+65 6567-2201***.

Author: *Christina Yip, Ph.D.*

Since joining IPA in 2004, Christina has led numerous benchmarking studies, individual project evaluations, and training workshops around the world for a wide range of industries and clients. She has evaluated over 100 projects ranging from US$0.5 million to over US$10 billion in size. Christina has led an industry-wide study on the performance of projects executed by Western owner-companies in China. In addition, she has coordinated IPA's project management forum in China since 2007 for over 20 owner companies (including both national Chinese and non-Chinese companies) with active capital investment interest in China. Christina's areas of expertise include project practices used in projects executed by wholly Western-owned companies, joint venture companies, and local Chinese-owned companies in China. Christina obtained a Ph.D. in Chemical Engineering (Mineral Processing), a B.E. (Hons) in Chemical Engineering, and a B.A. in Chinese and China Study, all from the University of Melbourne.

Author: *Pei Hsing Seow*

Pei Hsing joined IPA in 2007 and has evaluated various refinery and chemical plant projects in the Asia Pacific region within the Oil and Gas Downstream Processing and Chemicals sectors. Pei Hsing obtained a M.Eng in Chemical Engineering and a B.Eng (Hons) in Chemical Engineering from the National University of Singapore.

Author: *Allison Aschman, Ph.D.*

Allison joined IPA in 2000, and is currently the Managing Director of IPA's Singapore Office. Before her current role, Allison was the Business Manager for IPA's Chemicals, Life Sciences, and Nutrition business unit. Allison's areas of expertise include project definition work processes and Project Benchmarking, Best Practices for downstream projects, detailed work process evaluation, and customized workshops for processing industry capital work process Best Practices. Allison obtained a Ph.D. in Analytical Chemistry from Duke University in North Carolina and a B.S. in Chemistry from Bloomsburg University of Pennsylvania.

IPA Is Expanding Project Analysis Tools for Clients in Alberta

Over the past several years, IPA has been actively involved in project evaluations for clients with capital investments in Alberta, Canada. Project information has been collected on over 300 projects spanning more than 25 companies. One particular challenge has been projects using **steam-assisted gravity drainage (SAGD)** technology. Recently we have developed tools for improving our cost benchmarks for these projects. For example, capital cost has been related to the capacity of the central processing facility. These tools allow us to provide consistent cost per flowing barrel metrics. The range of central processing facilities (CPF) daily production extends from 10,000 barrels per day to 90,000 barrels per day. This range of daily production covers the vast majority of CPFs being constructed or planned. We are currently testing the model's applicability across this full range of production capacity.

Alberta oil sands projects recover bitumen from both mining and *in-situ* methods. Recovered *in-situ* bitumen typically ranges between 6 to 8 degrees API gravity. One of the common *in-situ* recovery methods is SAGD and consists of horizontal well pairs installed in a vertically offset configuration at the base of bitumen-rich reservoir. Steam is injected into the target formation to increase mobilization of the bitumen. The recovered bitumen-water mixture is pumped to the well pad prior to further processing.

The total facilities cost per flowing barrel is a high-level metric used to gauge initial project economics relative to existing and planned SAGD projects. The total facilities cost per flowing barrel includes costs for the CPF, field-related facilities (e.g., insulated infield flowlines, well pad costs, etc.), cogeneration facilities, water treatment, and other infrastructure-related costs.

For further information concerning IPA's oil sands and SAGD capabilities, please contact **Dean Findley**, IPA Regional Manager North America, at **dfindley@ipaglobal.com**; **Keith Mayo**, IPA Consultant at **kmayo@ipaglobal.com**; or **Tony Bryda,** Associate Project Analyst at **tbryda@ipaglobal.com**.

IPA President Ed Merrow Presented at the COAA Best Practices Conference in Edmonton

Ed Merrow, Founder and President of IPA, spoke at the opening keynote panel of the 19th Construction Owners Association of Alberta (COAA) Best Practices Conference on May 17, 2011, at the Shaw Center in Edmonton, Canada. The theme of the 2-day conference was "Global Competitiveness - What Is It Going to Take?" Mr. Merrow shared the panel with Dr. Mike Percy, Dean of the University of Alberta School of Business, and Ron Genereaux, President of the COAA.

Ed's speech, entitled "Restoring Owner Confidence in Alberta's Capital Effectiveness," focused on the success and failure of megaprojects in Alberta by seeking to answer some key questions:

- **Is Alberta peculiar for having so many large project failures?**
- **Why do large projects fail so often?**
- **Who can fix the problems? *(Who is to blame!)***

Ed also provided four megaproject practices that are essential for success. During the conference, Ed signed all available copies of his recently published book, ***Industrial Megaprojects – Concepts, Strategies, and Practices for Success*** (John Wiley and Sons). For more information about purchasing Ed's book, please visit **www.IPAGlobal.com**. To obtain a copy of this COAA presentation, please send your request to **IPAInstitute@ipaglobal.com**.

COAA Construction Owners Association of America

2011 Cost Engineering Committee (CEC) Highlights

CEC Mission: Improving the role and competency of cost engineering within Industry.

The Cost Engineering Committee (CEC) is beginning its thirteenth year and is open to all participating 2011 Industry Benchmarking Consortium (IBC) companies. The CEC is a working subcommittee under the general IBC membership with the goal of improving the competency and ability of the cost engineering departments and capabilities of the owner companies. The CEC focuses on all aspects of cost engineering, including estimating, scheduling, and project control practices. The primary deliverables include the publication of cost and schedule metrics as well as research, industry surveys, and practice sharing. The meeting is considered a working meeting in which active participation is expected. The benefit for participants is a set of industry standard cost and schedule metrics as well as greater insight into trends, challenges, and Best Practices for the cost engineering community.

The CEC Metrics program has evolved from a single report of summary metrics published in 1998 to seven metric reports covering a range of cost and schedule metrics. For 2011, we will update the entire set of metrics with recent industry data collected over the last 12 months. The CEC is also continuing its research in the field of cost engineering and project controls with research studies on Best Practices for scheduling and current industry trends, and linking the CEC metrics to Key Performance Indicators (KPIs).

For 2010, 32 companies participated in the CEC, which is two-thirds of the overall IBC membership. We expect a comparable amount of participation for 2011. In addition to the metrics and presentations, the CEC offers a significant networking opportunity to discuss Best Practices, as managed by the IBC's benchmarking code of conduct. CEC meeting attendees are typically leaders and/or managers of the cost engineering, estimating, and scheduling functions within their organizations, and participation from these internal organizations is recommended.

CEC DETAILS:

The 13th Annual 2011 CEC Annual Meeting will be held ***September 13 - 15, 2011*** at the ***Hilton Washington Dulles Hotel*** in Herndon, Virginia, United States.

The 2011 CEC conference is open to all IBC members in good standing. CEC member companies generally have an internal/owner cost engineering organization to support the company's capital project development process. In most cases, the CEC meeting is attended by cost engineering and controls professionals.

The cost is $21,000, which includes attendance for four people as well as hard and electronic copies of the metrics and conference proceedings.

For more information on the IBC Cost Engineering Committee, please contact **Robert Brown** at **rbrown@ipaglobal.com** or **Sue Salazar** at **ssalazar@ipaglobal.com**.

Upcoming IPA Events & Presentations for 2011

June 29 - 30

IPA to Present at the Construction Users Roundtable, Shanghai, China

Greg Ray, IPA's Director of Business Development in China, will present at the Construction Users Roundtable (CURT) International Member Meeting. The title of his presentation is "China Current Best Practices for QA/QC and Procurement." The conference is being held from June 29 - 30 in Shanghai, China and is open to all CURT Owner and Contractor Members and Owners who are interested in joining CURT. For conference details please visit **www.curt.org**.

July 27

IPA to Present at Biomass 2011, National Harbor, Maryland

IPA will present at the fourth annual biomass conference, Biomass 2011: *Replace the Whole Barrel, Supply the Whole Market* on July 27. Biomass 2011, hosted by the U.S. Department of Energy, Office of Energy Efficiency, and Renewable Energy's Biomass Program, will be held at the Gaylord National Resort and Convention Center at the National Harbor in Maryland. IPA's presentation is scheduled for the technical breakout session entitled *Investment Risks of New Technology Innovation – The Views of Venture Capitalists, DOE, and IPA*.

September 13 - 15

Cost Engineering Committee (CEC) 2011 in Herndon, Virginia

The purpose of the CEC, an approved subcommittee of the IBC, is to extend the IBC forum to cost engineering practices with a focus on cost and schedule metrics. By using these cost and schedule metrics and research findings, companies can improve their project and business results. For more information, please contact Robert Brown at **rbrown@ipaglobal.com**.

October 10

IPA President to Present at the IPMA World Congress 2011, Brisbane, Australia

Ed Merrow, President and CEO of IPA, will deliver the Opening Keynote Address at the 25th International Project Management Association (IPMA) World Congress 2011. The theme of this year's IPMA World Congress event is "Project Management - Delivering the Promise" and will take place from October 9 to 12, 2011 at the Brisbane Convention & Exhibition Centre, Queensland, Australia. For more information, please visit **www.ipma2011.com**.

November 14 - 16

UIBC 2011 in Tysons Corner, Virginia

The UIBC 2011 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. For more information, please contact Rolando Gächter at **rgachter@ipaglobal.com**.

The goal of the *IPA Newsletter* 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*.

THE IPA INSTITUTE
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2011 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

Establishing Effective Capital Cost and Schedule Processes (16 Professional Development Units)

June 28 - 29: San Francisco, California
October 4 - 5: Kuala Lumpur, Malaysia
September 13 - 14: Santiago, Chile

Exploration and Production Project Best Practices (22 Professional Development Units)

July 26 - 28: Rio de Janeiro, Brazil
December 6 - 8: Calgary, Alberta, Canada

Project Management Best Practices (22 Professional Development Units)

August 16 - 18: Santa Cruz, Bolivia
September 20 - 22: Beijing, China
October 11 - 13: Kuwait City, Kuwait
November 22 - 24: Johannesburg, South Africa
September 6 - 8: Singapore, Singapore
October 4 - 6: Houston, Texas
November 8 - 10: Buenos Aires, Argentina

Best Practices for Small and Plant Projects (22 Professional Development Units)

August 23 - 25: Houston, Texas
October 11 - 13: Las Vegas, Nevada

Best Practices for Mining Projects (16 Professional Development Units)

September 20 - 21: Belo Horizonte, Brazil

Megaprojects - Concepts, Strategies, and Practices for Success (22 Professional Development Units)

September 27 - 29: Houston, Texas
October 11 - 13: Brisbane, Australia
December 13 - 15: Shanghai, China
October 4 - 6: Lima, Peru
October 18 - 20: Calgary, Alberta, Canada
***Dates TBA*: Johannesburg, South Africa**

Contracting in the Changing World of Projects (12 Professional Development Units)

October 18 - 19: Rio de Janeiro, Brazil
October 25 - 26: Houston, Texas

Best Practices for Government Project Management (16 Professional Development Units)

November 1 - 2: Arlington, Virginia

Practices for Shorter, More Cost Effective Turnarounds (14 Professional Development Units)

November 29 - 30: Rio de Janeiro, Brazil

Updated and Redesigned IPA Institute Seminar:

Megaprojects - Concepts, Strategies, and Practices for Success

Redesigned Megaproject Seminar Now Offered!

The IPA Institute has redesigned its Megaprojects seminar, formally entitled *Executing Successful Large/Complex Megaprojects* to reflect IPA's ongoing research. Ed Merrow, IPA's Founder and President, led the latest megaprojects research seeking to reduce the high incidence of failure in megaprojects.

More than 300 megaprojects are included in IPA's proprietary Megaproject Database primarily from the petroleum, minerals, chemicals, and power industries. Each megaproject is characterized by over 3,000 project attributes that enable IPA to perform detailed analyses regarding the project phases, project management practices, and performance. This seminar integrates the root causes of megaproject success and failure with strategies to prevent failure for future megaprojects. The key topics explored in the seminar include the:

- Unique characteristics that define a megaproject
- Cost, schedule, and operability trade-off patterns for megaprojects
- Concept of megaproject shaping and development and specific shaping process steps
- Basic Data examples and why Basic Data are critical to megaproject success
- Required preconditions for a robust megaproject team and organizational complexity challenges
- Essential interactions between the scope development, shaping, and basic data development processes
- Megaproject definition challenges and critical project context areas
- Contracting strategies, owner participation, and contractor selection approaches
- Risk management practices and control elements critical to effective megaproject execution

The primary targeted audience includes business leaders, project directors, sub-project managers, and members of megaproject teams. Those who finance major projects, members of NGOs, and contractors should find the seminar valuable as well.

The first public delivery of the ***Megaprojects - Concepts, Strategies, and Practices for Success*** seminar in Kuala Lumpur (May 30 to June 1) was sold out of seats, even after nearly doubling maximum capacity. It was instructed by Mr. Merrow and Allison Aschman, the Managing Director of the Singapore Office. More offerings are still available for the following dates and locations:

September 19 – 21:	**South Africa (Johannesburg)**	**September 27 – 29:**	**USA (Houston, Texas)**
October 4 – 6:	**Peru (Lima)**	**October 11 – 13:**	**Australia (Brisbane)**
October 18 – 20:	**Canada (Calgary, Alberta)**	**December 13 – 15:**	**China (Shanghai)**

All participants who register right now will receive a copy of Mr. Merrow's book, ***Industrial Megaprojects – Concepts, Strategies, and Practices for Success*** (John Wiley and Sons). For more information or to register online, please visit **www.IPAInstitute.com**.

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.

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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Editor: Kelli L. Ratliff, IPA Institute Analyst. ***IPA-Newsletter@ipaglobal.com***

IPA North America

The IPA Institute
44426 Atwater Drive
Ashburn, Virginia 20147
PH: +1 (703) 729-8300
Fax: +1 (703) 729-8301

IPA Latin America

Rua Pasteur, 463-salas 1201/1202
Curitiba, Paraná 80250-080, Brazil
PH: +55 (41) 3028-9028
Fax: +55 (41) 3028-9024

IPA United Kingdom

Wellington House, First Floor,
Worton Dr.
Reading, RG2 0TG
PH: +44 (118) 920-7800

IPA Netherlands

Prinsenhof Building, Prinses
Margrietplantsoen 32
2595 BR The Hague,
The Netherlands
PH: +31 (070) 335-0707
Fax: +31 (070) 335-0642

IPA Singapore

#03-07 Creative Resource
31 International Business Park
Singapore 609921
PH: +65 6567-2201
Fax: +65 6567-2231

IPA China

Beijing Mairuo Industry
Technical Consulting Company
Room 9912B, Jingshi Building
No. 19 Xinjiekouwai Street
Hai Dian District
Beijing
P.R. China 100875
PH: +86 (10) 5880-1970
Fax: +86 (10) 5880-1957

IPA Australia

Level 1, 56 Burgundy Street
Heidelberg, Victoria, 3084
PH: +61 (39) 458-7300
Fax: +61 (39) 458-7399