Independent Project Analysis, Inc. | Volume 16, Issue 3 | September 2024

IPA Newsletter

ALSO IN THIS ISSUE:

Estimate Validation Is a Key Practice for Improved Project Outcomes

By Aditya Munshi, IPA Product Portfolio Officer and Shubham Galav, IPA Deputy Director, Project Research Division, Cost Group

IPA's research over the last decade has identified owner estimate validation as a Best Practice. It is an important element in setting competitive and predictable cost targets and is recognized by AACE International as a recommended practice.[1] Moreover, a recent IPA study of over 2,500 projects identified significant benefits associated with owner estimate validation. Projects with good quality estimates have an average cost savings of 6 percent for large projects and 4 to 5 percent for site and sustaining projects.

What Is Needed to Perform Reliable Estimate Validation?

Estimate validation assesses a project estimate's competitiveness and conformance to project and business expectations and targets. Critically, it uses metrics different from those used in estimate preparation to compare the estimate with key costs and labor hours and quantity-based metrics derived from previously completed projects.

Estimate Validation vs. Estimate Review

It is important to note that estimate validation is not the same as estimate review. These are two separate activities with different goals, processes, and skills. Estimate review checks if the estimating process is following the estimate plan and industry-accepted practices. Estimate validation is a quantitative process to evaluate an estimate's competitiveness and conformance to the business targets. Information from the estimate review is essential to provide context to the estimate validation results. Therefore, estimate validation should follow estimate review as a separate process.

[1] AACE International RP 31R-03 – Reviewing, Validating, and Documenting the Estimate.

IPANewsletter
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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.

Independent Project Analysis, Inc. is the preeminent organization for quantitative analysis of capital project effectiveness worldwide. At IPA, we identify Best Practices to drive successful project outcomes.
www.ipaglobal.com

Project processes that combine the two activities have worse cost outcomes than those that separate them.

As shown in **Figure 1**, three Best Practices support effective estimate validations.

Figure 1

Process-Driven Estimate Validation

IPA research shows that using a defined work process for estimate validations improves cost performance, decreasing costs by about 9 percent (compared with projects that did estimate validation but did not follow a defined process). The work process provides the structure for estimate validation and includes features such as checklists, procedures, and guidelines.

About 75 percent of companies observed by IPA include an explicit estimate validation step as part of their work process and many have similar process requirements, but the following practices that further reduce costs stand out:

- Including estimating requirements in FEED/basic engineering contracts reduces cost by 5 percent on average
- Developing a change management process reduces cost by 5 percent on average

A **closeout review** is an important part of the estimate validation process. It consists of capturing project data (practices, cost, schedule, scope) in an explicit process step and using the data as input for the company's databases. Historical databases provide quantitative data and information for future estimate validations and are correlated with better outcomes, but only 30 percent of companies conduct closeout reviews. (See **Figure 2**.)

Lack of resources and discipline prevent many companies from completing closeout reviews. The reviews require resources and staff to collect project data at closeout and substantial work is needed to maintain historical databases (including data collection, data normalization). Finally, if the project data are not collected within a few weeks (or days) of project closeout, they are lost forever.

Another key part of the estimate validation process is **estimate reconciliation**. Estimated costs tend to increase as projects move through the definition or Front-End Loading (FEL) phase. Estimate reconciliation

quantifies these changes and enables a root cause analysis to be done. Implementing a formal and disciplined estimate planning process is essential to estimate reconciliation and traceability.

An estimate reconciliation requires a consistent work breakdown structure (WBS) and code of accounts (COA). Using a consistent COA enables an "apples-to-apples" comparison between company projects. Cost definitions and assumptions for soft costs (allowances, indirects) must be consistent and understood, and these definitions must be defined as part of the estimate planning process at the start of project definition. Most companies require an estimate reconciliation to be done, but many are incapable of conducting it during FEL.

Independence and Authority

Having a cost estimator who has both independence and authority is another key Best Practice for estimate validation.

Independence refers to the estimate decision-making process. The validation exercise should be a truly unbiased and "cold-eye" exercise. Any project team member will have too much stake in the outcomes to provide an unbiased assessment. Therefore, having a company cost engineer who is not a part of the project team do the estimate validation is more likely to result in an unbiased assessment. Independence is maintained if the validation results are reported directly to the gatekeeper or estimating manager outside the project team's authority.

Discussing the cost validation results in an interactive meeting that includes the core owner project team, gatekeeper, and estimate validator (at a minimum) further improves project cost effectiveness over only sending a report or memo. Only half of industry respondents included a formal review meeting as part of their estimate validation step.

Data Driven

Effective estimate validation requires diverse and comprehensive cost data. The required data may take on a range of forms and structure and include:

- Cost metrics and ratios
- Results from parametric models or other related conceptual estimating tools
- Project scope and technical data
- Details from a check estimate
- In-house vs. external data sources

The use of **key performance indicators (KPIs)** is associated with improved cost outcomes. KPIs generally include a set of cost metrics that are checked as part of every estimate validation and serve as the foundation for the estimate validation report.

Using data from **multiple sources** improves cost performance whereas relying on a single data source is *not* associated with better outcomes. Companies with strong in-house estimating systems may focus too much on internal data, which can perpetuate the poor practices used in previous company projects. Using company *and* industry data provides a comprehensive assessment. (See **Figure 3**.)

Collecting Historical Data Improves Validation

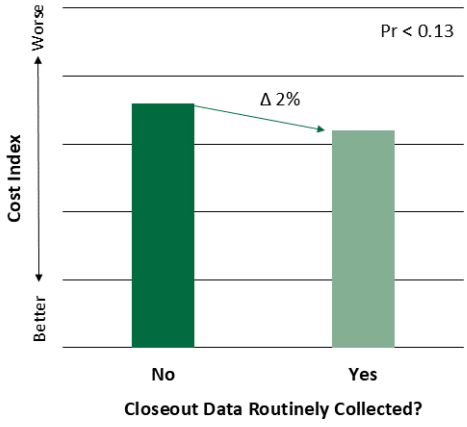


Figure 2

Using Data From Multiple Sources Improves Cost Performance

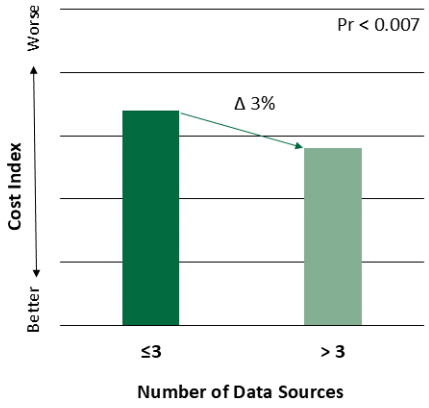


Figure 3

Estimate Validation in Industry

Most owner companies include an estimate validation or review within their capital project work process. However, the application of estimate validation varies within Industry and among companies, with only 44 percent of projects completing an owner estimate validation using detailed metrics before authorization. For the companies that do perform estimate validation, some are missing critical aspects, such as an independent review or high-quality data.

How your company conducts and manages the estimate validation review affects its effectiveness:

- Estimate review and estimate validation should not be considered the same process
- Simply conducting an estimate review (or assurance check) is not a Best Practice

An estimate validation process should be:

- A separate and independent process that is not combined with other assurance steps
- Managed using a formal, driven process
- Independent and free from external bias and have oversight authority
- Comprehensive using a diversity of data sources

Any improvement plans should consider your organization's structure relative to Best Practices. If you are currently conducting estimate reviews and validations within an integrated structure, consider a process change to make the estimate validation an independent step. If the estimate validation reports are not being considered as part of the project's assurance review, implement a review meeting to include all project stakeholders to review the estimate validation results. If your system is lacking with respect to data sources and methods, implement a closeout review process to begin to capture data and consider external data sources and third-party tools to augment your current data.

IPA Data Help Support Estimate Validation

Although estimate validation is a Best Practice, IPA recognizes that owner systems are often short on the data and experience needed to perform it properly. To support this critical activity, for over 20 years we have provided our Cost Engineering Committee (CEC) members with industry-level data and metrics from our database of 24,000+ projects. Beginning in 2024, CEC members now have exclusive access to the all-new CEC Validator software, which enables accurate estimate validation to be done in a matter of minutes.

Contact Aditya Munshi at **amunshi@ipaglobal.com** to request more information!

CEC Validator

How good are your estimates?

It's a big question with a lot riding on the answer. What if you could get accurate estimate validation in just a matter of minutes?

Contact Aditya Munshi at **amunshi@ipaglobal.com** to request more information on the all-new CEC Validator application!

MORE INFO

CEC 2024 Provides First Look at IPA's **New CEC Validator Application**

More than 40 Cost Engineering Committee (CEC) member companies gathered in McLean, VA, on September 17 – 18, 2024, for the group's annual meeting. A highlight of this year's meeting was the rollout of IPA's all-new CEC Validator application, which aids owner cost engineers in conceptual scheduling and estimate validation. The CEC Validator app generates a detailed project-specific validation report in minutes, including a detailed comparison against industry norms and actionable insights.

Established in 1998, the CEC's goal is to advance the owner cost engineering and project controls capabilities of the world's leading industrial companies in capital-intensive sectors. As part of the CEC 2024 meeting agenda, we shared new research that supports this objective:

Engineering/Construction Overlap

Industry projects routinely overlap the detailed engineering and construction phases, often in an attempt to shorten a project's execution schedule. This study looks at the trends in overlap of these phases, what effect overlap has on project outcomes, and what amount of overlap is optimal. This information will help companies understand the industry norms of overlap and provide a basis for setting appropriate schedule targets.

FEL 2 Contingency

The uncertainty in the capital project market and supply chain problems have led many owners to focus on predictability and increased accuracy of their early estimates. IPA has long studied contingency norms for FID estimates (and they are provided as part of CEC package); this study provides historical information on contingency norms at the end of FEL 2 (typically class 4 estimates) to support contingency setting in early project stages.

Capital Project Market Trends

Since 2021, global economies have seen significant inflation and significant supply chain problems. In the world of capital projects, we see the rate of increase in material prices slowly coming down while vendor delays and long-lead times are still worrying project teams. Capital spending is staying robust in 2024, and there are signs of a heated market in many parts of the world. Due to the robust capital spending, we have been anecdotally hearing from clients that many of these supply chain problems are still around.

Given this background, we provide an update to the CEC market survey done over the last 3 years.

CEC Metrics & Tools

Additionally, IPA reviewed the latest cost and schedule metrics packages and tools, including focused sessions on each of the following:

- Schedule Duration Metrics & Tool
- Schedule Practice Metrics
- Cost Predictability Metrics
- CEC Cost Tools & Framework
- CEC Web Applications

The annual meeting is an opportunity for members to gather and discover the latest IPA research and industry trends; receive cost engineering tools, models, and metrics; and network and exchange practices with fellow cost engineering professionals.

How to Join the CEC

The CEC is open to owner companies interested in improving the cost engineering function within their organizations to ultimately improve business results. Contact Shubham Galav at **sgalav@ipaglobal.com** to request more information.

White Paper: **The Successful Management of New Technology Projects**

Author

Edward W. Merrow, Founder and CEO of Independent Project Analysis, Inc. (IPA), is a leading authority on the development and execution of large and complex projects. His knowledge of how to develop more effective capital projects is sought out by Fortune 500 company executives and project professionals worldwide.

Abstract

If we are to meet the challenges of countering climate change and environmental degradation, the projects community will be required to deliver hundreds and perhaps thousands of new technology projects over the next 25 years. Under the best circumstances, that would be difficult. But circumstances are far from ideal because the industry has delivered very few technologically innovative projects over the past 25 years. The purpose of this article is to remind the community about the practices and approaches that are essential to delivering these projects well.

After a long period of declining innovation, the process industries have now entered a new phase in which the ability to develop and deploy new technology successfully will become essential to corporate health or even survival. Is your company prepared?

Download the white paper for in-depth insights on:

- Key Project Practices for New Technology Projects
- New Technology and Project Risk
- The Development and Commercialization Process
- The Role of Business Technology Strategy
- And much more!

DOWNLOAD NOW

New Technology Projects Require Strong Project Delivery Systems

By Vincent Mouraï and Emily Doodkorte

IPA helps a plastics recycling company identify gaps in its project system

The Problem

A European startup with licensed technology in plastics recycling and demonstration plants in execution in Europe asked IPA for help in improving its capital project performance. The client's project system was new and developing, with a lack of processes, procedures, and experienced project professionals. As a result, ongoing projects were struggling with late changes, cost growth, and schedule slip.

The short-term success of these ongoing projects was critical to the client: it faced a loss of investor interest if it failed to demonstrate its technology on a commercial scale, driving a need to accelerate ongoing projects. The client's goal in working with IPA was to ensure the ongoing projects were completed as quickly and cost effectively as possible to avoid a loss of momentum.

What IPA Did

IPA begins any engagement with a current state assessment to get to the root of the problem. We first benchmarked three of the client's ongoing projects using IPA's driver metrics (including team development, project definition, and project controls). IPA analysts spoke to all project teams and systematically collected data to compare the project development and performance against the industry average and Best Performers. In addition, we interviewed stakeholders to gather information about system performance. (See **Figure 4**.)

For the system analysis, IPA follows the Project System Excellence Model (PSEM®). This framework shows the relationship between the project system elements (governance, work process, organization, and performance management) and project success. The work with this client clearly demonstrated that its poor project performance was due to an unsupportive system.

Gaps in the organization, lack of work processes, and missing accountability throughout the governance process directly resulted in late changes for the client's ongoing projects:

- Missing owner project controls allowed the engineering, procurement, and construction management (EPCm) contractor to go unmonitored through execution and issue infrequent and inaccurate progress reports

Project System Excellence Model (PSEM®)

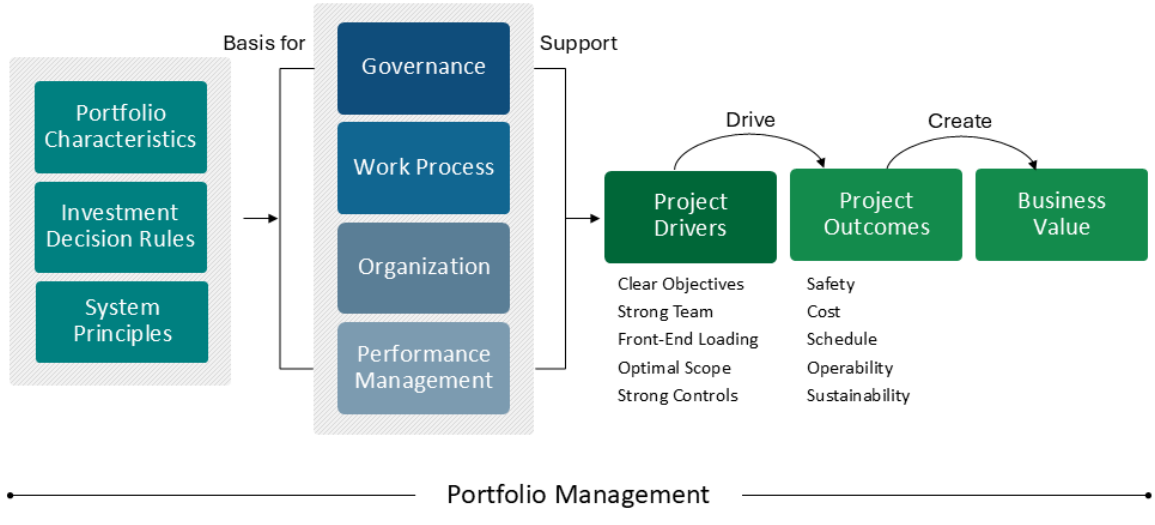


Figure 4

- Lack of an established work process allowed the projects to pass through the definition gates with undefined project deliverables, resulting in late changes to plot plans, P&IDs, and execution strategies
- Absent accountability in the governance process allowed the technology function to continue making scope changes to the project design in execution, adding to the cost growth and delays

Root Cause Analysis

Fundamentally, issues within the governance process drove and magnified gaps in other elements of the project system. The missing accountability structure in the governance process contributed to the poor project drivers and outcomes. (See **Figure 5**.)

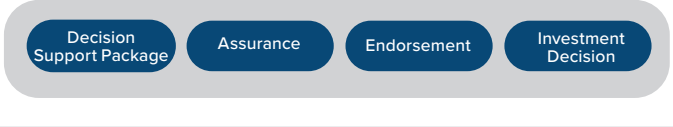


Figure 5

- Decision Support Package Development—The lack of accountability assigned within the work process allowed the projects to approach stage gates with undefined project deliverables, resulting in late changes to plot plans, P&IDs, and execution strategies
- Assurance—The missing accountability for an independent assurance review resulted in significant project risks not being relayed to decision makers
- Endorsement—The lack of sponsor accountability led to poorly defined business cases and project managers attempting to define scopes with no clear constraints or boundary conditions
- Decision Making—Poor behaviors from decision makers resulted in promising unachievable targets to shareholders

Uninformed decision making by the CEO as the only approver of capital was ultimately what led to projects suffering from significant late changes due to poor front-end definition. The decision maker's inexperience with capital project definition and execution, along with missing input from an independent and knowledgeable assurance reviewer, led to late scope changes, such as an insufficient warehouse capacity and laydown area, plus inadequate contracts established with suppliers that resulted in the owner having infrequent progress reporting.

These gaps in pre-FID project definition should have been captured and the risk of approving the project communicated to the decision maker. Although this step was missing, the CEO would have likely approved the capital and progressed the project regardless due to a lack of understanding of capital project front-end complexity. This project system was plagued with an absent governance process and lack of accountability throughout.

Results

IPA's analysis demonstrated that the poor project performance was driven by system-level issues. These issues, if not remedied, will drive the same results for upcoming opportunities. To quote the client (taken from Albert Einstein), "Insanity is doing the same thing over and over again and expecting different results."

IPA developed a recommendations path to support existing projects and to form a process to better develop future projects. The system recommendations addressed key gaps in the Project System Excellence Model, which were prioritized in order of ease of implementation and importance.

New Technology **Risk Analysis**

New technology commercialization projects take longer to start up, require more contingency, and often take longer to reach steady operation than projects using proven technologies. If your project involves a new technology step-out, you need to understand the risks before it's too late. Make the New Technology Risk Analysis a part of your plan.

Contact Michael McFadden at **mmcfadden@ipaglobal.com** to start a discussion!

CCUS **Project Performance Norms**

What Is the Total Lifetime Cost of a CCUS Project?

Independent Project Analysis (IPA) is pleased to announce the launch of a new multi-client research study to determine the real total lifetime cost of carbon capture, utilization, and storage (CCUS) projects in the industry today. Building on previous IPA research, the participating owner firms will receive industry-level metrics needed to improve decision making, understand feasibility, and ultimately drive better competitiveness and overall performance for CCUS projects:

- CAPEX and schedule metrics for the core CCUS components—capture, compression, pipelines, and injection wells
- CAPEX metrics for the OSBL and Balance of Plant components relevant to CCUS projects
- OPEX metrics for the capture and compression scopes

Although the study is underway, additional owner firms active in CCUS—regardless of sector—are welcome to join!

Key Benefits

- Determine the feasibility of CCUS projects based on total lifetime costs
- Understand the cost implications of a given technology selection
- Improve CCUS opportunity screening
- Validate costs for each individual scope component: capture, compression, transport, and storage
- Validate schedule durations for each component (engineering, procurement, construction, execution, cycle time, drilling, completion, and injection well program)
- Understand how project characteristics affect project performance

The Need for CCUS Project Metrics

CCUS projects are increasing in frequency and global significance. Government agencies around the world have announced numerous funding mechanisms to accelerate the development of CCUS projects. As regulatory entities, investors, and shareholders further drive the need for greenhouse gas (GHG) emissions reduction, CCUS projects are poised to play an important role for decades to come. IPA sees the growth first-hand as our initial CCUS research study in 2022 was based on 26 projects and we expect to have more than 45 CCUS projects for analysis in this follow-up study.

Decision-making for CCUS projects has become increasingly complex. This study pools industry learnings to address the gap in developer knowledge on cost and schedule assumptions, driven by the relatively few CCUS projects completed to date and the lack of experience in complex engineering-heavy projects from several industries currently active in CCUS. Another factor adding complexity is the application of partially proven technology and scopes in new environments and at different capacity ranges. This lack of prior experience and added complexity due to first-of-a-kind elements hinders effective decision making.

What Sets IPA's Study Apart?

Wide Range of CCUS Projects Analyzed: We will examine real data from CCUS projects representing diverse value chain configurations, using various sources of CO_2, executed under different business models, and with a wide range of design capacities.

Comprehensive CAPEX Focus: This study seeks to understand the full CCUS value chain, including the Balance of Plant and OSBL components, which can significantly influence the feasibility of the entire project.

Focus on Total Lifetime Project Costs: CAPEX and OPEX metrics provided in this study will give a broader picture of the lifetime costs of the CCUS system.

Data Sourced Directly From Project Teams: This study represents the only CCUS cost study executed to gather, organize, normalize, and present results from real project data.

WEBINAR

Improving Carbon Competitiveness: **GHG Benchmarking and De-Risking CCUS**

Capital projects we develop today have a significant positive and negative influence on corporate decarbonization goals. In this on-demand webinar, members of IPA's Carbon Management & Sustainability team put the focus on improving carbon competitiveness by discussing the following:

- Tools and frameworks to help project organizations and project teams benchmark their GHG performance against industry peers
- Emerging Best Practices that lead to an optimal low-carbon and low-cost project performance
- CCUS cost and schedule performance trends and key risks that are hindering more projects from taking final investment decision (FID)

WATCH WEBINAR

Comprehensive and Proven Normalization Methodology: Normalization of all data enables a direct comparison of costs and identification of drivers and OPEX metrics.

Global Focus Area: The global nature of this analysis helps participants identify various implications for moving CCUS projects from one location to another.

Secure, Accurate, and Transparent Data Collection: IPA has a 35+ year history of collecting and aggregating cost data securely and accurately using a standardized cost breakdown structure (CBS).

IPA's Proven Methodology

IPA is employing our proven methodology to conduct the study:

1. Establish the study steering committee
2. Develop the data collection strategy in collaboration with the steering committee
3. Collect CAPEX, OPEX, and technical data from participating companies securely and accurately
4. Aggregate, anonymize, and normalize all project data
5. Analyze the data and prepare the study report
6. Share the study report with all participants

Applicable Sectors

The study is open to all owner firms active in CCUS from all industries, including oil & gas production, power generation, chemicals, refining, cement, and iron & steel.

Join the Study

Do you represent an owner firm active in CCUS projects? Are you ready to take the next step to drive better performance? Contact Adi Akheramka at **aakheramka@ipaglobal.com** to request more information.

Updated 2024 Edition of **Industrial Megaprojects Book by Edward Merrow Now Available**

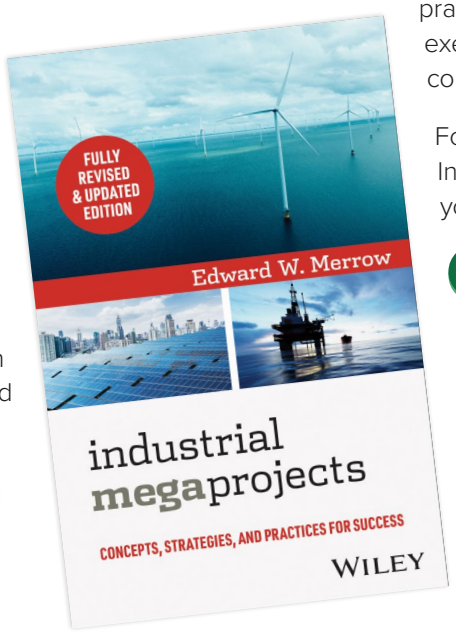
Independent Project Analysis (IPA) Inc. is pleased to announce that IPA CEO Edward Merrow's latest book, *Industrial Megaprojects: Concepts, Strategies, and Practices for Success 2nd Edition*, is now widely available for purchase. Updated for the current capital project landscape, the latest version provides important updates to the original 2011 book, including extensive new material on renewable energy and decarbonization projects, as well as:

- Clear, nontechnical explanations of why major projects tend to get into trouble
- Strategies to avoid hazardous and costly errors in the high-stakes megaproject environment
- A comprehensive collection of tools, principles, and frameworks to take a megaproject from start to finish without compromising on safety, blowing the budget, or exceeding the deadline

This book also delves into the critical role of governance in making projects successful, commonly seen hazardous and costly errors, technical expertise requirements to ensure efficient function of plants once work is completed, and more. Case studies showcasing how megaprojects can fail and succeed are also included throughout the text.

Written by world-renowned megaproject consultant and evaluator Edward Merrow, *Industrial Megaprojects* is an essential resource for engineers, industry professionals, and executives seeking to produce safe, cost-effective, on-time, and successful megaprojects.

The updated *Industrial Megaprojects* book is the latest in a series of books by Merrow. Following *Contract Strategies for Major Projects and Leading Complex Projects* (with co-author Neeraj Nandurdikar), *Industrial Megaprojects 2nd Edition* continues Merrow's important work to guide practitioners on how to execute successful large, complex projects.



Follow this link to order Industrial Megaprojects from your preferred bookstore.

ORDER HERE »

Includes extensive new material on renewable energy and decarbonization projects!

TRAINING COURSE

Megaprojects: Concepts, Strategies, and Practices for Success

Get a head start on your 2025 improvement initiatives. Spend 3 fun days learning from IPA experts about how to drive success in megaprojects, no matter what your role is!

November 12-14
Perth, Austrailia

REGISTER

December 10-12
Houston, Texas

REGISTER

Emily Doodkorte Promoted to IPA Capital Solutions Product Development Leader, Europe, Middle East, and Africa (EMEA)

Emily Doodkorte has been promoted to Capital Solutions Product Development Leader for IPA's Europe, Middle East, and Africa (EMEA) office, effective September 1, 2024.

In this role, Doodkorte is the central focal point for Capital Solutions in EMEA, working with new and existing clients to help them along their capital project system journey. Her work involves identifying system-level issues with root causes in work process and governance to customize solutions for improving capital project drivers and outcomes.

As part of her work in IPA Capital Solutions, Doodkorte recently authored a research study on the topic of accountability through the capital project governance process in which she worked with C-suite client representatives to uncover Best Practices in governance, statistically linking them to project outcomes.

Doodkorte joined IPA in 2019 as a Project Analyst and has led engagements with clients ranging from independent chemicals sites to multi-national refiners across the world. She has worked with clients to diagnose systemic issues materializing on projects and implement solutions to improve performance.

Doodkorte holds a master's degree in Chemical Engineering and Management from Loughborough University, United Kingdom.

IPA's North America Office Supports Local Schools With Supply Drive

The IPA Community Service team held a successful back-to-school supply drive in August 2024 to benefit three local elementary schools in Sterling, VA, near IPA's North America office. IPA employees worked together to collect and deliver essential school supplies directly to the schools, including: **58 boxes of crayons, 62 boxes of color pencils, 101 composition notebooks, 56 headphones, 9 backpacks, and more!**

The elementary schools were grateful for IPA's support. School supply drives such as this have a significant impact as they ensure students have the essential tools to learn and succeed in the classroom. Giving back to the communities in which we operate is one of IPA's core principles, and this is one of many examples of how IPA employees put this into practice.

Independent Project Analysis
Community Service

MMM Community of Practice
Kick-Off Slated for November

By Cheryl Burgess, IPA Staff Writer and Senior Editor

The kick-off meeting of the Mining, Minerals, and Metals (MMM) Community of Practice (CoP) is planned for November 11, 2024, in Perth, Australia. Facilitated by IPA, this in-person meeting will feature industry panels and discussions, as well as key speakers from several MMM companies. This informal gathering provides the opportunity for senior voices in the mining capital projects community to meet and discuss central themes affecting the mining value chain in 2024 with the intent to stimulate communication between peer companies in a facilitated environment.

Our initial theme is: The Next Mining Frontier! The Challenges of Thinking Long-Term in a Short-Term Project World with topics that include:

- Boom, Bust, Now! The MMM State of Play
- Unlocking Value Through Innovation
- Eliminating Bad Projects Early in the Project Life Cycle
- Successfully Delivering Capital Portfolios in 2024 and Beyond

The MMM CoP provides a forum for project practitioners to share insights and learnings through in person events, to be held twice a year at different venues, and online sessions that follow the in person gatherings and bring the meeting topics to a wider audience. MMM CoP members will also receive a newsletter that gives a summary overview of the session topics.

By giving practitioners the opportunity to meet with and learn from others in their industry, the MMM CoP is intended to help improve MMM industry practices and outcomes. MMM CoP meetings will provide tangible insights into project performance and practices that drive success for projects in the mining, minerals, and metals industry and the owner companies that develop and execute them.

For more information on this invitation-only event, please email **MMM@ipaglobal.com**.

2024 IPA Institute Course Schedule

THE IPA INSTITUTE
Advancing Project Knowledge

In-Person Courses	Dates	Language	Click to Register
Complex Projects: Concepts, Strategies, and Practices for Success* **Calgary, AB**	September 24–26	English	SOLD OUT!
Best Practices for Site-Based Projects* **Houston, TX, USA**	October 9–10	English	SOLD OUT!
Megaprojects: Concepts, Strategies, and Practices for Success* **Perth, Australia**	November 12–14	English	REGISTER
Megaprojects: Concepts, Strategies, and Practices for Success* **Houston, TX, USA**	December 10–12	English	REGISTER
Virtual Courses	**Dates**	**Language**	**Click to Register**
Capital Project Execution Excellence and Project Controls	October 8–9	English	REGISTER
Project Stakeholder Alignment Through Successful BEAM Implementation	October 22	English	REGISTER
Front-End Loading (FEL) and the Stage-Gated Process	October 28–30	Portuguese	REGISTER
Gatekeeping for Capital Project Governance	November 5–6	English	REGISTER
Front-End Loading (FEL) and the Stage-Gated Process	November 12–13	English	REGISTER
Front-End Loading (FEL) and the Stage-Gated Process	November 19–21	Spanish	REGISTER
Project Management Best Practices	November 25-29	Spanish	REGISTER
Project Stakeholder Alignment Through Successful BEAM Implementation	December 4	Portuguese	REGISTER
Project Stakeholder Alignment Through Successful BEAM Implementation	December 10	English	REGISTER

***Group Discount Available:** Register 3 and send a 4th for free!*

About the IPA Institute

The IPA Institute is the training and education division of Independent Project Analysis (IPA), the world's leading advisory firm on capital projects. Our courses equip industry leaders and capital project practitioners with Best Practices for projects, portfolio, and project system management/delivery. All course instruction, presentations, and supplementary course materials are rooted in IPA's unparalleled capital project knowledge and research, and based on data from IPA's proprietary project database.

IPA Events and Presentations

Victoria's Department of Transport and Planning

October 8, 2024

IPA Asia-Pacific Director Sally Glen will lead a bag brown training for Victoria's Department of Transport and Planning. The department's BIG Continuous Improvement Community brings together a supportive network of CI advocates dedicated to enhancing processes, sharing expertise, and driving positive change together. Sally will share insights on continuous improvement drawn from her extensive experience working directly with owner firms.

MMM Community of Practice

November 11, 2024
Perth, Australia

IPA is launching a new MMM Community of Practice, providing a forum for project practitioners to share insights and learnings both through in-person events and online sessions. The kick-off event will take this November in Perth, Australia. Contact IPA MMM Manager Joe O'Brien at **jobrien@ipaglobal.com** to request more information.

Upstream Industry Benchmarking Consortium (UIBC)

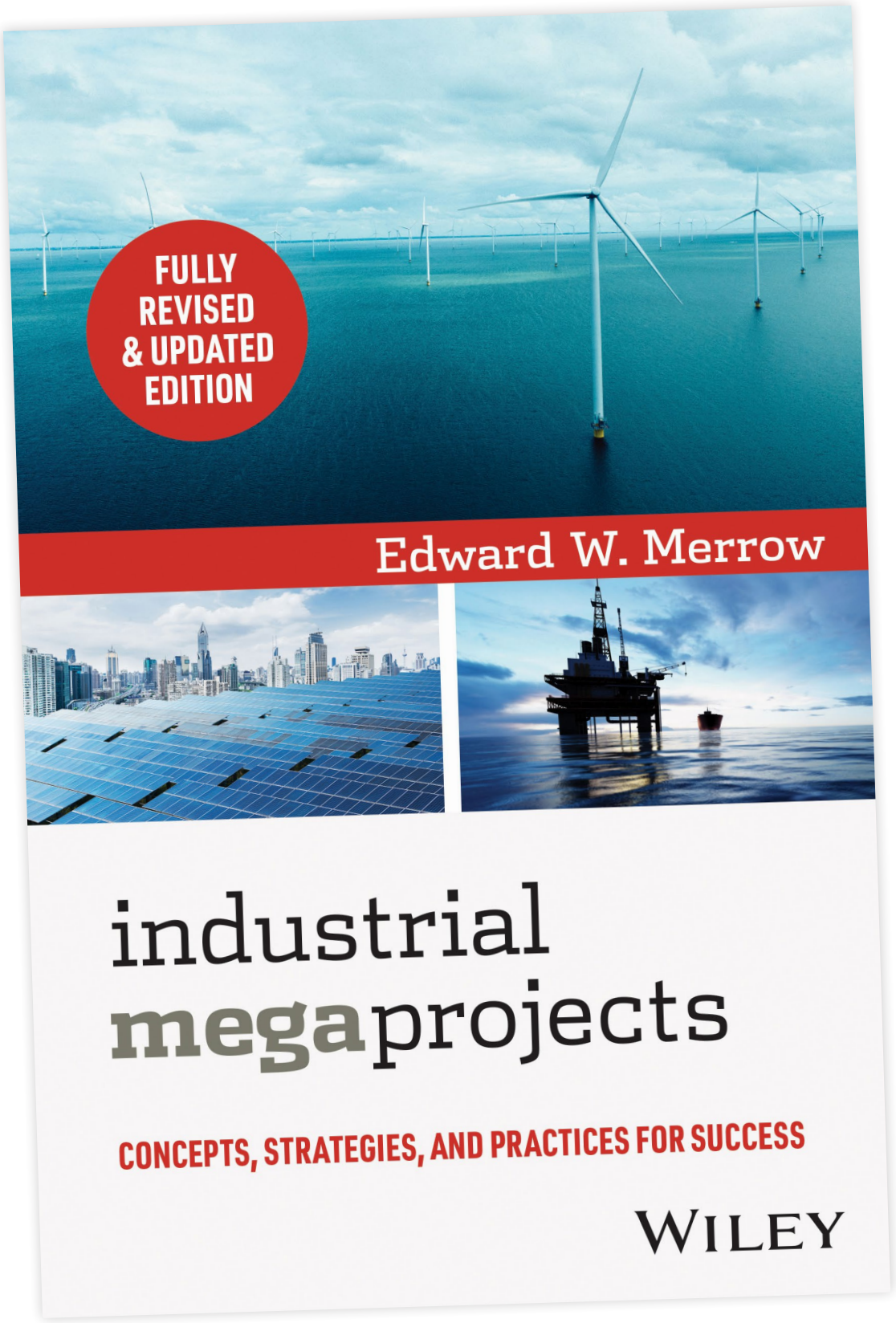
November 18-20, 2024
McLean, VA

The UIBC provides an independent forum for each participating exploration and production (E&P) company to view key metrics of its project system performance such as cost and schedule, Front-End Loading (FEL), and many others against the performance of other companies and share pointed and detailed information about their practices. The consortium highlights Best Practices, reinforcing their importance in driving improvements in asset development and capital effectiveness. Contact Carlos Tapia at **ctapia@ipaglobal.com** to request more information.

Industry Benchmarking Consortium (IBC)

March 17-19, 2025
Lansdowne, VA

The IBC is a premier group of the world's leading industrial companies in the processing, refining, infrastructure, and mining and minerals sectors. IBC member companies receive exclusive insights into how their capital project systems and outcomes stack up against their industry peers with respect to safety, cost, schedule, and operational performance. IPA helps each company to assess the strengths and weaknesses of its project system and map out a plan for improvement. Contact Andrew Griffith at **agriffith@ipaglobal.com** for more information.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