project management
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# The Contractor's View of Capital Construction

*by Jimmy Cravens*

It is no secret that EPC Contractors have a changing perspective on heavy industrial construction. The last two years have seen bankruptcies, reduced stock value, and movement away from risk. Many have declared that they will no longer do fixed price work while others have gone further and announced a shift away from construction involvement.

How did they get here? A frequent part of the story is large-scale, inadequately-defined projects presented by Owners and ambitiously bid by Contractors, resulting in negative ramifications for both parties. Other issues have added fuel to the fire leading to an uncertain future for traditional contracting models.

The owner's perspective on problem projects and strained contractor relationships is often a topic of industry forums and annual conferences. It is Pathfinder's observation that the contractor's perspective is less publicized. To facilitate a more comprehensive view of the problem, Pathfinder surveyed approximately 15 large and mid-size EPCs with focus on defining their current views and their plans for the future. Results from the survey indicated that Contractors are willing partners who view themselves as "boxed into a corner" regarding inadequately defined and prepared EPC opportunities. The most commonly identified issue involves poor scope definition. As noted above, Owners seek price certainty (Lump Sum Bidding) in advance of comprehensive project definition. While the Contractor can improve their bids with quoted equipment and material purchases, there is often a wide variation in final quantities and /or the labor hours required for

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installation. While Owners argue that better estimating techniques can be used to close the Gap, Contractors counter that their growing losses are proof that one-sided risk /reward contracts are stacked against them. This overarching discussion spawned a number of sub-issues:




- Owner Procurement organizations are focused on cost reduction and stringent terms without trust or risk balance. Contractors admit that they are their own worst enemy by tolerating downward cost pressure and harsh terms.
- Public EPC companies struggle to participate in the current environment. Stockholders offer

## The Contractor's View cont...

relentless pressure for backlog and profit, making each failed project and disappointing quarter a career threatening event for company leadership

- There is just not enough profit in the business. Most contractors are treading water with a 1-2 % annual profit and nobody buys stock in a company making 2%
- Contractors share guilt for project failures resulting from their own cost cutting and failure to reinvest in technology
- Owners relate many problems to poor Contractor performance. Both sides agree that there is a mutual problem with scarcity of talented resources.
- Current contracting practices too often result in a lose/lose situation where both sides suffer.

Most interviewees agree that the existing environment is not sustainable and that if things don't change, the industry will be left with no one willing to jump into the types of projects that made the industry great. With that said, most think the existing business model can work if both Owners and Contractors can evolve to a better understanding each other's position with a willingness to share both risk and reward. Several contractors noted a critical need for establishment of trust, mutual respect and alignment of goals. These attributes are noble but elusive. They can be won or lost at a moment's notice. The ideal scenario is to not enter a relationship if either party does not trust the other. However, the real issue is how to peel away conflicting objectives, protective contracting on both sides and how to create realization that construction is a risky business and that solving today's issues will require thinking out of the box to come up with ways to harness technology, improve performance and equally distribute risk. There are a number a revised contracting strategies that are showing signs of success and many smart people working on fresh ideas to affect a paradigm shift in the way we execute projects.

While the Pathfinder survey did not uncover any shocking revelations, it did reinforce that the industry is salvageable and that success will come with a common focused effort to restore the industry to one in which everyone is proud to participate. ■

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Marco Crovesi
Retired Hovensa

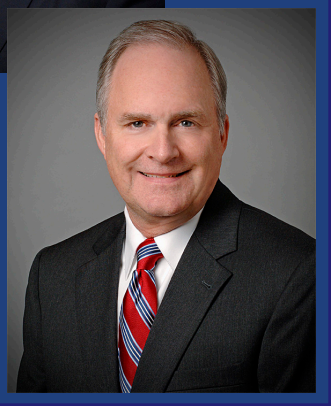
## Steve Cabano and Paul Williams to be honored with the 2021 AACE International Brian D. Dunfield Educational Service Award

AACE INTERNATIONAL

This award is given in recognition of continuous and significant contributions through educational programs directed to the advancement of total cost management.

Steve and Paul have conducted Project Controls from and Owner's Perspective and Advanced Project Control's from an Owner's Perspective respectively at the Annual Conference since 2008.







# Looking to Improve Construction Productivity?

*by Maria Lizardo*

Over the past 20 years, the Oil and Gas, Petrochemical, Chemical and other related Industries have recognized the need to improve construction productivity, motivating owners and contractors to innovate construction methods. The transformation of their project organizations requires rethinking their approach and creating construction practices that can be replicated with success.

There has been considerable research regarding this issue and the results have shown the main causes for poor performance include:

- Lack of Project Teams with field construction and planning experience
- Technical issues, incomplete engineering deliverables
- Late project changes
- Poor construction planning and supporting engineering/procurement planning
- Poor identification of required resources
- Lack of recognition regarding density of resources
- Lack of appropriate quality control
- Inadequacy of contract type and contract administration
- Inconsistency in risk allocation due the contract type
- Poor adherence to the agreed to project execution plan

Around the world, associations such as Construction Industry Institute (CII), Construction Users Round Table (CURT), Construction Owners Association of Alberta (COAA) and many others have studied and document these issues. This research, which includes participation from industry representatives, prestigious universities, and subject matter experts, has identified a number of innovative solutions to address these issues. Some of these techniques have been

## Construction Productivity cont...

applied for years (Constructability Reviews, CPM resource-loaded schedule, etc.) with limited success. More ground-breaking approaches are now being tested such as Advance Work Packaging, Integrated Project Delivery Processes and Lean Construction.

Leading project organizations have recognized that failure to adapt to these new approaches could result in being left behind. Some have taken incremental improvement steps, implementing small, and discrete programs, while others have structured their project delivery process in a more aggressive way, designing plants that can be repeated many times (manufacturing systems of mass production, e.g., midstream projects).

Changes are coming, but many approaches that have been discussed for years have yet to be adopted at the scale needed to transform the Industry. Innovative approaches should be tested - taking into consideration the challenges, the opportunity, project type and the risk tolerance of Owners and Contractors.

Below are six recommendations that should improve project productivity:

**1** Shift from Customized to Standardized Engineering Design
(Repeatability/Production Chains/Standard Specs)

**2** Implement a collaborative contractual environment framework
(Align Owners', Suppliers', and Contractors' interests)

**3** Implement Lean Supply-Chain Management
(Digital supply-chain work processes improve logistics management and achieve just-in-time delivery)

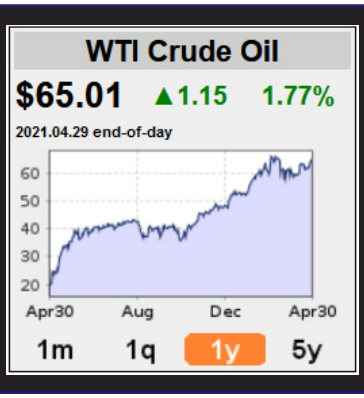
**4** Implement a Work Packaging approach and apply Advanced Work Packaging (AWP)
(This will create an environment of construction driven engineering.)

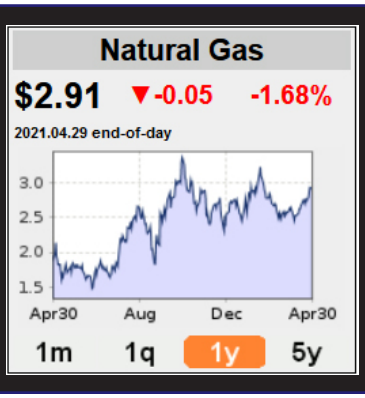
**5** Early development and implementation of a detailed Project Execution Plan
(Apply integrated planning tools & key performance indicators (KPIs) to measure performance – Instill digital technology)

**6** Training
(Project Teams and workforce need to be adapted to the new mindset, approach, and digital technology)

Pathfinder continuously tests new trends and digital technology and has supported numerous capital project organizations in applying more productive systems. ■

real time prices









# Project Cost Estimating

## What works for you?

The project planning and execution environment continues to morph. Results of world economic conditions, fluctuating markets and impacts of the pandemic continue to trigger owner organizations to evaluate the most effective project planning and delivery organization structure. One of the most critical aspects of this staffing decision is that of the Cost Estimating function. The accuracy and reliability of project estimates has a profound impact on not only the development of the Owner's capital project portfolio but also strategic decision making for the company. Recently, it has been difficult for the owner organization to retain and maintain internal cost estimating capability not only due to the cost of retaining the resources involved in estimating but also the cost and time involved in maintaining the systems and databases involved in the estimating process. For this reason, many owners are now relying on expert cost estimating services to develop early conceptual estimates, review contractor estimates, and to evaluate scope changes from an estimating perspective.




The following chart outlines several key factors that make this approach successful. If these factors can be well defined and understood buy the owner and estimating service provider, this approach can be successful.

Pathfinder has recently been engaged by a number of owner organizations requesting estimating support. Pathfinder has developed estimates covering Total Installed Cost (TIC) project values of several million dollars to multi-billion dollars. These estimates are provided in the early assessment stage as well as reviewing contractor developed estimates in the project authorization stage. Pathfinder's totally independent estimating support provides an un-biased evaluation of the project without any hidden agendas or ulterior motives from Owner or Contractor developed estimates. ■




# Project Management Training Series

Pathfinder's fundamental project management series is a resource to help organizations plan the development of new construction project managers (those who have three to five years of experience). Each highly interactive training module features a live instructor and frequent interaction and collaboration among students. They are developed and facilitated by individuals that are knowledgeable and experienced in the Construction Industry Institute's body of practices, benchmarking databases, and methodologies. This series breaks down into the following areas of study: project management fundamentals, project controls essentials and contracting best practices.

## PM Fundamentals

July 12, 2021
$249.00 | Register

In this multifaceted approach to learning, attendees will understand the roles and responsibilities of the owner and contractor's project manager. This course provides a perspective of the worldwide project planning and execution environment and how project management must react to fluctuations in this ever-changing industry. Through live instruction and collaborative break-out sessions, attendees will have the opportunity to better understand the function of the project manager and how creating an environment where others can work efficiently is the primary role.

## Project Control Essentials

July 13-14, 2021
$498.00 | Register

Through live instruction and collaborative break-out sessions, attendees will discover the essentials of the general project controls process and how this integrates with the project delivery process. Project control planning aspects such as scope definition, cost management, and schedule management will be broken down into topics such as cost estimating, planning, cost control, and schedule management. Supporting these topics will be discussions on scope control and change management. Aspects such as productivity, performance measurement, and earned value will also be addressed.

## Contracting Best Practices

July 15-16, 2021
$498.00 | Register

Through live instruction and collaborative break-out sessions, attendees will understand the overall contracting process from contract strategy selection through the development of contract documents and contract administration. Lump sum, reimbursable, unit prices and incentive contract compensation approaches will be addressed, as well as, contractor pre-screening, bid review, and negotiations. Worldwide engineering and construction activity will be discussed, as well as, the evolving contractor community and resource availability.

**Construction Industry Institute research topics, concepts and tools are introduced throughout each course.**

**CLICK HERE FOR MORE INFORMATION**

# PROFESSIONAL Profile

## STEPHEN COFFEE

Principal Associate

Stephen has more than 33 years of experience as an Engineering, Construction and Procurement expert supporting projects in the Industrial and Manufacturing industries. In these roles he has worked for operating companies and as an owner consultant and contractor. He also has in-depth project experience encompassing business unit development & integration, turnaround project development & management, project controls, engineering, contracts and procurement, materials management, construction management, maintenance, reliability, and emergency response.

Additionally, Stephen has traveled, lived, and work extensively in various domestic and overseas locations with global assignments and engagements in Argentina, Germany, Belgium, China, Hungary, Slovakia, Czech Republic, and Romania.

He is a successful leader and change agent for local and global improvement initiatives for developing and optimizing organizational efficiency, work force utilization and performance. Stephen has direct management experience of more than $1.5B of investments, representing over 10M safe man-hours with an overall TRIR of .04 and LTR of 0. He's improved the effectiveness of an integrated single service company across 20+ refineries in Eastern Europe and has served as an expert witness in two (2) Fire Rebuild litigations.

Stephen earned his Bachelor of Science Degree in Mathematics from Louisiana Tech University, Ruston, LA. He serves as a Board Member for We Are Building Lives and Hope Landing. Stephen has also written several articles for industry associations.

In his spare time, he enjoys spending time with his wife of 31 years, Suzie. They have 2 grown children, Brandon, and Haley. Now raising dogs and chickens, hard to tell which is better yet. Stephen is a lifelong and avid LSU Tiger fan but enjoys the social aspect the most, cooking, and entertaining large groups of family and friends. He is a chef as well and started a cooking company primarily to raise money for Charities through the sale of his authentic Cajun and creole cuisine.



# ATTENTION CII Members

Pathfinder is approved to advise and provide training on published practices by the Construction Industry Institute (CII).

Pathfinder's Orientation Series is designed to help clients understand and implement CII Practices and Methodologies.

Pathfinder offers facilitation of a higher level of adoption and sale of industry knowledge regarding the benefits of CII Practices and methodologies.

Pathfinder's Orientation programs are FREE of charge as long as you are a current member of CII.

All sessions are VIRTUAL and run 90 minutes. Great Lunch and Learn sessions for your organization.

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General CII Orientation
Advanced Work Packaging
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Contracting Strategy
PDRI
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# PATHFINDER Industry Events

**Philadelphia Chamber of Commerce - New at the Navy Yard**
Attending
May 6, 2021 | 11:00am - 12:00pm EDT | Virtual

**US Offshore Wind 2021**
Attending
May 25-27, 2021 | Virtual

**AACE International - Project Controls from an Owner's Perspective Seminar**
May 25 -27, 2021 | Virtual | Register

**AACE International - Advanced Project Controls from an Owner's Perspective Seminar**
June 1-3, 2021 | Virtual | Register

**AACE International Annual Conference**
June 20-23, 2021 | Westin Boston Waterfront | Boston, MA
Steve Cabano presents: How the Owner Contracting Strategy Affects Project Control
June 17, 2021 @12:30pm - 1:30pm EDT | Register
- - - - - - - - - - - - - - - - - - - - -
Dave Wolfson presents: Improving Project Gatekeeping Through Stakeholder Alignment and Behavioral Decision-making
June 17, 2021 @2:00pm - 3:00pm EDT | Register

**CII-CURT Joint Conference**
Steve Cabano to present the RT DCC-07 Capital Efficiency Scorecard for Downstream and Chemicals Projects
August 2-5, 2021 | W Marriott Grande Lakes | Orlando, Florida
Register

**ECC Annual Conference**
Facilitating Panel Discussion on Developing a Winning Contracting Strategy
September 8-11, 2021 | Gaylord Texas Resort | Grapevine, TX
Register

**Project Controls Expo - Global**
Masterclass Presentation: The Owner's Role in Project Controls
September 16, 2021 @ 11:00am EDT | Virtual | Register

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