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Best PM/CM Practices

Bruce Schlaitzer, RA
*Senior Vice President and Managing Director,
Project Management Group
(European Region), Hill International*
bruceschlaitzer@hillintl.com



In the early 1970s, spurred by a strong sense of energy security, the U.S. government launched a major venture to develop the billions of barrels of crude oil reserves in Alaska. At stake was the Prudhoe Bay project that called for the construction of base operations, living quarters, pumping stations and an oil pipeline to provide U.S. controlled energy to its 50 states. Large modular building units were constructed on the west coast, loaded on barges and shipped north under a sealift operations to await late-summer shipping lane through the receding ice.

In a good year, the shipping lane would provide a six-week window for the sealift to race to Prudhoe Bay, off-load modules and return to open seas. The modules would be off-loaded, transported to the site on large tractor-crawlers, made weather tight and construction crews would work inside to complete the buildings through the winter at temperatures of – (negative) degrees Celsius and a wind velocity of 65 kms/hour. The challenges were too great to ignore.

White-outs occurred in high wind conditions, reducing visibility and restricting road travel. Also, everyone outside the buildings carried two-way radios. Equipment was either left running 24/7 with re-fueling trucks in constant operation or plugged in to engine block heaters. The story does not end there. Buildings were often set on elevated pile caps, on frozen slurry-

filled steel piling, while roads and building pads were constructed on gravel pads five feet thick to provide structural insulation and protect the permafrost. And lastly, two people for each job rotation was established for each discipline.



All the effort was worth while and an example of how implementation of the best project management practices helps to overcome even the most severe challenges, said Bruce Schlaitzer, a Senior Vice President with Hill International, who has undoubtedly seen what it takes to complete a project on-time and within budget. He has also learned how to avoid problems on a big project through direct real-world experience and by working side-by-side with some of the best construction professionals in the world. It is this experience that has garnered a set of PM best practices that have stood the test of time. “You cannot send out a baseball team to play a football game,” said Schlaitzer when asked what happens when best practices are ignored.

Schlaitzer heads up Hill’s European Project Management Group. His experience includes some US\$14 billion worth of projects including managing master plans, luxury hotels and institutional and mixed-use commercial buildings. He has represented owners, operators, developers, project/construction management firms, general contractors and design consultants with multi-cultural and multi-national teams in the Americas, Europe, Middle East and Asia.



Managing construction of a major capital project is anything but simple and successful project delivery is a team effort. However, there are

simple guidelines which an owner should follow to set the stage for a smoother project delivery process. In his “bible of best practices” Schlaitzer points out that the first key consideration in effective project management is the basic premise that “an owner knowing the most”. The owner needs to be the best informed member of the project delivery team and it is the project manager’s job to make sure this happens, he said.

“A good project manager will implement effective management tools that will keep an owner informed and facilitate sound decision making. Also, an owner needs to understand and integrate all project delivery elements such as safety, cost, contracts, time schedule, design management, risk analysis and change management. If project delivery is not an owner’s core business, it is likely that they will not have the skills in-house to properly manage the delivery process. If the skills are not available in-house, an owner should retain the services of a PM,” he suggested.

Next on the list is that the PM must stay involved with the client and ask questions to clarify any doubts. An owner’s organization should be prepared to drill down to the detail of designer and contractor work process and product, he said, adding they need to ask good questions and stay on top of the process. “Owners have a right [I believe obligation] to ask questions about the systems, equipment and materials incorporated into their project,” he said. Some of the questions an owner could ask include:

- Are there alternatives which have been explored?
- Are contractor schedules and durations realistic?
- Are long-lead material items ordered?
- What about supervision and who does it?

This is an art, as much as it is a science, and can be done without interfering with third-party contract obligations. Next on Schlaitzer’s list is the need for a PM to ensure that all his responsibilities are covered with a matrix of authority, reporting hierarchy, duties and responsibilities. This should be done both inter-team and intra-team and prior to drafting contracts. The matrix subsequently becomes a checklist for scope of work and services, communications guidelines and position descriptions, he said.

Staffing and Tools

A significant aspect of project management is about the people selected for the team and them backing it up. “Look for experience, energy and commitment and problem solvers, not problem watchers. Start-up teams of highly-experienced personnel are often made available for rapid starts. These experts can have a dramatic impact on the project with early involvement,” he pointed out. Citing a recent example, Schlaitzer said Hill International has been recently invited to submit a proposal for a multi-use project in Central Asia with multi-cultural issues. “We would be on firmer ground by finding a PM from the UK or North America that already has the experience in working with a multi-cultural team and will be able to provide leadership to a team,” he said. Along with finding the right staff, tools are also important.

However, the important issue is how to apply the tools rather than which tool is procured off-the-shelf. PMs must be able to incorporate tools and controls into all contracts, including design. “All too often, we join projects after the designers have been retained and the agreements lack the tools necessary to enforce time-line, definition of deliverables and best practice for documentation, drawings and specifications,” he pointed out. To deal with any hiccups or hurdles, Schlaitzer suggested a PM should use all ‘weapons’ in his arsenal: design guidelines, time schedules, cost plans, client instruction system and in-depth interview. Equally important for a PM is to focus on the scope of work and developing a project delivery schedule.



For the former, the right people at the right time will reduce delivery risks by creating scope of work documents to more clearly define bidder and subcontractor responsibilities therefore protecting the client. The interface between the designer publishing drawings and specifications and the general contractor distributing them to specialist subcontractors for pricing and agreement can be better managed by the creation of scope of work documents. For a project delivery strategy, he said matching a delivery strategy to the circumstances, owner’s financial goals, capabilities, schedule constraints and risk profile are of utmost importance. “All delivery strategies should be effective provided the owner makes the appropriate organizational and management shift. We often find owners who implement a design and build strategy with no in-house design management capability,” he said.

Citing some examples of contracts that a PM could consider, Schlaitzer pointed towards engineering, procurement and construction; design and build; cost plus; BOQ; fast track; scope contracts versus document based contracts; multiple contracts versus single contracts; and contingency management. "All the strategies have unique characteristics which must be addressed," he hastened to add.

Next on the list is preparing a master project schedule to contain all activities relevant to the overall success of project, not just construction. They include owner/project management activities; financing milestones; third party consultant activities, like public authorities; design consultant detailed schedules; contractor schedule; interface and approvals activities, such as shop drawings and submittals; and commissioning, handover and initial operations schedule. The success of a project manager will also depend to a great extent on two more issues.



The first is pre-construction, under which 85% of the opportunity to manage the outcome occurs prior to the award of construction contracts.

"Owner resources and effort should align with this and the owner's team should be organized early on to set up the discipline for design management, cost management, packaging strategies and value engineering," Schlaitzer said. The most critical and least understood element is the quality of design, compliance with guidelines, design deliverables, definition of content, design integration and design scheduling. Design management does not end at procurement, it continues throughout the project. And last, but not least, is site management.

The owner should have the best and most current information available, which requires his organization to penetrate the site and retain first-hand knowledge of events and developments. Responding to a pointed query on what have been his best-managed projects besides Prudhoe Bay, Schlaitzer replied it is the first phase development of Canary Wharf in the UK where he was able to apply all the best PM practices. Conversely, the most difficult project for him managing was an entertainment facility in which the client issued 1,000 field directives over a 30-day period.

About the Author

Bruce Schlaitzer, RA
Senior Vice President and Managing Director,
Project Management Group (European Region),
Hill International

Bruce A. Schlaitzer, RA is Senior Vice President and Managing Director of the European Region for Hill's Project Management Group. Schlaitzer has over 35 years of experience in the construction industry. Schlaitzer has helped manage such notable projects as Palm Jumeirah in Dubai, Canary Wharf in London, the Petronas Twin Towers in Kuala Lumpur and the Euro-Disney Theme Park in Paris. He earned his B.S. in architecture from the University of Washington and is a registered architect in Washington State.