



Leading the world's largest capital projects: Where science meets art

Through history, from the Great Wall of China to today's transport and energy infrastructure, major projects have set themselves apart—but what are the keys to success with leading the very largest projects?



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The impact of major projects—those with values of over \$1 billion—is immense. Their sheer scale sets them apart. Today’s large capital projects have an impact beyond the organizations engaged in running them; they can also influence wider industry dynamics, the regulatory landscape, and even geopolitical relations. Significantly, as a project’s size rises, its complexity in terms of strategy, design, financing, procurement and, ultimately, project execution, skyrockets. Inevitably, such projects are not without complications: on average, they are delivered one year behind schedule, and run 30 percent over budget. If this trend continues, \$5 trillion in value will be destroyed in the projects currently announced around the world.

The majority of research into failure in large capital projects concentrates on flaws in project management processes, standards, systems, tools, and technical mastery—the “science” of project management. While these topics are important, we find that insufficient attention is paid to the “soft” organizational and leadership elements of project delivery: we refer to these as the “art of project leadership.” Today’s successful major project leaders are perhaps defined by their ability to master a combination of practical judgment, political ability, and wisdom—in addition to their thorough grasp of technicalities, core project management systems, and processes.

Our report, [*The art of project leadership: Delivering the world’s largest projects*](#), focuses on the largest and most complex of capital projects, with budgets over US \$5 billion, and timeframes exceeding five years. Such characteristics bring unique complexities associated with project scale: multiple complex interfaces with stakeholders such as local communities and government bodies, new regulatory and environmental requirements, and often unique technological challenges.

Our research set out to answer two fundamental questions: 1) Why do such projects continue to fall

short of expectations despite so much experience, learning, discussion, and analysis? 2) What are the unique success factors deployed by those who have managed to avoid significant time and cost deviations? We asked experts in ultra-large project delivery for their insights; in-depth interviews with 27 practitioners tapped into over 500 years of collective project delivery experience.

We found that leaders tend to take the science part for granted—companies attempting large capital investment are often already implementing best-practice standards and processes. Instead, the practitioners we interviewed kept coming back to the importance of the right mindsets, practices, attitudes, behaviors, leadership capabilities, and organizational culture. As Jack Futcher, president and chief operating officer of Bechtel Group, told us in the 2017 report: “Process does not deliver projects; leadership does, and has to trump process.” These interviews also supported our hypothesis that such factors gain importance with increasing project size and complexity. Further, despite being branded “soft,” the reality is that these factors can be the most difficult elements to embed within the organization.

Based on our research and interviews, we synthesized the critical elements of this art into four distinct mindsets and eight practices, four of which are relevant to the project setup phase and four to project delivery.

Mindsets

Mindsets play a critical role in the development of ultra-large projects. Good systems and processes will positively influence team behavior to a certain extent, but success or failure is largely determined by how well a team works together. Team mindsets inform the multitude of decisions and interpersonal interactions that occur on a project. Constructive mindsets lead to good decisions and strong trust-based relationships, which in turn lead to high team morale and excellent performance.

We identified four mindsets that should underpin the development of the project from start to finish:

- **Lead as a business, not as a project.** An ultra-large project is more akin to building a business than executing a construction project, requiring CEO-level leadership and judgment to address a broad range of organizational issues.
- **Take full ownership of outcomes.** The project owner needs to maintain full accountability for delivery, remaining well informed throughout and ready to step in to make tough decisions in a timely manner.
- **Make your contractor successful.** Owners and contractors work best as a business partnership with a mindset of “we win together or lose together”. Productive contractor-owner relationships are based on mutual trust and joint problem solving.
- **Trust your processes, but know that leadership is required.** Processes alone will not resolve every challenge on an ultra-large project. Leaders should trust and enforce the appropriate process, but recognize their benefits and limitations.

These mindsets need to be adopted across the project organization and the broader owners’ team, not just the top management of the project itself. Owners and project directors should create an environment in which these mindsets shape the way the team approaches its day-to-day work and how members interact with one another, with contractors, and other stakeholders.

Setup

Unsurprisingly, the project setup phase is fundamental to establishing healthy management practices that deliver successful project outcomes. “The way you start is the way you finish,” one of our report interviewees noted. Another, Grant King,

former managing director and CEO of Origin Energy, added: “I don’t think anything avoids the need to think deeply about how you set these projects up, how you get the right people in the ventures, and how you get the right behaviors between the partners and through the contractors. I think it’s all about the beginning.” There are four setup practices that leaders should uphold as crucial:

- **Define purpose, identity, and culture.** Effective project teams should have a unique shared identity, and create a culture of mutual trust and collaboration. Project leaders should articulate purpose, role model behaviors, and nourish the desired culture.
- **Assemble the right team.** Owner and contractor team members need the appropriate blend of leadership qualities, cultural and local awareness for the task ahead, complementing the requisite technical skills and experience.
- **Carefully allocate risk and align incentives.** Successful owners thoughtfully delegate only those risks that the contractor is better positioned to manage. Leaders should establish and maintain relationships—not only contracts—to facilitate ongoing alignment of incentives.
- **Work hard on relationships with stakeholders.** Strong and transparent trust-based relationships with stakeholders enable prevention and rapid resolution of problems. Invest in stakeholder management as a core activity. Setup needs a strong focus on building constructive relationships—especially trust—internally and externally, to resolve issues early in the project timeline that would otherwise impede delivery. Trust is also critical to productively addressing the inevitable crises that arise in projects of this size and complexity. Done right, this phase sets up the project as you mean to go on for its full operating life.

Delivery

By the time a project reaches the delivery phase, many of the key decisions have been made, yet unexpected challenges inevitably arise. Our research indicates that project leaders should focus on four practices throughout this phase.

- Invest in your team. Delivering an ultra-large project requires continual investment in the effectiveness of the team. Leaders must think deeply about how to develop and challenge their people throughout.
- Ensure timely decision making. This depends on the delegation of decisions to the lowest appropriate level, so leaders must have confidence and trust in their systems and people. They are then free to anticipate and resolve critical issues.
- Adopt forward-looking performance management. Effective project leaders use fact-based performance dialogues to strengthen trusting relationships and instill accountability. This allows for early problem resolution and opportunity identification.
- Drive desired behaviors consistently. Effective leaders inspire their teams—especially in challenging times. They define, communicate, and role model expected attitudes and behaviors. Leaders should take the time to connect with team members on a personal level.

We believe that by embracing these mindsets and practices, project leaders can dramatically increase the chance of successful delivery of large projects. ■

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