

The logo for FMI (Federation of Materials International) is displayed in white serif font on a dark blue background. The letters 'FMI' are large and bold, with horizontal lines above and below them.

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The background of the top half of the page is a collage of construction-related images. On the right, two construction workers in safety vests are talking on a steel structure. The rest of the background is a textured, blue-tinted image of a construction site with scaffolding and structural elements.

Megaprojects: Five Leadership Success Ingredients

By Sabine Hoover

How owners and project stakeholders are changing the way they work together to deliver successful megaprojects.

The widespread shortcomings and low success rate of megaprojects have been so pervasive that those involved have begun to question the very model. The [recent exits](#) of prominent engineering and construction (E&C) players in certain types of megaproject markets indicate the situation may be coming to a head.¹ Yet, at the same time, megaprojects are constantly growing larger and increasing in number and complexity. Consider this: Between 2013 and 2018, the annual value of U.S. megaproject starts increased from 3% to approximately 33% of all U.S. construction project starts. Similarly, FMI predicts that *over the next decade, annual construction put in place (CPiP) on megaprojects in the U.S. will increase nearly 600%*, from about \$50 billion to just over \$350 billion (**Exhibit 1**).

These are big numbers. So what does this mean for the future of the E&C industry? Will we continue tormenting ourselves with project delays, cost overruns, lawsuits and political debacles until the end of time? Or has the industry finally reached a point where we can say “[no more](#).” The verdict is still out, but we are starting to see signs of a cultural shift in how owners, contractors and designers collaborate and interact with one another on megaprojects.

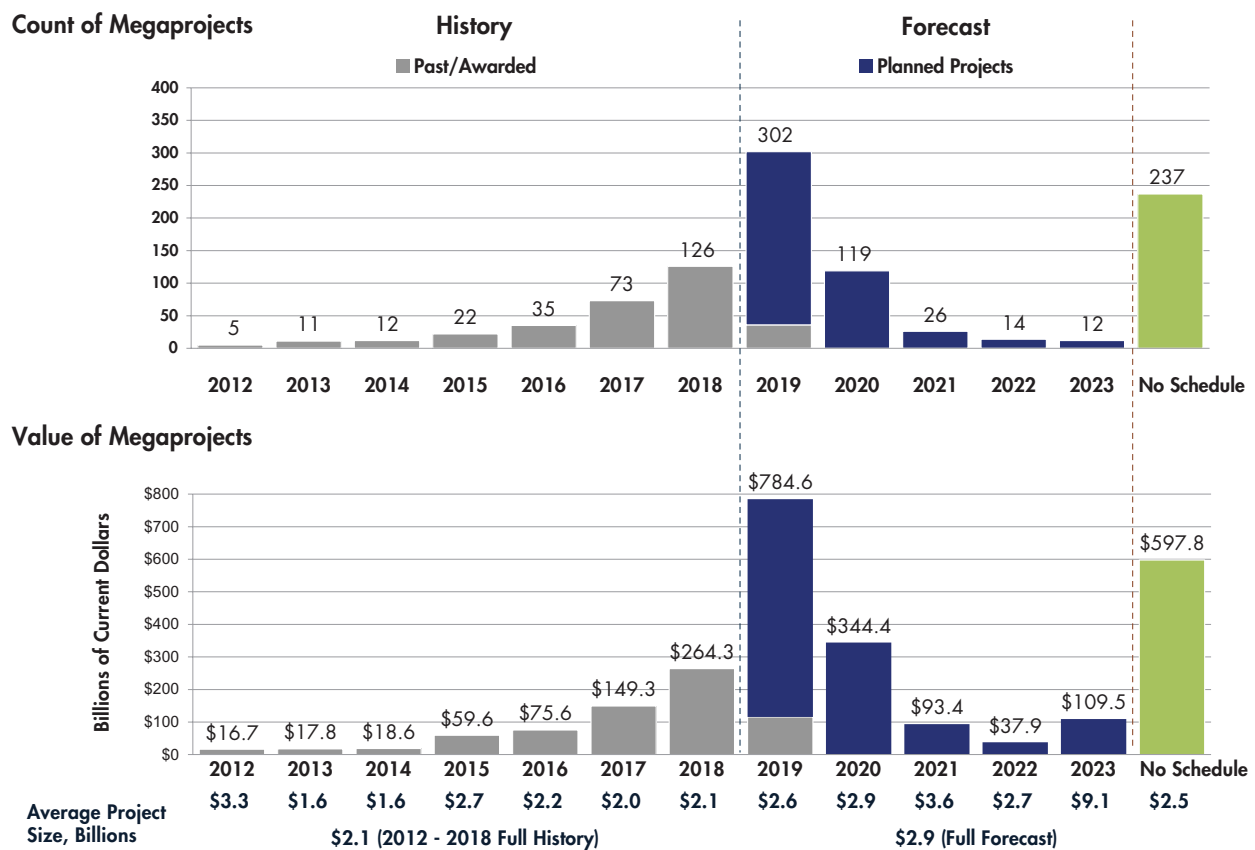
In this article, we share insights from industry leaders on five key ingredients that drive successful megaprojects and offer questions and recommendations around how to change the name of the game.

¹ Debra K. Rubin and Mary B. Powers. “After Bottom-Line Hits, More Firms Exit Fixed-Price Work.” ENR. August 7, 2019.

Looking Ahead: More and Bigger Projects

Our [research](#) indicates that at least 320 megaprojects have been awarded in the U.S. since 2012—a staggering investment valued at over \$700 billion. Additionally, another 670-plus megaprojects are being planned, representing a future investment opportunity likely to reach \$2 trillion (**Exhibit 1**). Most of these planned megaprojects are expected to be built in the South and West, with three states accounting for 40% of the total starts value (New York, 15%; California, 15%; and Texas, 10%).

**Exhibit 1. U.S. Megaprojects, Historical and Planned Activity
Construction Starts/Awards, as Reported**



Source: FMI, building permits, ConstructConnect, Dodge

With owners and E&C firms embarking on ever-larger projects, industry stakeholders are being challenged to take a completely new look at how to tackle the next generation of complex megaprojects.

“Megaprojects are a completely different breed of project in terms of their level of aspiration, lead times, complexity and stakeholder involvement,” said Bent Flyvbjerg, a research authority in the realm of megaprojects at Oxford University’s Saïd Business School, UK. “Consequently, they are also a very different type of project to manage. A colleague of mine likes to say that if managers of conventional projects need the equivalent of a driver’s license to do what they do, then managers of megaprojects need the equivalent of a pilot’s jumbo jet license.² And, just like you wouldn’t want someone with just a driver’s license to fly a jumbo jet, you wouldn’t want conventional project managers to manage megaprojects.”³



Wanted: A New Mindset

Much has been written and researched about the very low success rates (measured by achieving budget, schedule and economic business case) of complex megaprojects. In fact, globally, *less than 1 in 1,000 megaprojects* achieves its promised outcome.⁴

On the flip side, success with megaprojects is so rare that very little has been reported about what does make them successful. This is why the [Construction Industry Round Table \(CIRT\)](#) partnered with FMI to investigate leadership best practices associated with megaprojects.

In this first research phase, the FMI team interviewed 22 industry stakeholders, including owners, contractors, designers and academics who have been involved in both successful and unsuccessful megaprojects during the past decades. Findings are based on these qualitative interviews and are synthesized into five themes that interviewees consistently brought up as key ingredients to delivering successful megaprojects.

- 1. The Trust Factor.** Study participants talked about the issue of trust in almost all conversations and its role in megaproject success. Stakeholders on successful megaprojects invest a lot of time upfront in building trust through off-site meetings, getting to know each other on a personal basis. While trust is essential to any healthy relationship, it doesn’t happen right away. You must build it, develop it and then continue to work at it. This takes time, and successful owners and project stakeholders are very deliberate in the way they build trust and communicate with one another—long before the project has even begun.

² The colleague is Dr. Patrick O’Connell, practitioner director of Major Programme Management at Oxford University’s Saïd Business School.

³ Bent Flyvbjerg. “What You Should Know About Megaprojects and Why: An Overview.” *Project Management Journal*. April/May 2014.

⁴ “Changing the game. How Australia can achieve success in the new world of Mega-projects.” *Australian Constructors Association*. 2015.

2. **A Culture of Cohesion and Collaboration.** Keith Molenaar, associate dean for research at the University of Colorado Boulder, in collaboration with the Pankow Foundation, studied more than 200 different building projects and found that cohesion and collaboration were the keys to success. In fact, they learned that contract type or project delivery method did not determine project success. Instead, early involvement of team members—and a collaborative environment—were more influential in driving success rather than the contract type itself. Furthermore, the research uncovered that qualifications-based selections generated positive project outcomes, whereas price-based selections resulted in less positive project performance.
3. **Transparent and Authentic Leadership.** Flexible, open and transparent leadership plays a crucial role in the success or failure of megaprojects. Developing such a culture takes time and requires trust and authenticity from all participants. Effective megaproject leaders are experts in developing a team environment that fosters emotional engagement, shared purpose and accountability, and is safe for constructive feedback and open discussions (versus blaming) across all project levels.

“Successful megaproject teams must have a strong project culture, strong project leadership and excellent execution. Regardless of the project in question, good leadership starts with a willingness to be authentic, transparent and vulnerable,” says UC San Diego Associate Vice Chancellor Eric Smith, who serves on a leadership team for Capital Program Management. “People respond to those types of leaders because there’s a natural empathy between human beings that kicks in, and that creates a desire to help solve the problem and to make everyone successful.”

4. **Nimble and Autonomous Teams.** Megaproject stakeholders often centralize decision-making to minimize project complexity and quell anxieties, thus creating bureaucratic gridlocks and costing project stakeholders millions of dollars daily. Successful megaproject teams are breaking out of this mold and setting up smaller, more nimble project teams that can move quickly. Like the platoon model for Marines, these teams enjoy a certain degree of autonomy and are empowered to make decisions without approval from the top, and at each decision point.

Some companies use this team structure to help grow and develop individuals into new roles. “With this nimble decision-making model, people who work on megaprojects for years can see the opportunity for growth,” Charlie Holm, senior project manager with Fortis Construction, explains. “For example, someone who’s on the quality team might strive to be the quality team lead. And if he or she achieves that, then there’s the opportunity to become the project team lead further down the road. We’ve been very successful with this concept.”

5. **Educated and Experienced Owner.** All interviewees agreed that owners make or break projects. This isn’t news, but skilled and experienced owner-employees are especially critical on megaprojects. Several interviewees from owner organizations had worked in construction or design (or both) before taking on roles on the owner side. As a result, they had intricate knowledge of how contractors and designers approach risk allocation, cost estimating, scheduling and so forth, and brought more of a partnering approach to the table (rather than an adversarial attitude).

Bill Spragins, a former principal with FMI and an expert in the project team alignment/partnering arena, said, “In the end, all parties contribute to the success or failure of any given project. However, owners ultimately must lead and establish an environment for success on how business will be conducted. So, while a proactive contractor can certainly help resolve any given difficult issues that arise, it is nearly always the owner who must be the guiding light in these situations.”

Paving the Way for the Future

With the ongoing power shift toward urban areas or “megacities,” industry players involved with megaprojects need to start asking themselves questions like:

- Can I compete in this new megaproject landscape? And if so, where?
- What type of project risk assessments are now required, and what are the risk profiles I am (or am not) willing to play in?
- What are the implications for my business? For example, what operational structure and processes are required?
- What leadership competencies and team structures are needed? How can communication be improved for different project sizes?
- What partners should I team up with? Which owners should I target?
- How do I invest in building my company with top-tier talent? And how do I source and/or evaluate such talent?
- What can my company do differently to plan and deliver larger and more complex projects?

With a small group of E&C players and owners willing to deploy a fresh, collaborative, team-based approach to megaprojects, the future is beginning to look brighter for these types of endeavors. Driven by societal trends like urbanization, the opportunity to get involved with such projects is sure to expand over the coming years.

Those companies that adopt a “one-unit” mindset—unified by a shared sense of purpose and a fair business model—rather than working as separate entities against each other, will be most successful. While this seems simple enough in theory, it’s surprisingly difficult to get right. The choice is yours. How will you participate, and what will you bring to help shape or change the megaproject conversation today?



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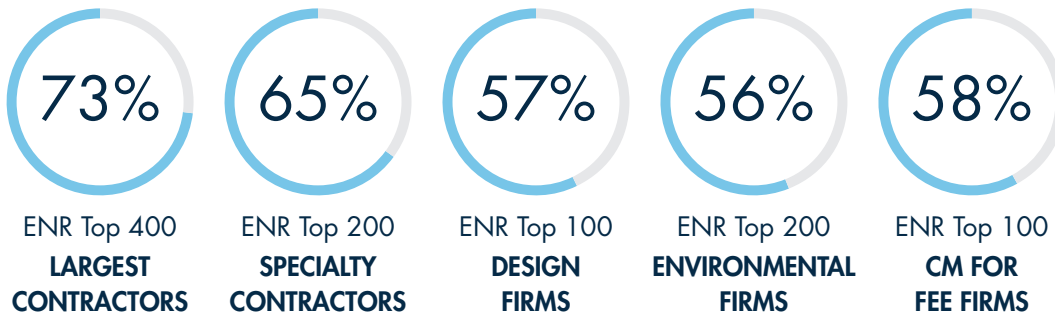
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