Megaproject leaders: Shifting the focus from technical to people leaders
Executive Summary

Megaprojects are high-profile and high-risk projects. As macroeconomic challenges persist around the globe, and perhaps especially during this particularly challenging period, companies face high stakes when it comes to appointing the right leaders for these projects.

Russell Reynolds Associates examined the demographics of 31 successful megaproject leaders, including owner-side leaders in mining, oil and gas, and industrial infrastructure, as well as major engineering, procurement and construction (EPC) project leaders on the build-side. We also looked at the competencies required for a successful megaproject leader based on a customized competency model. In addition, we interviewed a number of senior executives leading and managing today’s megaprojects to test and validate our views.

Our findings suggest that there is an overwhelming emphasis on tenure and experience as proxies for an individual’s readiness for the megaproject role but that the most crucial elements are the less quantifiable ones: the innate ability to establish excellent processes and governance, drive productivity through engaged management and ultimately lead people rather than simply managing the technicalities of the project.

We see the continued increase in projects’ scale and complexity, their truly global character and the need for leaders to be “CEOs of temporary organizations” as the three most impactful trends for megaproject leaders of the future. Whatever industry their project may reside in, we have identified six key differentiators that can help assess the future success of these megaproject leaders.
Why it matters

The megaprojects that have emerged across the world in recent years can be understood as the product of the convergence of multiple macro trends, including the trends toward megacities and urban sprawls; increased international travel and interwoven economies; sustainability; a variety of construction methodologies; modern connectivity; and more. They are a necessary part of continued human development.

The state of commodity prices continues to put pressure on mining, energy and related industries, though government and infrastructure projects are seeing more attention in the down cycle. Key projects are being suspended, divested and reconsidered in the interest of protecting balance sheets and corporate survival. However, it would be erroneous to suggest that megaprojects will become less common in the future. An Ernst & Young report on mining and metals megaprojects noted that projects will continue to be developed. This is because of the long lead times of approvals and construction for these projects and the need to prepare for the next upcycle in the industry.\(^1\)

In fact, as megaprojects become an increasingly central feature of engineering and construction, the leadership of such projects becomes more and more crucial. For example, it is estimated that nine out of 10 megaprojects exceed their budget. Rail projects exceed their budget by an average of 44.7 percent, bridges and tunnels by 35 percent, and roads by 20 percent. These same projects are usually approved with the expectation of a 20 percent return on investment.\(^2\)

The downturn, therefore, provides company leaders with an opportunity to turn their attention from the day-to-day operation of each project to the governance of the project as a whole and to think strategically and long term about the company’s bench of project leaders. At the same time, the commodity market downturn has introduced more easily attractable, well-qualified and high-potential talent to the market, creating the perfect opportunity for companies to review the strength of their projects’ leadership and plan for continued success by hiring beyond the ability to lead projects and looking for leaders who can rally entire project teams to success.

The talent need is twofold. Megaprojects generally are managed with two project leaders at the helm: On one side, the owner-side megaproject leader represents the joint venture, company or government body that has commissioned the project. This leader’s primary focus is on ensuring the project is delivered to specification and answers to the project owner’s needs. On the other side, the build-side megaproject leader, employed by the contractor engaged to execute the project, is responsible for the successful planning and building of the project.

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\(^1\) “Opportunities to enhance capital productivity: Mining and metals megaprojects,” Ernst & Young, 2015.

A different breed of leader

Megaprojects are not merely scaled-up versions of their smaller counterparts. They are defined as projects that typically cost US$1 billion or more, yet the size of a project is an unreliable proxy for the project’s level of difficulty. Things like intricate partnership arrangements, brownfield modifications, the geopolitical landscape, and new technologies are just examples of factors that drive complexity. According to Greg Sills, an energy executive, “You may have smaller projects more complex than larger ones, and it is that complexity—not measured by size or scale—that will define the skills required of a project leader.”

Given that these extremely complex, high-risk projects are essential to modern life and will underwrite future economies and communities, what kind of leader is required at the helm? To date, companies seeking megaproject leaders have focused on individuals’ past project experience, but even the most optimistic estimate suggests a single individual will likely have managed, at most, three to four megaprojects in his or her lifetime.³

Instead, companies should hire based on a hybrid of experience and potential and seek talent with the ability to manage the variety of factors that make megaprojects so challenging:

- The urgency and cost pressures of the project;
- Commercial, political, financial and environmental risks; and
- The project’s strategic importance to the company, country and/or other stakeholders.

In short, companies need leaders with the ability to anticipate, mitigate and navigate the turbulence that is to be expected in managing these massive projects.

Profile of today’s megaproject leaders

It is challenging to gather statistically relevant data to build a profile of a megaproject leader due to the limited number of such executives worldwide. However, we profiled 31 of the world’s leading megaproject leaders, with the following results.

The majority of these leaders are male, with only five females in our sample (Exhibit 1). They tend to be more mature—81 percent of megaproject leaders surveyed were over the age of 50, and 19 percent were over 60 years of age (Exhibit 2). Maturity can be used here as a proxy for years of experience: Current megaproject leaders have spent an average of 25 years working their way up a focused career ladder.

The prevalence of mature talent suggests that the industry views years of experience as having a direct correlation with the executive’s fit for the magnitude of megaprojects. Filippo Abba, Executive Vice President at WorleyParsons, believes the challenge today is finding individuals who have had sufficiently significant project exposure to fill the shoes of a megaproject leader. In addition, he confirms the number of individuals willing to spend their entire career in project management is declining. Leading a megaproject requires more than 20-25 years’ experience in project management, and, contrary to the trend of past decades, individuals running projects today show greater interest in a move to a corporate function or in other options for career development.

As this talent resource becomes increasingly scarce, then, companies may be driven to divide megaprojects into smaller projects, which may result in even greater complexity in the management of the megaproject as a whole. Ultimately, companies still will need to appoint an overall project leader.

The potential good news for current megaproject leaders is that the demand for their capabilities means they will be retained longer than most senior executives.

“The challenge today is finding individuals who have had sufficiently significant project exposure.”
Prior to their appointment as a megaproject leader, close to half (42 percent) of both owner-side and build-side leaders were managing a preceding project. A quarter (25 percent) were project operations leaders prior to their current role. Other preceding functions include leadership of a company division; a pure engineering role; or even general management, strategy or corporate affairs (Exhibit 3). Hence, there are, even today, multiple avenues to becoming a megaproject leader.

We also found that only 14 percent of megaproject leaders have both owner-side and build-side experience, meaning the majority have built their entire career on one side. Both leaders, in essence, share the same goals but differ in their skill sets. EPC project leaders are expected to have bid for, and consequently won, the project. Greg Fauquier, former Global Project Director at Hatch, identifies commercial acumen as the main differentiator between the two: “EPC project leaders have to be able to win business. The same does not apply to owner project leaders. Therefore, the two leaders are not the same but should be complementary.”

A project executive at a major oil and gas company, emphasized the importance of technical expertise and stakeholder management in owner-side leaders: “A successful project director from the owner needs to be able to recognize what ‘good’ looks like, from project delivery to systems and planning, and have the wherewithal to manage expectations across the board.” The fact that megaproject leaders tend to “stay on one side of the fence,” rarely crossing over to the other side in their career, provides strength of evidence to our interviewees’ views that these two leaders have differing skill sets.

**EXHIBIT 3**
FUNCTION OF MEGAPROJECT LEADERS’ MOST RECENT PRECEDING ROLE

<table>
<thead>
<tr>
<th>Role</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project management</td>
<td>42%</td>
</tr>
<tr>
<td>Operations</td>
<td>25%</td>
</tr>
<tr>
<td>Division head</td>
<td>14%</td>
</tr>
<tr>
<td>Engineering</td>
<td>7%</td>
</tr>
<tr>
<td>General management</td>
<td>4%</td>
</tr>
<tr>
<td>Strategy</td>
<td>4%</td>
</tr>
<tr>
<td>Corporate affairs</td>
<td>4%</td>
</tr>
</tbody>
</table>
Competencies of megaproject leaders

The following competency framework was validated by a qualitative survey among industry leaders and follow-up interviews with those leaders. The framework is focused on three core categories of competencies: process, productivity and people, and the competencies listed below are those that were selected to be the top three most critical for owner and build-side megaproject leaders.

**TOP THREE CRITICAL COMPETENCIES OF SUCCESSFUL MEGAPROJECT LEADERS**

**PROCESS COMPETENCIES**
The skills that facilitate a project’s operation. They are typically performed with the support of dedicated teams within functions or departments.

**PRODUCTIVITY COMPETENCIES**
The skills that boost a project’s effectiveness. They typically manifest as policies laid out for the entire project organization.

**PEOPLE COMPETENCIES**
The skills that enable project personnel, from construction workers on-site to the project leader, to operate effectively.
Process competencies relate to the structure of a project, how decisions are made (governance), how the project interacts with its environment (stakeholder management) and how it proceeds through the stages of its life cycle (project life cycle management). These elements are so complex in a megaproject context that the function of its leader approximates that of a CEO of a temporary organization rather than merely an engineering-focused supervisor.

Owner-side and EPC-side leaders understandably diverged in one of the top three competencies. The owner organization is accountable for interacting with project stakeholders such as the surrounding community and relevant government, which places a strong burden for stakeholder management on the project leader. EPC-side leaders are focused on the way decisions are made day to day that impact the construction and operation of the project.

Productivity competencies relate to skills that improve the speed and quality of the project. The two sets of respondents aligned very strongly on these critical competencies.

People competencies determine the culture of any given project. The more cohesive the culture of a project, the more connected its workers feel to the vision of the project, its plans and the management of its challenges, which means morale has a greater chance of surviving the inevitable turbulence that meets projects of this magnitude. For Mike MacSween, Executive Vice President of Major Projects for Suncor Energy, these competencies come into practice when leaders are on the ground: “You have to be seen and be present—with your people, with your contractors, with your stakeholders.”

Leaders who lack the ability to build teams and trust among project peers may address the problem with assignment matrices and other tools to instill missing behaviors, but such tools rarely result in the collaboration that is crucial to success.
Succession planning is critical for the future

As projects continue to grow in scale and become more global, the profile of the leaders of these projects will naturally evolve in response to the need for greater skills. We have observed that both owner-side and EPC companies are biased toward technical accomplishments and years of experience rather than on their ability to handle complex negotiations with stakeholders and resilience in the face of turbulence and challenges.

While the latter are subjective and more difficult to measure than technical ability (whether measured by number of degrees or number of projects under one’s belt), the speed at which megaprojects are increasing in scale and technical complexity means even leaders hired for their technical expertise can quickly find themselves well outside their comfort zone. The megaproject leaders surveyed for this paper still agree that “experience has no substitute,” but hiring for the less tangible but crucial skills outlined in the previous section is a better guarantee of the project’s quality, process and outcome.

The talent shortage will mean both owner and EPC companies may find themselves needing to promote or recruit candidates into leadership posts who lack the extensive experience that is normally desired. Companies seeking to manage the resultant tradeoffs in promotion and hiring decisions should place greater weight on the three key competencies and leadership qualities discussed above.

To avoid an unfavorable situation, companies engaged in megaprojects need to make succession planning for existing projects and the active development of a bench of future leaders top priorities. This will include giving younger leaders key opportunities to expand their skill sets and test their innate resilience and relevant competencies. In addition, given the strong predominance of male executives, organizations should reassess possible gender bias in their processes and include sophisticated and diverse ways to identify quality megaproject talent from all possible talent pools.

Emerging trends influencing tomorrow’s leadership

Our interviewees identified three trends as the most influential on the behaviors, skills and experience that will be required by megaproject leaders of the future:

**GROWING SCALE AND COMPLEXITY**

The scale of projects in the future will be nearly incomprehensible, as will the complexity associated with them. These projects will require very sturdy foundations in the form of strong organizational structure and governance.

**TRULY GLOBAL MEGAPROJECTS**

Whether it be the capital required to back them or the talent and materials sourced to build them, there is not a megaproject in the world today that is financed, built and sourced by just one nation. Moreover, the geopolitical impact of any one of these projects is significant.

**CEOs OF TEMPORARY ORGANIZATIONS**

Megaproject leaders are essentially running a large, but temporary, organization that, in some cases, is capitalized to an amount exceeding the market capitalization of their parent company. The success of these projects leans upon more than the leaders’ technical expertise, requiring tactical and strategic skills in addition to strong communication skills and the flexibility and wherewithal to manage the inevitable turbulence.
Key differentiators of future megaproject leaders

While there will be no one perfect solution for all megaprojects, there are certain differentiating factors beyond the core competencies laid out previously that will support the growth of megaproject leaders from technical project leaders into people leaders.

Whether it be an open-pit coal operation, an offshore facility or a new infrastructure project, we believe the following six overarching intangible qualities will set apart successful megaproject leaders in the future:

**Strategic mindset**
- The ability to envision and shape the future, keeping the big picture and the project’s fundamental aims in view at all times

**Change leadership**
- The ability and willingness to consistently challenge the status quo, in the interests of ensuring the project’s success

**Communication in all its forms**
- The ability to listen and empathize and to articulate ideas and vision in a meaningful and compelling way to stakeholders from all walks of life

**Business acumen**
- The ability to understand the key business drivers of the project and leverage those drivers for the benefit of the organization

**Balanced decision making**
- The ability to strike a balance between consensus and room for discussion and collaboration, relentlessness in pursuing accountability and the desire to ensure that lessons are learned from poor decisions

**Political intelligence**
- The ability to engage with, and seek involvement from, every group of people in a project’s ecosystem
Russell Reynolds Associates is a global leader in assessment, recruitment and succession planning for boards of directors, chief executive officers and key roles within the C-suite. With more than 370 consultants in 46 offices around the world, we work closely with public, private and nonprofit organizations across all industries and regions. We help our clients build teams of transformational leaders who can meet today’s challenges and anticipate the digital, economic, environmental and political trends that are reshaping the global business environment. Find out more at www.russellreynolds.com. Follow us on Twitter: @RRAonLeadership.

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