



Leadership & Management of Megaprojects: Strategic Insights from the Columbia Executive Education Program

June 2025

A GLCM STUDY



Preface

Over the past decade, the landscape of megaproject delivery has undergone profound changes, driven by increasing complexity, heightened stakeholder expectations, and the need for innovative leadership approaches. In response to these evolving challenges, leading experts, industry professionals, graduate-level students, and academics gathered for an exclusive program: **Leadership & Management of Megaprojects**.

This Columbia Executive Education Program, conducted in June 2025 in partnership with Columbia University and industry-leading companies, initiated an in-depth exploration of leadership dynamics in megaproject management.

This report summarizes key insights from the Columbia Executive Education Program and its eight 8 class sessions, including megaproject case studies, industry panel sessions, and presentations by noted industry leaders. It focused on five pillars: planning and execution, leadership vs. management, governance, risk, and innovation, including digital transformation, and practical applications. The program focused on how a clear mission is essential to align stakeholders and guide complex projects, while leadership requires navigating challenges with a steady sense of purpose. Governance is an adaptive process that transforms vision into effective frameworks and fosters collaboration. Innovative risk management, supported by technology but grounded in expert judgment, is critical in mitigating the challenges that can impact a megaproject. Sustainability and legacy are key to creating lasting value, demanding forward-looking planning alongside strong public engagement.

The team highlighted core critical themes for success in leading megaprojects and distilled them into Ten Essential Strategic Takeaways. Drawing on rich discussions and lessons from multiple sessions, these practical “Top 10 Key Takeaways” provide executives with a quick-reference guide for steering megaprojects.

Thank you for being part of this meaningful journey to shape the future of megaprojects and leaders.

Warm regards,

Dr. Ibrahim Odeh.

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Executive Summary

In June 2025, Columbia University's Department of Civil Engineering & Engineering Mechanics hosted an intensive executive education program on Leadership & Management of Megaprojects. This white paper distills the key insights, case studies, and lessons learned from the eight-session program, which convened leading industry experts and senior executives in infrastructure, construction, and capital program management. The program addressed the unique challenges of delivering megaprojects and explored how strategic leadership, in conjunction with traditional project management, drives success in these complex initiatives.

Over the course of the program, participants examined global industry trends, governance models, digital transformation, risk management frameworks, and real-world case studies of iconic projects. Each session combined expert presentations with interactive discussions, allowing participants to reflect on how bold leadership, early stakeholder engagement, innovation, and an emphasis on long-term value can significantly improve megaproject outcomes. Like the blueprint of a vast structure, Columbia University carefully designed the program and the companies listed in the Appendix. The objective wasn't just to teach; it was to provoke and equip participants to lead amid ambiguity, across continents, with an eye on today's challenges and tomorrow's legacy. Within this paper, readers can find megaproject summaries and top takeaways from a strategic point of view.

Ultimately, this document summarizes each session's focus and highlights participants' reflections to capture the voice of industry executives. It concludes with Top 10 Key Takeaways for executives leading megaprojects, and a call-to-action to continue this learning journey through Columbia's Global Leaders in Construction Management (GLCM) network.

Key Themes from the Program

This program is organized around the central pillars discussed across sessions:

- Planning and Execution of Megaprojects
- Leadership vs. Management
- Governance Structures
- Risk, Innovation & Digital Transformation
- Real-World Case Applications

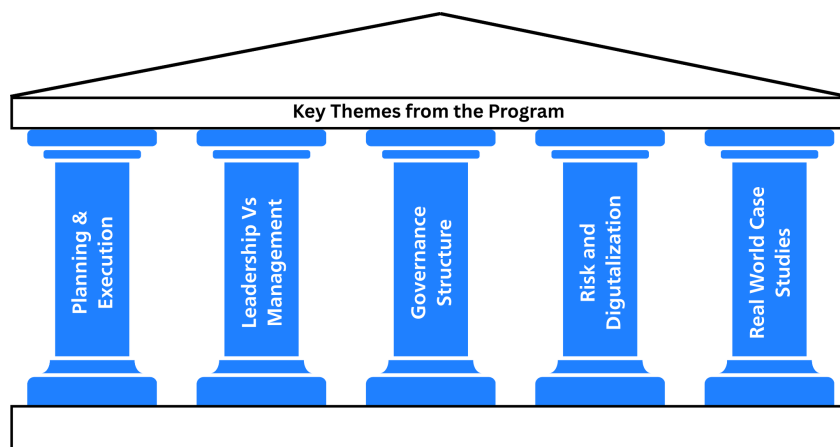


Figure 1: Key Themes from the Program

The success of megaprojects depends on a clearly defined purpose that guides execution and aligns stakeholders. A well-articulated mission drives coordinated efforts and maintains focus throughout the project lifecycle. This is evident in initiatives such as the carbon-neutral objectives of the Lower Thames Crossing and the strategic legacy planning for the Los Angeles 2028 Olympics. Leadership in this context involves stewarding the project's purpose while navigating complex negotiations, budget adjustments, and unforeseen challenges. Governance is a fundamental component that requires continuous alignment among diverse stakeholders. Case studies such as Crossrail, Riyadh Metro, and JFK New Terminal One demonstrate the importance of governance as a dynamic and adaptive process rather than static bureaucracy. Effective governance translates vision into structured frameworks, clear contractual obligations, and constructive dialogue among parties with differing interests. As discussed, governance models must change as a megaproject progresses through the different phases to deal with various stakeholders and challenges.

Megaprojects inherently operate under uncertain conditions, necessitating innovative risk management approaches. Sessions highlighted hidden risks such as “white space” risks and cascading constraints, alongside strategies to mitigate these challenges through predictive modeling, digital twins, and systems thinking. While technological tools provide valuable support, the ultimate success depends on applying sound judgment and expertise.

Lastly, sustainability and legacy are critical considerations in megaproject delivery. Projects that integrate thoughtful design, policy alignment, and effective public communication generate lasting value, as exemplified by London's Olympic Park and the Riyadh Metro. Sustainability today transcends regulatory compliance, requiring visionary planning that accounts for long-term societal impacts and intergenerational benefits.

Global Industry Overview and Trends

Prof. Odeh and Prof. McManus began the course by presenting a series of global trends and factors, such as population growth and global urbanization, that are affecting the international construction industry and yielding a significant increase in the size and number of megaprojects around the world. The challenges megaprojects face regarding cost and schedule overrun across all asset classes demonstrate how leadership of these massive undertakings is essential. It was discussed how the global construction industry is the most fragmented and continues to be impacted by poor productivity, an under-investment in technology and research & development, and an aging workforce. Solutions to these challenges were presented, showing how digital transformation, collaborative contracting methods, enhanced use of data analytics, and further investments in the people in our industry are essential to meet megaprojects' demands on the global supply chain and our world.

1. Megaproject Case Studies



Figure 2: Location Map of Showcased Megaprojects

1.1 Lower Thames Crossing (LTC)

*Presented by **Katharina (Kat) Ferguson**, Supply Chain Development Director, UK National Highways (Lower Thames Crossing).*

Ferguson began with a question: Can a megaproject be massive and mindful? The answer came through innovation in procurement, alignment with carbon standards, and a radical rethinking of the supply chain. The LTC Leadership Team's approach—integrating carbon-reduction milestone criteria into early procurement and design—enabled a ~50% decrease in CO₂ emissions with no increase in cost. The session showed how the project's road symbolized ambition tempered by environmental responsibility.

“What stood out to me was how carbon goals were embedded from the beginning, not just as an environmental checkbox, but as a constraint that encouraged innovation. The fact that they achieved a 50% CO₂ reduction with no additional cost changed how I think about sustainability in procurement and design. It's not a trade-off; it's a trigger for smarter decisions.”

“The Lower Thames Crossing showed us that treating sustainability as a central goal – not a side checkbox – can unlock innovation and build stakeholder trust, all without adding cost.”

Participants noted that business-as-usual practices cannot manage megaprojects; they require leaders who can inspire and align diverse stakeholders behind a shared vision. The contrast between mere project management and genuine leadership struck many.

“A megaproject leader's job is to inspire a shared vision across all stakeholders – not just manage tasks and schedules.”

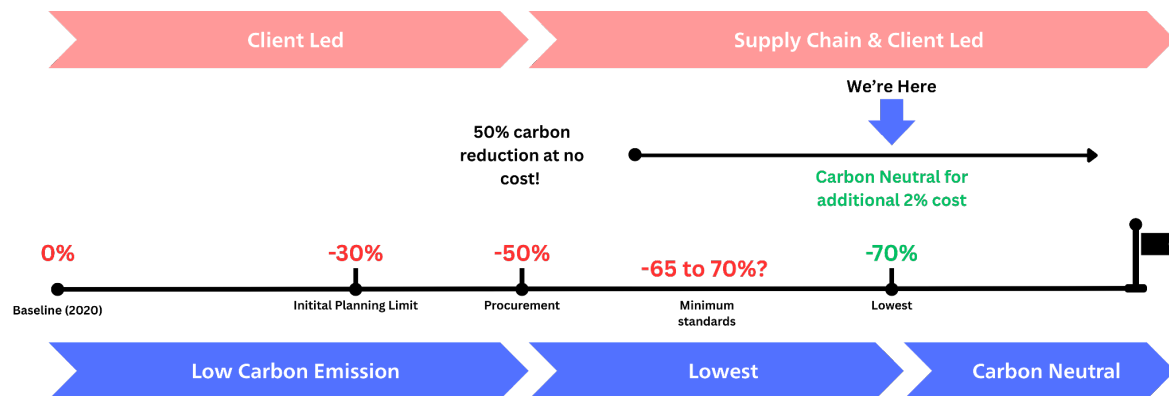


Figure 3: Lower Thames Crossing route to Decarbonisation

The Lower Thames Crossing project illustrated how bold goals and early engagement across the supply chain can drive innovation and meet sustainability targets without added cost. The core message emphasized the importance of visionary leadership and early planning to tackle structural problems in today's complex, climate-conscious urban environment.

1.2 JFK Airport New Terminal One

Presented by Dr. Gerrard P. Bushell, Executive Chair, The Carlyle Airport Group / New Terminal One.

The redevelopment of JFK Airport's New Terminal One demonstrated challenging conditions such as limited space, tight timelines, and stringent regulations. It can serve as a catalyst for enhanced creativity and innovation, rather than constraints. Dr. Gerrard P. Bushell shared the story behind New Terminal One: a \$9 billion public-private partnership, among the largest in the country. A private group led by Carlyle stepped up with 60% of the funding and took on risks usually handled by the public sector. More than just financing, the company leaned into local impact investing, its own money during COVID to keep the project alive and focused on inclusion and equity.



Figure 4: Port Authority of NY & NJ, "Overhead rendering of JFK New Terminal One," CC BY-NC-ND 2.0

The session highlighted how the role of megaproject leaders is shifting. It's no longer just about delivery; it's about managing trade-offs, using new financing tools, setting meaningful goals, and keeping all voices at the table. Participants were struck by how a strong, purpose-driven structure helped align every part of the project. One takeaway stood out:

"This is infrastructure leadership rooted in values — transformational, not transactional."

The JFK New Terminal One Redevelopment demonstrated how policies and mission-driven leadership can turn constraints into catalysts. The project went beyond transactional delivery by embedding equity, inclusion, and long-term impact into its core strategy. The private consortium's willingness to invest at risk, especially during COVID, demonstrated a deep alignment with the project's purpose. Innovative financing tools like green bonds and performance-based contracts ensured accountability while maintaining flexibility. The case reinforced that successful P3 leadership means more than funding; it's about aligning public goals with private commitment, balancing complexity with clarity, and putting values at the center of execution.

1.3 Heathrow Airport Terminal 5

Presented by Murray Rowden, Global Head of Infrastructure, Turner & Townsend

Murray Rowden, Director of Global Infrastructure for Turner & Townsend, presented how Heathrow Airport Terminal 5 was a highly complex infrastructure project due to its scale, integration with existing airport operations, and the need to maintain safety and efficiency during construction. The terminal incorporates cutting-edge architectural design, advanced baggage handling systems, and seamless rail and road connectivity to handle high passenger volumes.

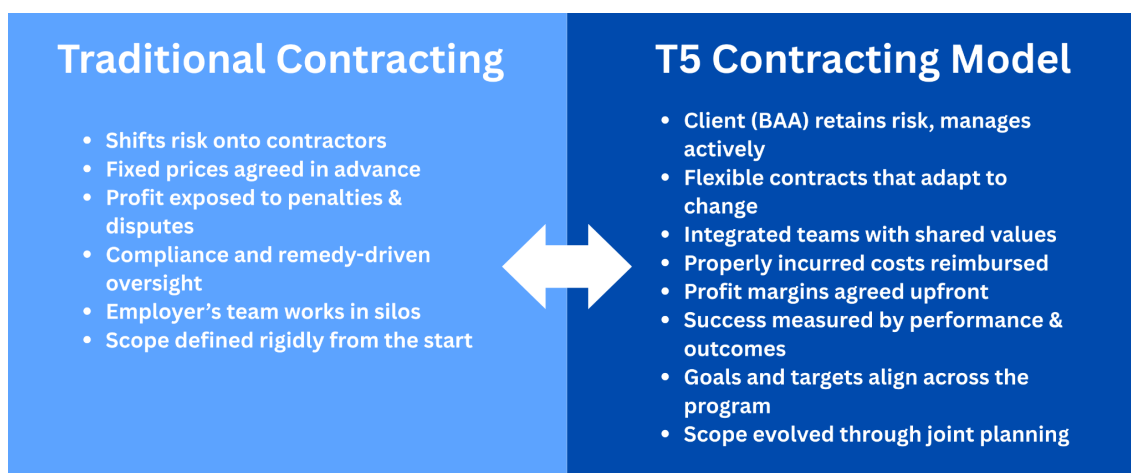


Figure 5: T5 Contracting Approach

The session focused on how digital transformation and new collaborative contracting models reshape megaproject delivery. Participants acknowledged that traditional linear delivery models are no longer sufficient for today's megaprojects. As one participant put it, the project was a "wake-up call" for how risk and collaboration could be handled differently: when the client does not offload risk, the entire supply chain's behavior improves.

“We learned that even the best tech won’t deliver results without the right people, processes, and culture in place to support it.”

The Heathrow Terminal 5 case stated that while digital tools can support delivery, success in megaprojects requires cultural and structural readiness. By adopting a relational contracting model in which the owner retained all project risk, the project fostered a high-trust, collaborative environment that emphasized shared goals, behavioral alignment, and system-wide adaptability. It offers a compelling model for future megaproject delivery in an increasingly digital and complex world.

1.4 The Gateway Program

*Presented by **Kris Kolluri**, CEO of New Jersey Transit, and former CEO of Gateway Development Commission; **Eric Daleo and Megan Strickland**, Managing Directors, Telos Advisors.*

The Gateway Program is a massive rail upgrade linking New York and New Jersey, involving tunnels, bridges, and major system overhauls. What made it stand out wasn’t just the scope, but how it was set up. Kris Kolluri, Eric Daleo, and Megan Strickland shared how success was built into the foundation, with a dedicated organization and tailored governance that brought together federal, state, and local players. The lesson was clear: governance should fit the project’s reality, not follow a generic playbook.

The Hudson Tunnel Project is a critical component of the Gateway Program aimed at constructing a new two-track rail tunnel under the Hudson River to increase capacity and provide redundancy to the aging North River Tunnel. The project involves advanced underwater tunneling techniques and integration with existing rail infrastructure while ensuring minimal disruption to current commuter services in the New York and New Jersey area.

The Gateway Program highlighted the importance of designing governance to fit the scale and context of a megaproject. Rather than applying a standard model, leaders created a dedicated structure that aligned diverse public partners from day one.

1.5 Champlain Hudson Power Express (CHPE)

*Presented by **Gene Martin**, President, Transmission Developers Inc. (TDI)*

CHPE (Champlain Hudson Power Express) is a high-voltage direct current (HVDC) transmission project designed to deliver clean hydroelectric power from Canada to New York City. Gene Martin presented how the project involves complex underground and underwater construction requiring extensive coordination across multiple jurisdictions and stakeholder groups.

The discussion of CHPE led participants to reflect on the often-underappreciated role of labor unions, local politics, and jurisdictional coordination in project execution. Hearing about the extensive union negotiations and the unprecedented locations required for CHPE’s underwater cable opened many eyes. One participant shared their takeaway:

“It was fascinating to learn that understanding union jurisdictions along the project route was key to CHPE’s success. Their project labor agreement spanned almost all of New York State, with 568 cable splices across the entire alignment – a first-of-its-kind challenge in the U.S. It’s a factor we might take for granted on projects that don’t pass through so many jurisdictions.”

In the CHPE session, participants noted that soft factors such as labor agreements, local government support, and community sentiment shifts can determine the success or failure of megaprojects.

1.6 Crossrail

*Presented by **John Williams**, President, Bechtel Infrastructure (Northeast US & Canada)*

John Williams showed how Crossrail is a major railway infrastructure project in London that will increase transport capacity by creating a new east-west rail link. The project includes tunneling, station construction, and integration with existing networks, representing one of Europe’s most significant and complex urban rail developments. Adding a senior-manager level team member at the mid-project created administrative and executive issues, and the case study offered valuable insight into the consequences of such decisions.

“Introducing a new Infrastructure Manager (Rail for London) mid-project sounded like a good idea, but it delayed Crossrail by over a year. Even a seemingly logical change added huge complexity. The silver lining was seeing how, despite those challenges, the team eventually got the Elizabeth Line back on track and completed it.”

Participants noted that effective leaders dedicate as much effort to social license and stakeholder relationships as they do to engineering or finance. Finally, they were struck by how a well-intentioned governance change (creating a new entity, changes in directory levels to run the line) introduced unexpected risk in the middle of the project.

1.7 Los Angeles 2028 Olympic Games

*Presented by **Bill Hanway**, Executive Vice President, AECOM (Planning Director, LA28)*

The Los Angeles 2028 Olympic Games represent one of the most ambitious urban transformations in recent U.S. history. From upgrading venues to improving transit and public spaces, the effort is about more than just sports; it’s about preparing a city to welcome the world while continuing to serve the people who live there daily.

A core challenge in such global events is balancing short-term visitor needs with long-term city life. The discussion opened with Bill Hanway (AECOM, Los Angeles 2028 Planning Director), who shared how the team uses a live risk register to stay ahead of competing priorities and make decisions that minimize major schedule or cost risks. He noted ongoing coordination with agencies like Caltrans, LA Metro, and city departments, much of which is structured through dedicated “Functional Areas” that meet regularly to align plans.



Figure 6: “SoFi Stadium” by Troutfarm27, via Wikimedia Commons, licensed under CC BY-SA 4.0 (<https://creativecommons.org/licenses/by-sa/4.0/>).

This session also brought us back to one of the program’s big ideas: the gap between project management and megaproject leadership. Managing is tracking tasks while leading, setting direction, building trust, and navigating complexity. Panelists emphasized that most megaproject failures don’t come from bad tools or plans, but from a lack of authentic leadership. An important insight from managing megaprojects is that leaders rarely have complete control over all program elements. In these complex and dynamic environments, leadership is defined less by formal authority and more by strategic communication, relationship management, and the capacity to steer collaboration under pressure. Core qualities such as resilience, ethical integrity, and the confidence to make difficult decisions early are essential to prevent emerging issues from developing into significant risks.

“In a megaproject, you can’t just manage problems after they arise – you need to lead in a way that prevents crises in the first place. Without leadership guiding the ship, technical fixes won’t save a project.”

The discussion also touched on lessons from global contexts. In developing regions, megaprojects must be vehicles for capacity building, not just importing labor, but growing local skills and mentoring small businesses. Others shared how global delivery models must adapt to local realities (including cultural holidays or labor structures) to succeed.

The **Los Angeles 2028 Olympics** challenged the idea that megaproject success depends on building more. Instead, the team leaned into adaptive reuse, minimal new construction, and legacy-first thinking by planning from the end, not just the start. What made it compelling was how early alignment around a business case shaped decisions across delivery, risk, and stakeholder engagement. The session also reinforced a recurring theme: megaprojects are a people business. Emotional intelligence, collaboration, and clarity of purpose often matter more than tech or tools. With capacity constraints and rising complexity, LA2028 showed that trust, alignment, and staying power carry a project through, not just contracts or capital.

1.8 Riyadh Metro & Legacy

Presented by Terry Fetters, Vice President, Parsons

The Riyadh Metro is considered the largest single-phase metro project ever constructed. It contains six lines totaling approximately 176 kilometers and includes 85 stations. In terms of scale and complexity, it surpasses other regional projects such as the Doha Metro and the Dubai Metro, which rank second and third, respectively.

The session by Terry Fetters of Parsons emphasized that great megaproject leaders act as strategists, communicators, innovators, and change agents, balancing short-term deliverables with long-term societal goals. Beyond construction, megaprojects are expected to drive long-term economic growth, urban development, and social inclusion by improving access to jobs and services. Its legacy includes promoting city planning and creating a model for future regional infrastructure projects.

“After these sessions, it’s clear that delivering a megaproject isn’t just about engineering and budgets, it’s about strategic leadership at every level, from shaping policy to inspiring teams. We leave here prepared to lead differently, not just manage.”

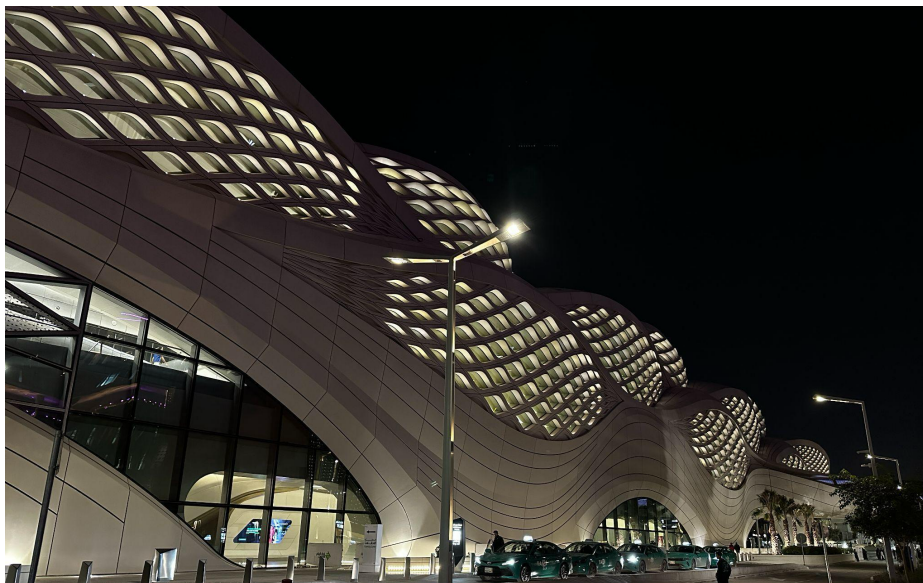


Figure 7: Riyadh Metro Station, photo by Dhairya Shah (2025).

The discussion touched on major global trends, including growing demands for sustainable, climate-resilient infrastructure and rapid technological change, echoing earlier decarbonization and digital transformation themes. Participants also noted the rise of international collaboration, complex financing models (like carbon credits or new P3s), and increased public scrutiny, all requiring agile, ethical leadership. Many participants shared plans to restructure teams, conduct early risk workshops, and embed sustainability and community engagement into project values.

The **Riyadh Metro** showed what it means to run a giga project like a business — and a nation-building effort. With 62,000 workers and 48 nationalities on site, success came down to interface management, logistics, and high-trust governance built from day one. The project didn't just deliver infrastructure; it aligned with Vision 2030, created jobs, and set a new standard for urban mobility in extreme environments.

Summary of Case Studies	Megaproject Name	City	Country	Project Type
	Lower Thames Crossing	Thurrock / Dartford	United Kingdom	Road / Highway
	JFK Airport New Terminal One	New York City	United States	Airport Terminal
	Heathrow Airport Terminal 5	London	United Kingdom	Airport Terminal
	The Gateway Program	New York / New Jersey	United States	Rail/Road/Tunnel
	Champlain Hudson Power Express	New York City	Canada	Energy Transmission
	Crossrail	London	United Kingdom	Rail Transit
	Los Angeles 2028 Olympic Games	Los Angeles	United States	Sports Infrastructure
	Riyadh Metro	Riyadh	Kindgom of Saudi Arabia	Metro / Urban Transit

Table 1: Overview of Case Study Megaprojects

2. Presentations and Panels

2.1 Industry Owners Panel: Leading Beyond the Technical

The panel of owners - Ed King (ExxonMobil), Catherine Valenzano (Port Authority of NY/NJ), Gene Martin (Transmission Developers Inc.), and Katherina Ferguson (Lower Thames Crossing) emphasized that megaproject leadership extends far beyond technical competence. Communication, vision, and the ability to manage stakeholders over long lifecycles are critical, especially given the churn of project teams and the complexity of regulatory environments.

They stressed that digital transformation is reshaping how owners manage contracts and supply chains, yet technology alone is insufficient without strong leadership to guide its adoption. Perhaps the biggest challenge identified was attracting and retaining top talent, as the industry faces fierce competition for skilled professionals.

2.2 Digital Transformation of Megaproject Delivery

Priya Jain and Gordon Alexander (Mace Americas) highlighted how BIM, VR, digital control rooms, and AI-driven platforms are revolutionizing the way project leaders visualize progress, anticipate risks, and make informed decisions. These tools are breaking down silos, building trust across stakeholders, and enabling alignment on a single version of the truth.

Yet the speakers cautioned that digital transformation is as much about leadership as it is about tools. Many organizations still struggle with fragmented systems and resistance to change. True success requires leaders who can champion innovation, invest in capability-building, and embed digital strategies into culture and governance, not just into project dashboards.

2.3 Managing a Megaproject: Distinction of Program vs. Project vs. Construction Management

Bob Prieto, NAC, FCMAA, Chairman & CEO of Strategic Program Management LLC, drew a sharp distinction between program, project, and construction management. Programs, he explained, are about translating strategic objectives into an execution strategy and managing the “white space” between individual projects - the risks, opportunities, and governance issues that don’t fall neatly into a single scope.

“For years, I’ve used those terms interchangeably – this session finally gave me clarity.”

The session emphasized that strong governance and clear responsibilities are not optional; they hold megaprojects together when complexity surges. For many participants, the clarity between program and project roles was a key insight, underscoring that program management is not simply “project management at scale,” but a fundamentally different discipline.

2.4 Industry Experts Panel: Confronting the Global Talent Gap

Panelists Anooj Oodit (Turner & Townsend), Chris Toomey (USC), and Joe Marie (Parsons) underscored that leadership not just management is essential to guide the diverse companies and people involved in megaprojects. Their discussion compared global delivery models, weighing the pros and cons of different contractual and governance approaches.

A recurring theme was the severe shortage of talent across the construction industry. The panelists agreed that developing young professionals into future leaders is urgent, and that the industry's next leap forward will depend on embedding digital solutions, data analytics, and collaborative contracting to improve productivity and foster win-win outcomes.

2.5 Risk Management: Distinctions for Megaprojects

Bob Prieto emphasized that megaprojects behave less like single projects and more like complex programs, bringing with them a unique level of uncertainty. He distinguished between uncertainty (immeasurable and often qualitative) and risk (measurable uncertainty that can be quantified). Leaders often hesitate to quantify uncertainty, undermining confidence in assessments and reducing the effectiveness of risk management.

Prieto introduced the ESPRIT framework: Economic, Social, Political, Resources, Intellectual/Ideas, and Technology as a way to recognize risks that extend beyond project boundaries. He argued that leaders must account not just for internal technical and financial risks but also for these broader systemic uncertainties, which can shape outcomes as much as what lies inside the work package.

The session also highlighted the importance of distinguishing between cost contingency and event contingency. Too often, projects apply a singular percentage across estimates, masking real exposure. Effective leaders treat high-probability risks as actual costs, model event-driven risks separately, and challenge optimism bias in assessments.

Finally, Prieto noted that megaproject leaders must look beyond conventional risk registers to address “white space risks” — the gaps between organizational, contractual, and scope boundaries where unforeseen issues often emerge. Recognizing these risks requires systems thinking, vigilant governance, and a willingness to challenge assumptions that otherwise remain invisible until too late.

2.6 Creating the Legacy Impact that only Megaprojects Can Do

Prof. Odeh and Prof. McManus highlighted that megaprojects must be measured not just by on-time and on-budget delivery but by the legacy they create. Examples such as Crossrail, the London Olympics, and the Bilbao Guggenheim Museum showed how projects that built legacy plans early in their lifecycle delivered broader community and economic benefits.

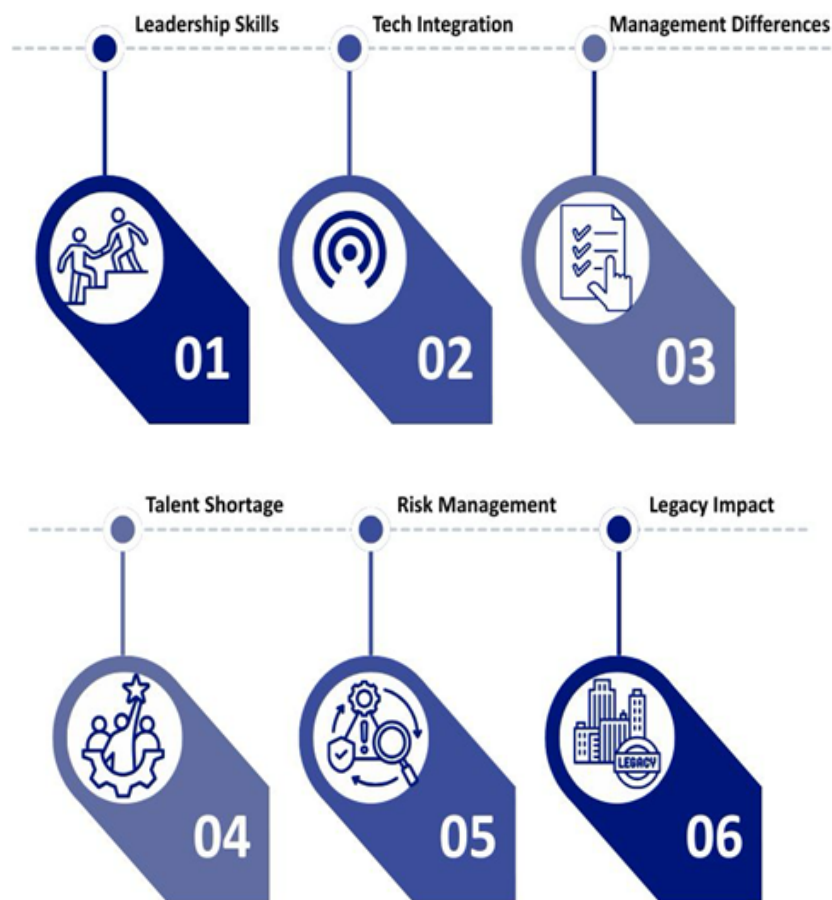


Figure 8: Six Core Topics from Panels and Sessions

The core message was clear: lasting value requires intentionality. By embedding local job creation, skills training, and community engagement into planning and governance, megaprojects can extend their impact well beyond the construction site and position themselves as long-term catalysts for growth.

3. Top 10 Key Takeaways

Megaproject management requires a multidisciplinary approach that integrates stakeholder alignment, risk-informed decision-making, and effective governance. The program showed that leadership must go beyond technical skills to include adaptability, resilience, and a long-term commitment to socio-economic and environmental goals. Vision, communication, and ownership of outcomes remain central to ensuring success across all entities.

The eight case studies reinforced these lessons. From the Lower Thames Crossing to the Riyadh Metro, the program demonstrated how bold sustainability targets, mission-driven partnerships, collaborative cultures, tailored governance, and legacy-first planning can transform outcomes. Each case highlighted that megaprojects are not just engineering undertakings, but strategic endeavors with lasting societal impact. Drawing on these discussions, participants distilled ten essential takeaways that serve as a guide for executives leading complex programs:

1. Build governance frameworks around a shared long-term vision.

Megaprojects succeed when all parties including public agencies, private partners, and investors are aligned behind a common purpose. Strong governance holds priorities together under pressure and ensures decisions reflect long-term impact rather than short-term fixes.

2. Leverage digital tools and collaborative contracts to integrate teams.

Technologies like BIM, digital dashboards, and data analytics improve decision-making only when paired with collaborative contracting. Embedding digital practices early in the project lifecycle helps teams work from a single source of truth.

3. Tailor organizational structures, engage stakeholders early, and embed long-term value.

One-size-fits-all approaches rarely work for megaprojects. Clear roles and dedicated governance, combined with early engagement of unions, agencies, and communities, build trust and align stakeholders around enduring value.

4. Use bold sustainability goals as catalysts for innovation and efficiency.

Ambitious targets, such as CO₂ reduction or carbon-neutral design, push teams to innovate. Far from adding cost, these goals often unlock smarter procurement, material choices, and logistics strategies.

5. Create a resilient and adaptive global supply chain strategy.

Megaprojects depend on vast, interconnected supply chains. Diversifying sourcing, building regional hubs, and engaging suppliers early reduces exposure to geopolitical risks and delivery disruptions.

6. Avoid underestimating soft power and external influences.

Labor agreements, political dynamics, and community sentiment can make or break a project. Leaders must navigate relationships and local realities with as much rigor as engineering scope.

7. Ensure legacy planning is integrated, and learn from past projects.

Legacy is not an afterthought. Projects that embed community benefits, job creation, and skills training from the outset deliver value long after completion, while ignoring past lessons risks repeating failures.

8. Recognize that megaprojects require adaptive leadership beyond routine management.

These projects are too complex for rigid hierarchies. Success depends on leaders who inspire trust, adapt in real time, and guide teams through uncertainty with influence rather than authority alone.

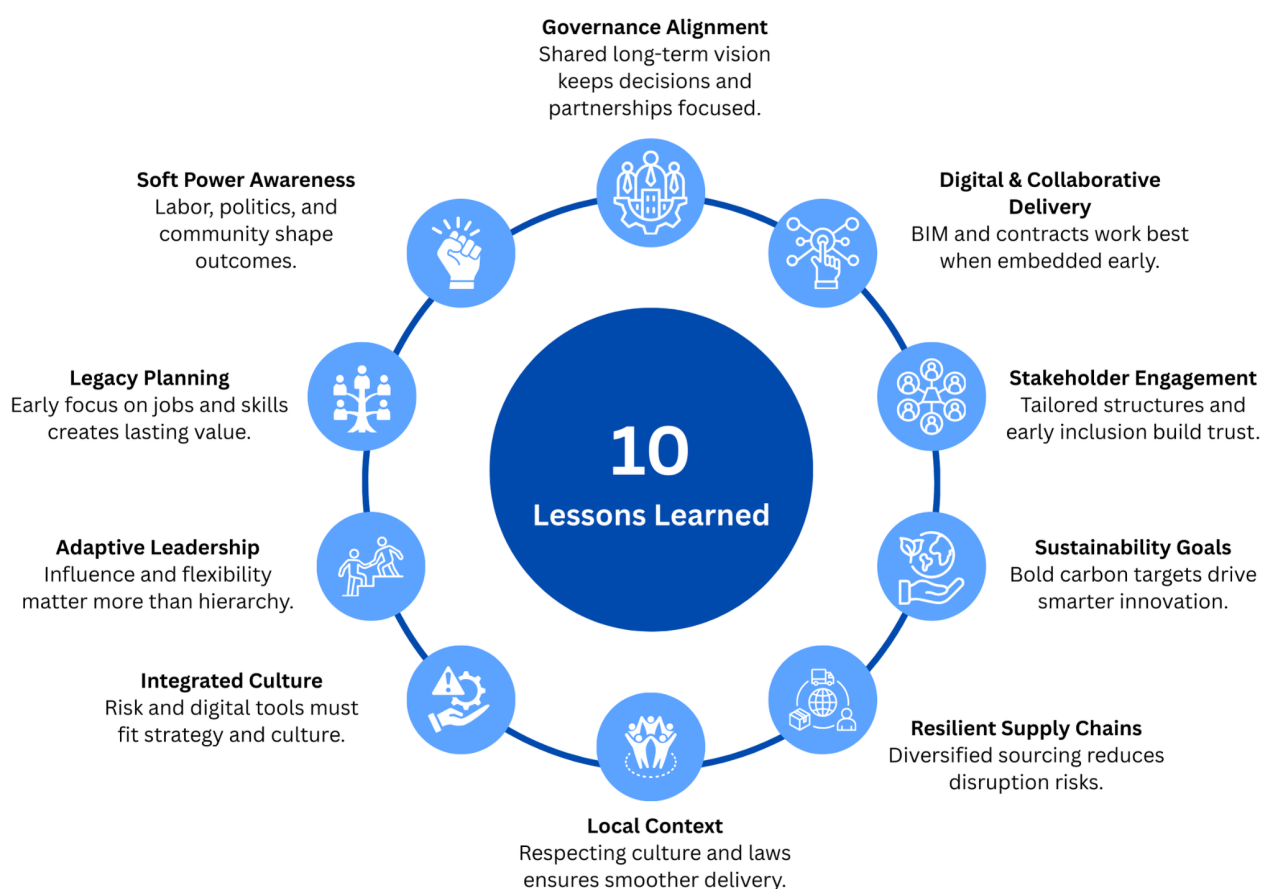
9. Integrate digital tools and risk management within organizational culture and strategy.

Dashboards and risk matrices are ineffective if isolated from culture. Real transformation requires embedding technology and risk practices into strategy, supported by transparency and shared accountability.

10. Prioritize regional culture, local engagement, and respect for local power structures.

Understanding local customs, informal networks, and regulatory frameworks is essential. Involving local suppliers, contractors, and communities strengthens support and smooths delivery.

Figure 9: Top 10 Lessons Learned to Implement in Megaproject Management



Together, these insights highlight that megaprojects succeed when leaders combine strong governance, technological innovation, and stakeholder engagement with cultural sensitivity and legacy-first planning. Participants reflected that the program reframed how they see their projects — not as isolated engineering tasks, but as legacy endeavors requiring visionary leadership and purposeful narrative building. They left committed to applying these insights in their professional roles, ensuring that future projects deliver not only infrastructure but also long-term value for communities and society.

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Murray Rowden, Turner and Townsend

Priya Jain, Mace Americas

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About GLCM

In today's interconnected world, no leader should have to navigate the waters alone. Imagine being part of a global community of practice where the latest insights on infrastructure delivery are shared, where lessons from London, New York, Dubai, and beyond are exchanged in real time.

Columbia University's Global Leaders in Construction Management (GLCM) network offers that opportunity. GLCM is an international network of forward-thinking construction and infrastructure professionals, founded to bridge theory and practice in our industry. By joining the GLCM community, executives can access exclusive research, case studies on emerging megaproject trends, webinars with industry pioneers, and peer-to-peer discussions that can spark innovative solutions to common challenges.

The next step is yours. We invite all readers and industry leaders committed to advancing megaproject delivery to connect with the GLCM network. Join this alliance of global experts and changemakers who are reshaping the future of construction management.

To get involved, visit Columbia University's GLCM page or contact the Columbia Engineering Executive Education program coordinators.

<https://www.glcm.info/>