Mind the gap.

Success in infrastructure projects often relies on overcoming the gap in alignment, thinking and operating between engineering and project delivery functions. To close the gap, leaders need to put effective measures in place to better integrate and align their project organization.
Major infrastructure projects frequently result in project overspend and delay due to strategic misalignment and different approaches between the engineering and project delivery functions. Why does this happen so often, and how can leaders address the issue?

Time and time again major infrastructure projects veer off course, hitting the headlines for delays, overspend, disputes – and in some cases, failure to deliver. It would be reasonable to assume that many of these issues could be fixed with more effective planning, project management and stakeholder management.

But if we dig deeper, often success relies on overcoming the gap in alignment, thinking and operating between engineering and project delivery functions. This viewpoint explores this gap, and how leaders can put effective measures in place to integrate and align their project organization so that their project is front page news for all the right reasons.

Divided they fall: the gap.

Why can failure to address the gap be so damaging? The answer lies in the triangle of parameters that define the delivery of engineering projects: cost, time and quality.

Figure 1
The cost-time-quality triangle.
Whilst engineers and project managers focus on all three elements when delivering projects, they will have preferences that reflect their skills, competencies and training:

- Engineers’ primary focus is on quality of outcomes, precise specifications and professional standards. They are trained to focus on the form, structure, dynamics, and specifications of what they produce. They focus on meeting standards and eliminating risk, thinking vertically, drilling down into the detail.

- Project managers meanwhile are focused and incentivized on delivering projects on time and to budget. They need to gain commitment from stakeholders and make compromises necessary to meet clients’ requirements. They take a birds-eye view, thinking horizontally across all facets of a project.

Who’s right? Both sides of course. In safety-critical engineering environments, quality should be paramount. But quality at the expense of profitability and customer satisfaction defeats the objective.

The problem is that over time, and inevitably when under pressure, the two viewpoints become polarised rather than integrated. Quality is considered antagonistic to cost and time, and vice versa; whereas in reality, all three are in ‘creative tension’ and essential (see figure 1).

When organizations fail to balance the time-cost-quality triangle between engineering and project management, project issues will inevitably arise. These have three damaging effects on an organization and its people, as outlined in the following section.

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Three damaging effects of the gap

1. Segregation
The different mindsets between engineers and project managers can create a deep segregation. Without integration under an effective project management plan, silo working, antagonistic attitudes and behaviors, and a lack of mutual understanding will follow.

A major disconnect then forms between what a company needs to deliver and the resources it is able to mobilise. Technical expertise is unable to be moved around the organization to where it is required on new projects, as it is perceived too risky for them to leave existing projects. This causes inefficient deployment of skills and resources, an ineffective operating model, cost increases and inability to meet deadlines.

2. Management consolidation
To fix the segregation problem, many managers mistakenly put more and more organizational layers in place—bolstering project management, planning and document control processes, thereby aiming to consolidate project overheads and exert more control over engineering. The result is typically a proliferation of project management complexity, processes and organization without efficiency improvement.

3. Project and organizational impact
In reality, management consolidation efforts are counter-productive and the cultural issues that emerge lead to project drift and reinforce the ‘us and them’ attitude as project managers attempt to supervise engineers even more closely.

This also does obvious damage to the business in a range of areas, most notably customer satisfaction, profitability, negative publicity, reputational damage and the ability to launch credible bids for future work. A further impact is the human toll—working in a divided climate causes stress, frustration and demoralises employees. The risk associated with this is clearly reduced engagement, which in turn results in:

- high staff turnover and absence
- poor retention of both talented engineers and project managers
- a poor team climate
- low motivation
- lack of discretionary effort
Companies that effectively integrate their engineering and project delivery functions reap the dividends. Their reality is a world away from the fractious experience of their gap-burdened competitors:

- Engagement and retention are high, leading to improved business performance.
- Their dynamic and energized workforce is prepared to go the extra mile, take risks and meet challenges.
- They have a clear, realistic plan to deliver on client expectations, and are able do so profitably.

Closing the gap requires holistic thinking, alignment and action across the ‘hard and soft’ elements of the organization if it is to be truly overcome. In this section, we outline four key areas that organizations and their leaders can focus on to prevent this damaging divide from occurring.

### 1. Develop a whole-system view

Without exception, successful organizations excel at designing and implementing effective operating models that are aligned behind the organizational strategy. However, often engineering project operating models are ineffective and incentivize inefficiencies. This inevitably fosters the divide between project managers and engineers, further inflating projects costs and slippage. The operating model should clearly define how work gets done, by who and how objectives will be achieved. Closely linked to this are the organization’s systems and processes which must be designed to drive collaborative employee behaviors and the outcomes required.

#### Key questions for leaders to close the gap:

- Does your organization’s operating model, work design, processes and culture support collaborative working between project managers and engineers?
- Do engineer and project manager job descriptions have role responsibilities that reflect cost, time and quality elements?
- Are role responsibilities communicated, understood and held accountable by project managers, engineers and their leaders?
- Does your organization’s operating model effectively support integration of workflows and movement of technical expertise to where it is truly needed?
2. Create the right behaviors

When facing the engineer-manager division, these roles and organizational leaders typically revert to behaviors, attitudes and language that act to reinforce the gap. When coming from the top especially, these behaviors become embedded in the culture of the organization. Organizations that are genuinely committed to closing the gap must develop and manage the behaviors required to overcome it; these behaviors include collaboration, communication and flexibility. To achieve this, the behaviors must align to the role and the organization’s strategy, values and culture; equally, embedding them into reward systems, recruitment, talent management and development processes will ensure the behaviors and skills are instilled throughout the organization. Leaders also need to lead by example through role modelling and encouraging desired behaviors.

“Companies that effectively integrate their engineering and project delivery functions reap dividends and improved business performance through an engaged workforce. Their reality is a world away from the fractious experience of their gap-burdened competitors.”

In addition, creating a healthy risk appetite in your organization where a degree of failure is tolerated and built into the project budget will also lead to more satisfied employees. The risk here far outweighs the alternative, which is losing frustrated talent and leaders further down the line.

Key questions for leaders to close the gap:

- Do balance scorecards reflect collaborative working and flexibility in thinking?
- Are project managers and engineers rewarded together for time, cost and quality?
- Do recruitment, talent management and development processes for both the engineer and project manager roles assess for desired competencies?
- Does the organizational culture and role responsibilities allow an engineer to stop the project if quality is being excessively compromised?
- Is your organizational culture and appetite for risk defined and consistent across the business and geographies?
3. Develop and cross-skill to encourage a broad perspective of the business

Many leaders fall into the trap of assuming that it’s impossible to change how engineers and project managers think. It isn’t. Encouraging leaders, engineers and project managers to develop multi-perspective thinking will help both sides move beyond rigid and entrenched views. For example, many senior leaders in engineering firms come from a project management background and may lack an understanding of engineering contexts. These leaders must ensure that they are hands-on and influential with all aspects of the business – and that means both sides of the gap.

The aim should be to instil a broader understanding of the organization as a whole (including the company’s strategic direction), and both the technical and delivery sides of the business. Cross-skilling, coaching and the creation of more collaborative team working environments can support this.

Key questions for leaders to close the gap:

- Does your organization enable engineers and project managers to develop an understanding and appreciation of each other’s roles, and also wider areas of the business and strategy?
- Do graduate programs, mentoring and coaching schemes encourage and develop wider thinking?
- Has your organization established clear distinction between engineering and project management roles, with broader capability required as people progress in the organization?
- Are training budgets also invested in developing individual competencies (both behaviors and skills such as influencing) instead of just technical expertise and qualifications?

4. Build integrated leadership teams

Organizational teams and emerging talent need the right conditions to deliver the best results. Leadership has a large part to play in this. To avoid reinforcing divisive attitudes and behaviors, put together integrated leadership teams with clearly defined roles and responsibilities, and span the skills required to run complex, multi-disciplined engineering initiatives. This team needs to combine a range of critical competencies:

- Organizational awareness: understanding what’s happening on both sides of the gap, for example the dynamics, client demands and pressures.
- Cooperation: willingness to share resources across projects, and to work together to seek solutions to problems as they arise.
- Foresight: the ability to anticipate potential problems, identify opportunities and make timely interventions.
- Emotional intelligence: empathy and interpersonal sensitivity are crucial in an environment vulnerable to rifts. Indeed Korn Ferry Hay Group’s research over the last five decades shows that emotional intelligence accounts for more than 85% of star performance in top leaders.

- Leadership styles: the most effective way to improve productivity is for leaders to create a workplace climate that motivates and encourages workers to perform at their best. Such leaders use a collection of distinct leadership styles—each in the right measure, at the right time. Korn Ferry Hay Group research shows that leaders who create positive working climates can improve bottom-line performance by up to 30%.

- Welcome detail into the boardroom: leaders are quick to become frustrated when engineers struggle to give them the big picture, and rely solely on the views of service directors. As a result, important details get lost in translation and poor decisions are ultimately made in the boardroom. Be aware of the level of operational detail available to the organization, and ensure that this is adequate to understand the issues at hand.

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Key questions for leaders to close the gap:
- Do your leadership teams use a range of leadership styles to close the gap and create a positive climate to drive performance?
- Are the personal behaviors of leaders consistent with those that are needed to overcome the gap?
- Do organizational structures enable integrated leadership teams?
- Is leadership cooperation incentivized, not just technical or financial performance?
A complex UK engineering business recently faced the challenge of reducing its operating cost by 30 percent over five years whilst maintaining its exemplary delivery record and safety and quality standards.

The organizational structure put in place the previous year effectively managed safety and quality issues but delivery issues had since surfaced, resulting in lost profit margin and reduced customer satisfaction across various projects. To solve this problem, the organization reintegrated the engineers back into the delivery teams and incentivised each regional team as a business unit; this was measured by the center on contract margin, on-time delivery and safety.

Leaders designed and role modelled desired behaviors to encourage collaborative working and challenged both engineers and project managers when ‘the gap’ behaviors and resulting issues surfaced.

These changes saw margins and on-time delivery improve across the portfolio. Safety and quality levels also improved and exceeded the organization’s already high standards. The gap was deemed to have been closed when a project that was struggling to meet a critical delivery date escalated quality concerns; this resulted in the project being stopped. Whilst disappointing for the project team, this was a turning point for the company. The client endorsed this move and commented that they now saw the company as their professional delivery partner for this type of project rather than a reliable subcontractor who would deliver on-time but quality aspects would be lacking.

Case study
Integrating and collaborating to deliver 30 percent cost savings

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