

Dar Al Riyadh Insight #89

Human Factors 7 – 12

Dar Al Riyadh Insights reflect the knowledge and experience of our Board, executives and staff in leading and providing PMC, design and construction management services. Dar Al Riyadh believes in the importance of broadly sharing knowledge with our clients and staff to improve project outcomes for the benefit of the Kingdom of Saudi Arabia.

In this Insight we will review the final six of the so called “dirty dozen” human factors that impact large complex projects.

Lack of Resources

Large complex projects are subject to numerous requirements for contingent execution. Capacities and capabilities are often more important than pure headcount. Resource shortages are not just from lack of qualified individuals, but also shortages of the resources they may require. As an example, during the COVID-19 pandemic, shortages of PPE were a significant negative human factor.

In complexity there is a need for granularity. This means the right resources in the right place at the right time. Workforce planning provides an excellent context for identifying required resources to efficiently undertake tasks at hand.

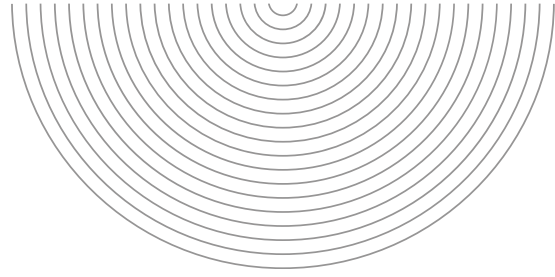
Pressure

Internal and external pressures exist. The right amount of stress at the right time in the right place can be motivating. In large complex projects, however, multiple vectors are applying pressure on individuals, teams, and the project as a whole. These vectors may originate from owners, regulators, partners, stakeholders, or suppliers. Internal pressures may derive from others in the project team as well as be a result of self-pressure.

Individual pressure often arises from a false perception that asking for help is viewed as a sign of weakness. Internal pressures can be relieved through a range of time management techniques including: prioritization, delegation, and asking for help. Escalation of issues requires effective communication regimes to exist.

Lack of Assertiveness

A lack of assertiveness is often associated with a lack of confidence and weak 360° communication. It is often displayed as a reluctance to speak up or take action. Diverse teams can outperform teams of experts, but only if the strength in diversity (of thinking) is allowed to manifest through communications, decisions, and actions.



Assertiveness is typically coupled with strong self-confidence. In one instance a CEO was asked if there was any retribution for expressing a view. The CEO's answer was "No. You have to have an opinion, and you need to own it."

Stress

"Everyone is a package." That is advice given by a very smart woman. People are not just the sum of their work experiences. They are the sum of those and a full range of personal experiences and situations. Stress may derive from outside the work environment as well as from within it. If one regards the cumulative effect from the range of stresses that affect people as a bell-shaped curve, then as project teams grow larger in large complex projects, more and more individuals will fall under the tails of the curves. Some will excel under stress while others become unmitigated disasters.

Maintaining mental health is important in the proper functioning of any team. A whole of body and mind approach is essential. Initiatives to promote physical health and mindfulness will pay dividends. Particular attention is required in mixed (in person and remote) work environments.

Lack of Awareness

Related to complacency, a lack of awareness can arise from: a lack of alertness, a lack of relevant experience, or a lack of vigilance. We have discussed some factors which can contribute to a lack of alertness such as distraction and fatigue. A lack of situational awareness is often associated with a lack of vigilance. It arises from an unclear mental picture of what is going on around an individual and how it may evolve.

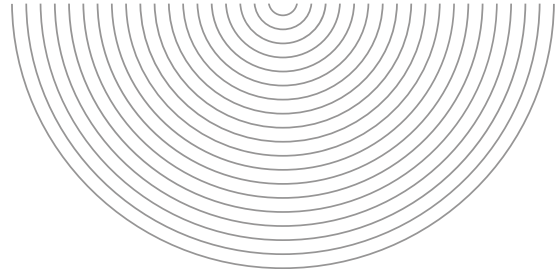
Strategies to mitigate the potential for lack of awareness include frequent safety huddles and avoiding single task fixation. Frequent communication to check and confirm the current state of play are also helpful.

Norms

Norms are unwritten rules that are followed by defined groups. They also may be presented as behaviors tolerated by similar groups. One of the problems created by norms in large complex projects is they may not be consistent or supportive across sub-elements of the project. On one megaproject, a major contractor required tie-off if working at elevations above six feet. The contractor on the adjoining section did not have such a requirement and labor was coming out of the same union hall. The respective norms were in conflict and the logical reconciliation parties, owner and union, did not seek to reconcile this clash of norms.

Norms can sometimes act to undermine the effectiveness of established project processes. They also can cloud an assessment regarding the true condition of large complex projects. Successful team building efforts can align project processes with team values and norms that support the overall mission.

Summary



Human factors are important on all projects, but on large complex projects the network of interactions grows in nonlinear ways. The dirty dozen presented here provides an initial checklist for project and construction managers with regards to what they are likely to encounter on their projects.