Dar Al Riyadh Insight #20
Flows in Large Complex Projects – Recommendations to Mitigate Impacts

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 series of Dar Al Riyadh Insights we have look at different types of flows that impact large complex projects and how to assess them. In this Insight we will share some recommendations on how to mitigate impacts.

Recommendations to Mitigate Impacts

Management of flows can be improved, especially those external to the project. Failures of large complex projects often arise from factors outside the direct control of the project team. That does not mean they cannot be managed. They can, but only if we are looking in the right direction and building the foundations necessary to deal with the inevitable challenges and changes.

Some recommendations to manage flows more effectively include:

1. Standardization of systems, structures, components, work processes, and de-coupling of activities that can be undertaken independently is essential.
2. Precedences must be reduced. Work plans must facilitate **contingent execution**. This elimination of precedences relies on a careful understanding (and subsequent tracking) of the project's numerous underlying assumptions, and a keen understanding of the minimum prerequisites for a given task or activity. Despite best efforts, new couplings may emerge in the course of the project driven by "assumption migration" or the effects of project disruption caused by out-of-plan flows.
3. Management information must include information on how the output of a preceding task will flow to the subsequent task and how outputs will flow onwards. These flows have characteristics with respect to whether they are planned or contingent, when they will actually occur, and whether any buffering mechanisms are present in order to optimize overall project flows.
4. Project execution must include a contingent capability to redirect and re-time various flows, or restore already influenced flows to an optimal state, recognizing this may be significantly different than the original transformative plan. On one large complex project, overall schedule was improved by 20 percent through a conscious decoupling of major elements of work that had previously been bundled to "simplify" project execution. The law of unintended consequences was clear.

5. Increased awareness of actual or potential direct or indirect coupling, such as may happen when flows are coupled by second or third order constraints (constraint coupling).
6. Managing the impacts of *Influencing Flows* begins with better awareness of the changing nature of a large complex project's stakeholder ecosystem.
7. Ecosystem awareness must be complemented by stakeholder engagement, seeking to influence flows and their timing.
8. Continuous improvement in information flows improves team and project performance.