



## White Paper 2019-01

### How to Synchronize Different Engineering Contractors at Project Development Stage

*Owners that develop large complex projects sometimes have to synchronise the work of several engineering contractors at project development stage (pre-Final Investment Decision). Since engineering processes often differ between those contractors, it can be difficult to achieve this synchronisation. This White Paper investigates the issues at stake and proposes some proven approaches for solving this issue.*

#### Context

From the Owner perspective, when developing and defining a project there is generally an attempt to delegate the coordination of the entire design to a main contractor. However, in reality several contractors are often involved concurrently in the design stage. This might be due to the usage of proprietary technology for elements of the project, the fact that part of the project involves the upgrade of an existing facility for which a specific contractor or team is best suited, or alternatively that the project rationale involves the combination of several key technologies and the providers of those technologies have to be contracted directly by the Owner who takes the responsibility of integrator.

This situation creates a substantial responsibility for the Owner that must manage the interfaces between the different contractors and at the same time ensure that the various steps and gates of the project definition stage occur in a consistent manner across the entire project scope. This White Paper focuses on the synchronization during the definition phase.

#### Difficulties to impose the Owner stages and gates approach

Owners generally use a project development and definition framework involving successive stages of improved definition and increased commitment, such as for example, framing, preliminary design and basic design stages. Those stages are often separated by formal gate reviews by senior management. The FEL (Front-End Loading) process developed by IPA is a well-known example of such models, which are proven to be best practice.

It is essential to impose the Owner's model on the contractors and make sure the design development plan of each contractor is aligned in terms of expected deliverables at each gate, with a consistent maturity level of the design across all contractors. In addition, comprehensive design reviews of the full facility must be carried out in a collaborative manner to ensure full alignment of assumptions and interfaces in preparation of the main gates.

Some large or specialist product contractors will have difficulties to adapt their internal design development processes to the requirements of the Owner. They will try

to avoid changing the internally proven process which is embedded in their quality management system, such as a product development process. Detailed review of their process is thus required to align as far as possible their deliverables and schedule to the Owners' process and identify the deliverables that interface with other contractors both in terms of schedule and content. This often requires substantial work.

In other instances, specialist contractors might be involved

that are small entities that master a rare proprietary technology, but generally lack knowledge and understanding of basic project management and project control tools and process. The Owner must then approach them with a

simplified framework to ensure that they fit into the overall plan. The Owner must then be quite detailed as to the requirements to ensure a homogeneous project development.

#### Work collaboratively to develop the detailed project definition execution plan

In order to achieve the best development of a project definition plan, we recommend holding planning workshops at the start, involving key representatives of all contractors, so as to share the expected Owner approach and discuss all the interfaces that are required to happen. Those sessions can sometimes be difficult and may in that case need to be facilitated to achieve their objectives.

The outcome should be an overall plan for the full project scope development, and an understanding of each contractor's project development plan, that aligns with the essential requirements of the overall plan.

Governance expectations regarding gate reviews and participation of each contractor's sponsor to the overall governance should also be discussed, formalised and agreed at that stage.

In addition, our experience shows that these sessions represent a great opportunity for mutual understanding between owners and contractors resulting in alignment around the project objectives. This is in itself of substantial value in addition to developing a realistic project execution plan.

**When Owners do not take responsibility for contractor coordination, project development phases falter**

## Discipline in the implementation of the overall synchronised development plan

Too often we see contractors revert to their basic process during the course of project development when the team grows or team-members change, modifying their deliverables schedule without considering the overall project. This needs to be prevented through:

- Involvement of the actual personnel that will execute the project definition phase work during the planning workshop (and not commercial personnel or temporary assignees until final nomination),
- Involvement of senior management of each contractor at sponsor level to sign off on the combined project development plan. This is essential to obtain the commitment to execute the project definition stage as agreed jointly and make sure that discipline can be imposed,
- Each contractor must disseminate the agreed approach through its internal execution plan, Master Deliverable Register and organisation of the work of its teams accordingly. This may have to be checked by the Owner after the start-up phase of project definition,
- Contracts must impose substantial obligations in terms of management of interfaces and issuing documents and reports for the main Owner gates and impose penalties in case of delays in the issuance of those documents.

**We recommend holding planning workshops at the start, involving key representatives of all contractors, to come up with a joint development plan and alignment on phases and milestones**

## Integrating Project Core Team

In addition to the general recommendations above, we suggest where possible to go one step further by ensuring that the Owner and contractor representatives work as integrated teams. If it is not possible to be fully integrated, one or two days in the week should be systematically devoted to being physically together in a single location. By planning such integrated team days in advance, finding dates for issue resolution meetings is simplified and this setup greatly enhances collaboration. This is particularly important in the beginning of the project definition phase until options have been settled at the end of preliminary engineering. In basic/detailed engineering a looser setup can be implemented.

## Owner to cover actively specific control functions

Coordinating the work of several contractors requires active coverage by the Owner (or by a contractor specifically appointed for this purpose on a specific project management support contract) of several activities, such as:

- Coordination of the overall integrated project schedule,
- Coordination of an integrated Deliverable Register for the project, together with monitoring and progress measurement
- Active coordination of Interface Management and Management of Change processes
  - Adoption of shared systems for communication and data exchange: a common barrier to effective collaboration between project stakeholders is that each party uses its own systems for document storage, data exchange and communication.

Consequently, exchange of and access to information is slow, formal and insufficient generating unnecessary delays and rework.

Where the owner is willing and able to implement a common platform for exchanging and accessing project information, such as interface information, schedule information and documents, we observe that there is often improved and active collaboration.

## Conclusion: Owner engagement is needed

Some Owners might find it difficult to organise such collaboration or get into the details needed to synchronise the processes of all contractors around a single project development process. However, it is unavoidable in the case where several contractors are involved. We observe too often that the Owners are not up to that responsibility and definition phases falter because Owners are not sufficiently engaged.

Owner engagement is needed in those cases. This signifies a higher upfront investment, that will redeem itself by a shorter project definition stage, a much better apprehension of interfaces between contractors, a much-improved decision-making framework for senior management, and finally a smoother and more predictable project execution.



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