



GLOBAL ENERGY INSTITUTE

# Toward Process Execution Excellence in EPC

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Engineering, Procurement, and Construction (EPC) companies often struggle to execute common business processes across projects in a consistent manner, even though underutilizing internal best practices can leave behind significant value and introduce undue risk. Governance across projects rarely exists—even within a business line or region—and methods for monitoring process effectiveness across projects are also uncommon. Efforts that could be directed at driving reliable, predictable performance at peak levels tend to be focused on resolving issues that result from poor process execution. As a result, projects may be less profitable than expected, as execution does not align with estimates.

Major capital projects have been functioning in this manner for decades for several reasons. Resource turnover between projects, global operations of EPC firms, differences across industry lines, and diverse requirements of project owners contribute to the challenge of consistent project execution. EPC companies have used static process models, Enterprise Resource Planning (ERP) applications, in-house systems, and employee training in processes and systems to address process execution issues. These techniques have addressed some of the challenges. However, they commonly focus on improving components of the overall process and on optimizing transactional interactions within functional silos. These techniques have rarely enabled visibility into the overall process, enabled the use of predictive performance measures, or allowed management to identify process improvement opportunities.

In order to drive consistent process execution and to align practitioners in their execution of internal best practices across the organization, companies need to consider a four-step process: (1) create and use a common business process model that represents the major end-to-end processes across the organization; (2) update the business process model regularly to leverage evolving best practices and measures from projects across the organization; (3) use technology to guide practitioners through process procedures, presenting transactional systems when needed; and (4) enact effective governance to promote continuous improvement and effective knowledge transfer.

## 1) Create and Use a Common Business Process Model

Business process modeling can help to facilitate process analysis, improvement, and consistent execution. This activity should create a library of processes required to execute the typical project scope from initiation through completion. Business process models should be independent of organizational boundaries, and should be detailed and structured. A business process model structure should consist of several levels, from broad process classifications and categories down to detailed process



procedures. For example, KPMG's Global Major Projects Advisory Project Level Framework has 13 process control categories that monitor 69 processes and feed into 5 management reporting outputs. Companies can also leverage widely accepted process frameworks, such as the American Productivity & Quality Center (APQC) framework. Effectively implemented business process models provide a baseline for measurement, consistency, and continuous improvement; all critical factors in facilitating the objectives of process execution excellence.

## 2) Leverage Best Practices

A company should identify where processes are executed most effectively for each discipline (e.g., procurement). This could be as easy as identifying top performers for a given discipline and understanding how they execute their work. The activities, methods, and artifacts used to perform work should be captured as process procedures in the business process model. Management should pay special attention to the activities that occur between functions, as they represent the greatest cause of process errors.

Of equal importance is identifying measures of process performance. These measures may equate to internal or external service level agreements (SLAs), throughput volume, cycle time, and error rates. Process performance measures should be used as an early detector of

poor performance and a baseline to drive continuous improvement. An output of this process step is the global common process template, which documents internal best practices and their corresponding measures.

## 3) Use Technology to Guide Practitioners through Process Procedures

Technology can help to orchestrate process execution by guiding practitioners through process procedures. For example, Web portal screens can represent the process model and guide practitioners through documented process procedures similar to how tax preparation software guides taxpayers through the process of filing tax returns. In this example, core business applications (design, transactional, planning, and document management systems) are presented to practitioners when identified by a process procedure. Alternatively, core business applications can be concealed, as the Web portal can provide a more elegant user experience than many dated, custom-built applications.

Using technology to manage the execution of business processes uncovers a host of benefits. With a Web portal, practitioners can be presented with an inbox that contains items such as workload, process guidance, and the transactional progress of their activities. Project managers can easily compare practitioner performance within a project, simulate alternative resource loading

scenarios, and communicate process effectiveness against SLAs. Senior management can compare project process execution metrics against other projects as an early warning indicator. These are basic benefits that may be realized upon the implementation of the right technology.

## 4) Enact Effective Governance

Governance of business processes is essential to common process execution, evolution of leading practices, and business process innovation. Open but formal channels should exist for process evolution, and each opportunity for improvement should be evaluated within the context of both a specific project and, separately, against the internal best practices and corresponding measures of the global common process template that resulted from leveraging best practices.

For new projects, the project startup team should evaluate requirements against the global common process template. Practitioners within each discipline engaged on the project should review the process model, and the process model should be viewed as a best practice baseline. Specific project requirements should be balanced against the standard process, and changes to the global common process template should be evaluated constantly to ensure that the template remains relevant to the organization.



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Governance on an ongoing basis facilitates new ideas and the evolution of the global common process template. However, a single project, geographic region, or line of business should not overly influence modifications to the template.

The global common process template is not intended to remain static. It will evolve with project requirements, identification of improvement opportunities, and new staffing models. The template should enable modeling of proposed changes and act as a core source of knowledge for the organization.

**Conclusion**

Process execution excellence is both a strategy and a tactical way of executing daily business activities. There are a variety of compelling benefits available throughout an EPC business. Support for consistent execution of the entire business process is possible and desirable to facilitate effective knowledge capture, knowledge transfer, improved process performance, and management insight into both potential areas for improvement and potential risks.

Ultimately, benefits can be measured by the difference in estimated versus actual hours required to complete a project and the quality of service delivered to the customer. Companies can help realize these benefits and achieve process execution excellence by aligning practitioners in their execution of internal best practices across the organization.

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