Introduction

This paper tells the story of the steps that an E&P company took in implementing a methodology to plan, deliver and execute capital projects predictably. It addresses the challenges that any organization faces in effecting change, as well as the actions taken to ensure success for the initiative. This story can serve as a blueprint for any organization that wishes to improve capital performance.

The focus of the paper is not so much the solution implemented, but rather the steps the organization took to ensure a successful implementation. In this paper, the terms “project delivery system” and “asset development system” will be used interchangeably.

Background

The company wanted to improve the predictability of its delivery of major capital projects. The company felt that to meet its business objectives, one of many things it needed to do was improve its capital execution or asset development performance.

E&P companies have many paths to growth while achieving sustainability. A traditional approach is to grow via exploration while producing efficiently. Exploration and production are recognized critical competencies for E&P firms. What is often not appreciated is that the path from exploration to production must go through asset development or capital project execution.

The figure below illustrates the three major competencies that an E&P company needs to grow. Often, firms choose the acquisition path in lieu of exploration. Nonetheless, short of acquiring fully mature assets, there is always some exploration work necessary.

Figure 1: Asset development is key to growth and sustainability
Portfolio and Competencies
An asset development or project delivery system must align with the portfolio to ensure a fit for purpose system as well as predictable execution. A project delivery system is the methodology that an organization utilizes to take a business opportunity from concept to startup. This is not to be confused with a phase gate process, which is but one part of an asset development system.

Components of an asset development system include the following:

- **Process** – Are the work processes and procedures in place within the organization to support the planning and execution of the project?
- **People** – Who will perform the work? What are their skill sets, their knowledge, and their availability to work on the project? Do we have enough people with the appropriate skill set on the project?
- **Organizational Governance** – Is there appropriate management oversight and support for the project team to ensure that the project is planned and executed in accordance with the requisite processes and controls?

An organization must have certain competencies to successfully plan and execute projects predictably. These 23 competencies fall into three major categories: strategic, tactical, and performance. Each of these competencies requires a business process, people with the requisite skills, as well as executive organizational governance. These are illustrated in Figure 2 below:

- **Strategic Competencies**
  - Business Strategy and Planning
  - Stakeholder Management
  - Interface and Issues Management
  - Project Execution Planning
  - Communications and Information Management
  - Management of Project Scope and Change
  - Value-Improving Practices
  - Continuous Improvement
  - Risk Management
  - Organizational Capability
  - Contracting and Procurement Strategy
  - Assurance
  - Team Alignment
  - Project Appraisal and Decision-Making

- **Tactical Competencies**
  - Technology and Design Management
  - Procurement Management
  - Construction Management
  - Commissioning and Startup Management

- **Performance Competencies**
  - Environmental, Health and Safety Management
  - Cost Management
  - Schedule Management
  - Quality Management
  - Operational Predictability

Figure 2: Key asset development competencies

Figure 3 illustrates how the project delivery system competencies must align with the portfolio to ensure a fit for purpose system.
Overall Approach
Figure 4 illustrates the process that the organization took to achieve transformation.

- **Health Check** – An assessment of 23 asset development competencies was performed to ascertain their robustness. Each competency was assessed for the associated process, people and organizational governance. As an example, for risk management governance, what oversight does management provide to ensure risk management is properly utilized? The Health Check is done to ensure that any recommendations are grounded in reality and result in a fit for purpose solution.

- **Recommendations** – These are developed from the Health Check and are the basis for the transformation of the organization. The recommendations form the basis of the design.

- **Design** – The design is the actual solution implemented that is referred to as a project delivery system or an asset development system.

- **Implementation** – This is the most challenging part of the transformation and is where most initiatives fail. This will be discussed in greater detail in sections that follow.

Managing Change and Governance
Often company staff sees the “new” way of doing business as just one of a plethora of initiatives. How do you convince employees they need to change as well as remove the barriers within the firm that prevent the initiative from being successful? People are accustomed to developing, planning, and exploiting opportunities in a particular way. Also, individuals often fear change for a variety of reasons. The company, as well as its entire supporting infrastructure, is organized to sustain the old way of planning and executing projects. Infrastructure includes all systems associated with human resources, management information, business processes, support staff, etc.

A robust governance structure was utilized to ensure that this key initiative met its business objectives. The Executive Sponsor is critical to initiative success. This individual was responsible for clearing organizational barriers and ensuring that the new asset development or project delivery system was successfully adapted.

The Implementation Coordinator has oversight of the day-to-day design and implementation of the project delivery system. This individual eventually became the “owner” of the system and is responsible for its administration. A consultant was hired to perform the Health Check, develop recommendations, perform design and assist with the implementation.
The Implementation Team consisted of approximately fifteen individuals from all disciplines, such as subsurface, facilities, operations, drilling, HSE, supply chain, etc. These individuals reviewed all design components and approved them prior to implementation. Their roles were to insure relevancy and fit for purpose. Further, these individuals served as a nucleus of “super users” to ensure initiative success.

![Diagram of Implementation Team structure]

**Figure 5: Organizational change requires a robust implementation governance process**

**Design Approach**
The initiative used a conventional design approach in that the consultant generated elements of the asset development system with input from the Implementation Coordinator as well as the Implementation Team. These same stakeholders approved final versions prior to implementation. This ensured that a fit for purpose, portfolio-aligned system was designed. The ultimate asset development system included three major components: governance, process, and people. This is illustrated in Figure 6 below.

![Diagram of Governance Structure]

**Figure 6: Asset development system major components**

The system was designed using the hierarchy illustrated in Figure 7 below.

The asset development system is aligned with all organizational policies, global standards, etc. The system itself is described in a Master Guideline together with a One-Page Roadmap. The roadmap lists for each of the stages the deliverables, assurance activities, key decisions, etc. This roadmap is an 11” x 17” one-page document. The Master Guideline, among other things, describes in detail each of the elements found on the One-Page Roadmap. Together, these two documents form the core of the project delivery system.
Approximately 15-20 subsidiary guidelines were developed for key processes such as risk management, management of change, cost and schedule management, project execution planning, assurance reviews, value improving practices, etc. These guidelines are typically 30-40 pages in length, are not procedures, use lots of illustrations, are instructive in nature, and are intended as a “How To” guide. They address project team roles and responsibilities for each process, key activities, major decision points, applicable tools, etc. While the One-Page Roadmap and the Master Guideline are core documents, these subsidiary guidelines provide guidance as to how to utilize the project delivery system.

In many cases, local or global procedures were in place or subsequently developed for specific or discipline-related activities. These procedures fall under the subsidiary guidelines as illustrated in Figure 7.

![Figure 7: Typical asset development system hierarchy](image)

**Implementation Approach**

Implementation is by far the most challenging part of transformation, and that is where most initiatives fail. The designed project delivery system is self-sustaining, as it has built-in oversight and governance management functions. The challenge is to transition the organization from the old way of doing things to the new. A three-tiered approach was utilized:

- All new projects would use the new system.
- Existing projects that had been sanctioned and, which were in full-scale execution would not use the new project delivery system.
- Projects in the concept select phase (Select Stage) or in Front End Engineering Design (Define Stage) would use elements of the new system as appropriate. In no case would a project have to recycle and redo previous work. The goal is to transition the project to the new process. The best way to transition projects to the new system is by doing a stage work plan workshop. Workshops are described below. Briefly, a stage work plan lists all the deliverables, peer reviews, etc., that a project will need to do in one stage. These plans are done with the team and take into consideration project drivers, risks, etc. While the project may not conform to all of the project delivery system requirements for the initial onboarding stage, conformance is much better in subsequent stages as the team has a firm foundation to perform subsequent work.

Key implementation elements are illustrated in Figure 8 and described below:

- The Project Delivery System website is the communication medium for implementation and to assure that project teams have access to the appropriate guidelines and tools. For key processes, subsidiary guidelines were provided with a template as well as a “best in class” example. Hence, if a team needs to develop a project execution plan, the website provides the subsidiary guideline, a template to develop one, and an example of an organizational “best in class” project execution plan. The website is a place where project teams go for support. The site is also used as a
Lessons Learned repository, as well as where project teams post content that serves as the basis for assurance reviews.

- **Training** was provided to staff based on their roles. High-level awareness training was provided to staff who support asset development projects. These are individuals who are not project team members but may interact with them. Detailed training was provided to all individuals who are project team members. This includes subsurface, operations, drilling, facilities, etc. Specialized governance training was provided to senior management. The focus on this part of the training is on management’s role to ensure that decisions are timely and issues are addressed.

- While training is important, studies have shown that participants retain little of the material unless some reinforcement mechanism is utilized. The workshop approach was the method of choice for utilization of the new asset development system. The major benefits of this approach are that the project team utilizes the new process, plus the team develops an important stage deliverable during the workshop. Hence, the project moves forward and the team experiences the immediate benefit of the workshop. This bottom-up approach where the project team realizes the benefit of the new process is key to implementation success. Workshops are typically utilized to develop key deliverables such as a project frame document, stage work plan, project execution plan, project risk assessment, etc.

![Figure 8: These components are utilized to support adoption of the new asset development system](image)

**New Roles and Responsibilities**

Companies tend to align around functions such as finance, drilling, operations, etc. They are organized for the day-to-day operations of the company. Projects are, by their nature, extremely disruptive. They require mobilization of significant resources in a very short period of time combined with nimble decision-making. When the project is complete, staff has to be demobilized and reassigned within the firm. This is all done in an environment of aggressive project schedules.

It is a tenet that for asset development there should be single-point accountability (SPA), an integrated project team, and a member of management to support the individual charged with SPA. This SPA person is referred to as the Development Manager. Project discipline resources are assigned to the SPA for the project duration. In the context of the asset development system, the roles and responsibilities of the Development Manager, business sponsor, as well as gatekeeper must be clear. Figure 9 below illustrates the key players. Roles and responsibilities were developed with the Implementation Team utilizing a workshop approach and approved by the implementation Executive Sponsor.

It is a challenge for any organization to change individuals’ roles and responsibilities for a core activity. The implementation approach illustrated above, with a focus on the workshop approach, was key to making the transition. The organization illustrated below was critical to ensuring sustainability of the effort.
**Sustainability**

Sustainability is always an issue with a new initiative. A robust, centralized organization was utilized to ensure that project teams have someone that can answer their questions, maintain the system, manage peer reviews, and provide management with project performance data. This central organization is the Global Projects Function and is akin to a Project Management Organization or PMO. This is illustrated in Figure 10 below:

These components are discussed below:

- **Maintenance** – The Global Projects Function maintains the project delivery system website, as well as all of the associated content and the guidelines as illustrated in Figure 7. This content is the backbone of the system and constant refresh ensures that project teams utilize it and realize its value.
- **Assurance Coordination** – This is critical to the integrity of any process. Assurance coordination means establishing peer reviews and gate clearing reviews, ensuring proper peer participation, timely submission of findings, ensuring input into executive decision-making, etc.
- **Performance Management** – Management requires that all project teams provide a stage specific standardized scorecard. Senior management utilizes these scorecards to ascertain the internal project health and to ensure that issues are raised and promptly addressed. These scorecards are based on input from the project team, but “standardized” across all projects.
- **Project Team Support** – This is provided by the Global Projects Function and includes training, workshop facilitation, technical support, etc.

**Success and Results**

The new project delivery system has facilitated the organization’s transition toward taking longer strides or including much larger opportunities in its portfolio. It is a challenge for any company to embrace change, but with it come the rewards.
References
2. “Project Portfolio Capital at Risk and the Enterprise Project Delivery System,” by Pete Luan and John Wray. Presented at the American Institute of Chemical Engineers, Spring 2008 National Meeting

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