

2012 Annual Department of Energy
Project Management Workshop



Building Owners Cost Engineering Organizational Capability

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Chevron

Tim Mitchell Biography

- Degree
 - B.S. Civil Engineering, 1986
 - Mississippi State University
- Professional Field:
 - Upstream Oil & Gas Industry
 - Major Capital Project (MCP) Management
 - Facilities Engineering – Offshore Oil & Gas Production
- Experience
 - 26 years with Chevron
 - 21 years with Chevron's Project Resources Company (PRC)
 - Completed 5 MCPs in Nigeria, Angola and US Gulf of Mexico
- Current Role
 - Manager of Cost Engineering – PRC
 - Cost Engineering Functional Head
- Professional Certifications
 - PE (Inactive)
 - PMP (04586)



- The Problem
 - Inconsistent Cost Engineering Capability
- The Cost Engineering Capability Initiative
- Alignment with Enterprise Strategies
- Strategic Decision – Why TCM Framework?
- Initiative Phase Gate Approach
 - Select Phase
 - Develop Phase
 - Execute Phase
 - Operate Phase
- Lessons Learned and Conclusions
 - Lessons Learned Using TCM Framework
 - Conclusions

The Problem

Inconsistent Cost Engineering Capability

- Historically, Chevron found:
 - Competent Cost Engineering could be purchased from our contractors
 - Chevron had a small staff of cost and scheduling experts to provide assurance and to support early estimates
- A decade of growth in project activity in the oil & gas industry which has taxed contractors ability to deliver:
 - Increase in the number, size, location and complexity of capital projects
 - More technically challenging projects (for example, deepwater)
 - Inconsistent contractor competencies and capabilities to deliver projects
 - Contractors more risk averse - shifting more cost and schedule risk to the owner (for example, reimbursable contracts)

Cost Engineering Capability Initiative

- Cost Engineering Capability Initiative chartered to:
 - Strengthen Chevron's internal capabilities in Cost Engineering
 - Reduce Chevron's dependency on contractors
- The initiative was chartered to make a step-change that would build, improve, and sustain Chevron's Cost Engineering capability
- Standardization of Cost Engineering terminology and work processes to provide:
 - More consistency in Cost Engineering from project to project
 - A foundation for Cost Engineering intellectual property and for training new personnel
 - A basis for continuous improvement

Alignment with Enterprise Strategies

The Cost Engineering Capability Initiative closely aligned with Chevron's enterprise strategies

- **People** - "Invest in people to strengthen organizational capability and develop a talented global workforce that gets results the right way."
- **Execution** - "Execute with excellence through rigorous application of our operational excellence and capital stewardship systems and disciplined cost management."
- **Growth** - "Grow profitably by using our competitive advantages to maximize value from existing assets and capture new opportunities."

People

Execution

Growth

Strategic Decision #1

*Strategic
Decision #1:
Fully Leverage
AACE
TCM
Framework*

Total Cost Management Framework

A Process for Applying the
Skills and Knowledge of Cost Engineering

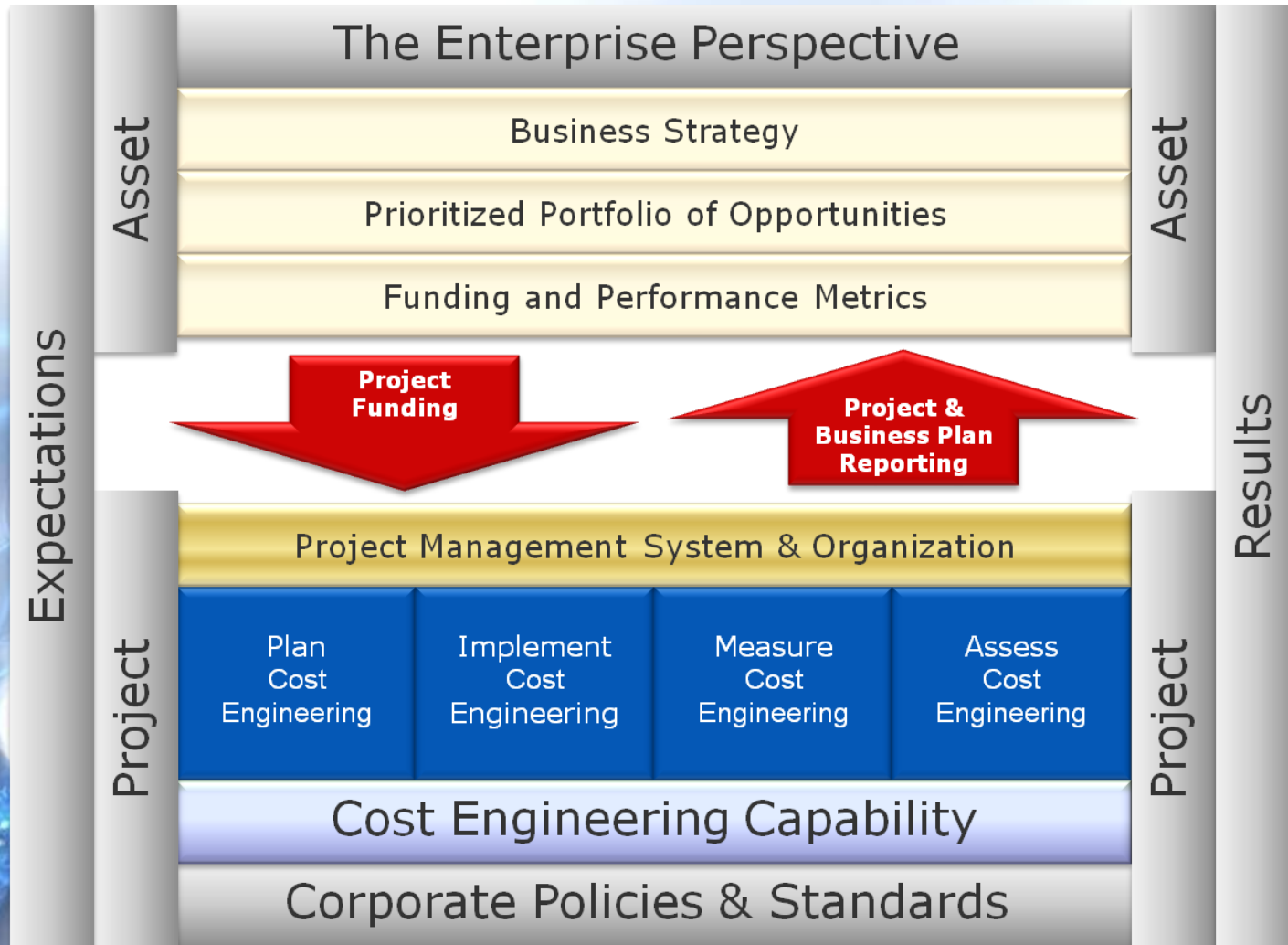


A Product of the Technical Board of AACE International

AACE INTERNATIONAL
promoting the planning and management of cost and schedules

- **Strategic Decision**
 - AACE TCM Framework selected as basis for Chevron’s scope and definition of Cost Engineering
 - Leverage TCM Framework for development of Chevron’s Cost Engineering intellectual property and foundation for making improvements
- **Rationale for Decision**
 - Allowed the initiative to move rapidly through the develop phase into the execute phase
 - TCM Framework is specific to the function of Cost Engineering
 - “Asset” and “Project” level definitions aligned closely with Chevron’s systems and processes
 - Aligns Chevron’s systems to a widely accepted industry standard

Chevron Perspective



Phase Gate Approach

The initiative followed the standard phase gate work process used within Chevron for projects

- Phase Gate Approach: *Frame, Select, Develop, Execute, and Operate*
- Staffed initiative with senior level personnel with Project Management and Cost Engineering experience
- Extensive network of internal and external SMEs leveraged for input on initiative solutions
- Decision-driven process - initiative reports to a defined group of decision makers who meet periodically to review and discuss the team's work and deliverables at prescribed "Phase Gates"



Phase Gate Approach

Select

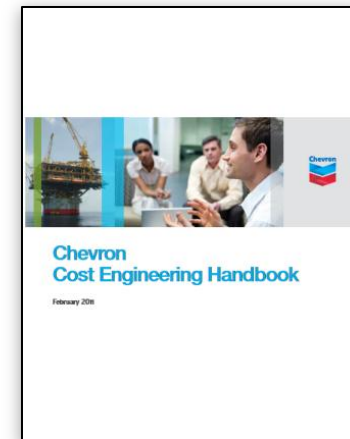
- Extensive engagement sessions and gap assessments were held at MCP locations around the world
 - Vision for Cost Engineering in Chevron
 - Diverse group of over seventy (70) stakeholders participated
 - Performed gap assessment of current Cost Engineering performance against all work process areas as defined in the TCM Framework
- Gap assessment results were discussed with the initiative's decision review board which resulted in clear direction for the initiative team to fully develop the selected strategy



Phase Gate Approach

Develop Phase

- Developed Chevron's "Foundational" elements of Cost Engineering:
 - Cost Engineering Handbook
 - Cost Engineering Foundational Training
 - Cost Engineering Competency Development Tools
 - Cost Engineering Career Ladder
 - Cost Engineering Roles and Responsibilities
- Conducted organization review
 - Recommended new Cost Engineering COE



Execute Phase

- Deployed Chevron's "Foundational" elements of Cost Engineering:
 - Cost Engineering Handbook
 - Cost Engineering Foundational Training
 - Cost Engineering Competency Development Tools
 - Cost Engineering Career Ladder
 - Cost Engineering Roles and Responsibilities
- Reorganized into a central Cost Engineering COE to support all MCP's
- Established new roles to manage the people in the Cost Engineering Function



Phase Gate Approach

Operate Phase

- The new Cost Engineering COE is in full “Run Mode” now
- “Foundational” standards are deployed
- New standards (procedures, tools) are being developed and deployed
- Roles and responsibilities are better understood
- Personnel are being effectively trained
- A foundation for continuous improvement is in place
- Better career management and competency development with functional oversight and governance



Lessons Learned Using TCM Framework

- The quality and maturity of the TCM Framework provided an excellent basis for Chevron's Cost Engineering organizational capability development
- The use of the TCM Framework jump started the development of Chevron's Cost Engineering "Foundational" elements – no need to reinvent the wheel
- The TCM Framework was an effective basis for internal gap assessments for all areas of cost engineering
- The TCM Framework is aligned with Chevron's existing processes, both at the Project and Asset levels – helped develop a more integrated "Enterprise" approach to the Cost Engineering function
- The TCM Framework aligns Chevron's systems to an industry standard to improve the interface with our contractors

Chevron:

- Identified an opportunity to improve our Cost Engineering capability
- Executed a multi-year initiative to make a step-change improvement in our Cost Engineering capability
- Ensured that the Cost Engineering Capability Initiative aligned with Enterprise Strategies
- Made a strategic decision to leverage the AACE TCM Framework
- Rigorously followed a decision-driven, phase gate process to deliver the Cost Engineering Capability Initiative
- Successfully completed the Cost Engineering Capability Initiative and is in full “Run Mode”
- Has delivered a step-change improvement to build, improve and sustain its Cost Engineering Capability – ***The Journey Continues!***

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Questions?



Thank You!

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