Operational Excellence: What is it and how to achieve it?

Society of Petroleum Engineers

December 2nd, 2014
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We commit that in mobilising for our projects, we will review your applicable HSSE policies, advise of any additional requirements and ensure Bain teams are familiar with the outcome.

We provide a designated contact accountable for maintaining an HSSE dialog for the duration of all projects.

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Today’s Agenda

- Introduction

- What is Operational Excellence?

- How to achieve it?: Assessment and interventions

- How to achieve it?: A systematic approach
Pedro Caruso

Partner, Houston

Relevant experience:

• 15+ years of consulting and oil & gas industry experience

• Have worked with Upstream companies across the globe, including in the U.S., U.K., Mexico, Colombia, Venezuela, Ecuador and Kuwait

• Relevant project experience includes:
  - Oil shale strategy for major O&G company
  - Multiple due diligences (unconventional project; seismic data provider; large pipeline in South America; etc.)
  - Performance improvement (offshore / onshore rig NPT; capital projects; heavy crude blending; etc.)
  - Operational Excellence Systems (creation; revamp; capital projects; etc.)

Education:

• MBA from Columbia Business School, Dean List all semesters

• MsSc Finance from IESA, graduated with honors

• BS in Chemical Engineering from Universidad Simon Bolivar, Summa Cum Laude

Work experience:

• Refining and supply and trading, including logistics, at PDVSA

• Business analyst for Kuwait Petroleum Corporation
Bain is the consulting firm the world’s business leaders come to for results

Who we are

• Bain is one of **the world’s top management consulting firms**. Founded in 1973, we currently have 5,700 employees in 51 offices worldwide

• We’ve worked with over 4,900 companies, including more than **two-thirds of the Global 500**

• We have **consulted on half of the largest global private equity deals** in the last decade

• **Our clients come back for more.** 85% of our business comes from companies with whom we’ve worked before

• We have **deep industry expertise and broad practical experience**

• We help leaders in every industry make their most critical decisions on **strategy, operations, organization, M&A and IT**
Our people, approach, and track record set us apart

Start

What sets us apart

• Our 40-year track record of delivering results not reports. We provide tailored, pragmatic, actionable solutions.

• Our people, who focus on helping get things done rather than proving how smart they are.

• Our willingness to put our money where our mouth is, with 60% of our revenue from clients where we have aligned our incentives with their results.

• Our Results Delivery® process that makes change stick, building our clients’ capabilities.

• Our True North values that mean we do the right thing for our clients, people and communities – always.
We have deep industry and functional expertise

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<th>INDUSTRY EXPERTISE</th>
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We cross industry and functional boundaries together to create value
Bain’s Oil & Gas practice operates as a global team

**Bain Global Oil & Gas Practice**
- **50** Partners
- **400** Managers and Oil & Gas experienced consultants
- **10** Expert senior O&G advisors
- **5** Oil & Gas office hubs
- **20** Oil & Gas spokes
- **50** Bain & Company offices overall

**Strategy, Operations, Organisation, Technology, Due Diligence**

**TRACK RECORD**
- **8/10** Advise 8 of world top 10 O&G producers. 33 of top 100
- **700** Over 700 oil & gas sector projects for NOCs, IOC’s and Service Companies
- **4x** Private equity RMS, Bain works on the majority of large oil & gas deals
- **9.0** Net Promoter Score (NPS) client project feedback
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• How to achieve it?: A systematic approach
Context: O&G companies face multiple structural headwinds...

**NEXT GENERATION OF ASSETS**

**RISING COSTS**

CRITICAL SKILLS SHORTAGES

- Expected critical skill shortages:
  - Well Engineering, Project Management, HSE experts, energy efficiency, logistics, procurement, remote location staff, reservoir management, IT, Finance

"22% of oil & gas respondents indicated a lack of qualified personnel was already impacting their operations’

EY Oil & Gas Risk & Opportunity, 2011

"Behind this global energy challenge lies a HR challenge ...transforming the world’s energy system will require a deep pool of talent deployed on a truly global basis"

H Mitchell, Chief HR & Corporate Officer, Shell 2012

Source: IHS CERA
... and dropping oil prices
What is Excellence?

“Excellence is an art won by training and habituation…

We do not act rightly because we have virtue or excellence, but we rather have those because we have acted rightly...

We are what we repeatedly do...

Excellence, then, is not an act but a habit…”

Aristotle
Operational Excellence: Outstanding performance across all aspects of the business...

- **Top quartile performance on key value drivers** and return on capital across all assets

- Enviored reputation in the industry and the region for best-in-class operations and sustainable business practices

- Highly talented and skilled workforce and management

- Institutionalized capabilities across technical and supporting functions

- Large pool of talent

- **Top Quartile Asset Performance**

- **Best in class Processes & Systems**

- **World-class HSSE**

- **High Performance Culture**

- **Distinctive Capabilities**

- **Immaculate Reputation**

- Standardized, consistent OE system adopted across Group

- World-class processes & systems

- Seamless structure for integration of acquisitions

- Best in class results on HSSE metrics and superior HSE culture

- OE mindset in all activities and culture across all assets and functions

- Continuous improvement mindset & behaviours

Source: Bain & Co.
...supported by an **Operational Excellence Management Systems (OEMS)**

**CONTENT:**
Operational policies and procedures based on Best Demonstrated Practices (BDPs)

**PRACTICES**

1. **Content**
2. **Deployment**
3. **Compliance**
4. **Performance**

**OPERATIONAL EXCELLENCE:**

1. **Content**
2. **Deployment**

**RESULTS**

3. **Compliance**
4. **Performance**

**DEPLOYMENT:**
An appropriate governance to consistently roll-out BDPs

**COMPLIANCE:**
Ruthless focus on driving BDPs compliance to achieve results

**PERFORMANCE:**
Focus on results and a continuous performance improvement mindset

Source: Bain & Co.
## Typical Operating Excellence Management System (OEMS) elements

<table>
<thead>
<tr>
<th>Element</th>
<th>bp</th>
<th>Chevron</th>
<th>ConocoPhillips</th>
<th>ExxonMobil</th>
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<tbody>
<tr>
<td>1. Strategy &amp; Leadership</td>
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<td>8. Health, Safety, Security &amp; Environment</td>
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<td>9. Management of Contractors</td>
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<td>11. Operational Risk Management</td>
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<td>12. Incidents &amp; Emergency Management</td>
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<td>13. External Stakeholders Responsibility</td>
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<td>14. Knowledge Management</td>
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Source: Company websites and publications, Bain analysis
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Achieving Operational Excellence is hard as it requires four conditions to be true concurrently.

**CONTENT:** Operational policies and procedures based on Best Demonstrated Practices (BDPs)

**DEPLOYMENT:** An appropriate governance to consistently roll-out BDPs

**COMPLIANCE:** Ruthless focus on driving BDPs compliance to achieve results

**PERFORMANCE:** Focus on results and a continuous performance improvement mindset

Source: Bain & Co.
The combination of practices and results scores determines the actions required to achieve OE

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**PRACTICES**

![Diagram showing the combination of practices and results scores]

- **“UNSUSTAINABLE”**
  - Performance achieved through experience of few critical resources rather than codified and deployed best practices

- **“LEADING”**
  - Complying with robust processes are yielding best in class results

- **“MUST FIX”**
  - Presenting a major risk to operations due to noncompliant processes & lagging performance

- **“UNDERPERFORMERS”**
  - OES are defined and deployed but lagging in performance due to poor compliance

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**RESULTS**

- **Weak**
- **Basic**
- **Strong**
- **Excellent**

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Source: Bain & Co.

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It is typical for companies to have areas that need intervention. All assets have gaps in SCM – SCM corporate initiative launched. Asset A champions Integrated Planning and rolls out best practices to other assets. Non-compliance culture a company wide challenge – Culture change program set up.

Important to balance sense of urgency with proper front end loading

Establish baseline and performance level

Develop levers and root causes

Develop and refine opportunities

Act against a clear roadmap

- Ensure benchmarks are **fit-for-purpose**

- **Customise** to specific situation to draw accurate conclusions

- **Build capabilities** for lasting usage

- Use **expert practitioners** with hands-on experience to develop and refine opportunity list

- Refine and review opportunity list in **workshops** to stress-test conclusions and enable **buy-in** from the organization

- Balance value, time to capture and effort

- Ensure the plan is **pragmatic and doable**

- Ensure the plan is fully **bought into**

- Provide full clarity on **targets** and milestones
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ExxonMobil’s Operations Integrity Management System (OIMS)

Source: Exxon Mobil OIMS Manual
ExxonMobil’s OIMS – what it looks like

Framework
- 11 elements – underlying principles

Requirements
- 65 expectations, ordered by element
- Over 200 guidelines which further expand

Systems
- Element and business unit specific OIMS systems
  - Scope and objectives
  - Processes and procedures
  - Responsible and accountable resources
  - Verification and measurement
  - Feedback and improvement mechanisms

Supporting documents (not new)
- Processes, practices, drawings etc.
  - these all existed before, but the management system introduces consistency and discipline in their use
BP’s Operational Excellence Management System (OMS)

OEMS sets the strategic direction and provides the content of OE.

Assets/Plants/BUs apply continuous improvement to local business processes and deliver results.

The continuous improvement cycle is the approach & toolkits to improve performance.

Source: Driving operating excellence across an organisation, John S Sieg, Jr. Vice President of Safety and Operations – BP America
BP’s OMS – What it looks like

Framework

• 8 Elements of Operating, business processes, performance improvement

Requirements

• 48 sub-elements – ordered by element
• 200 essentials that set further requirements

Systems

• Processes to deliver OMS sub-elements / essentials (process steps; data driven meetings; supporting tools/systems, MI, feedback loops; roles and responsibilities defined, with competent people in place; culture of compliance, supported by incentives)

• Accountabilities for delivery of OMS conformance

• OMS Library (OMS Navigator as a front end)
• OMS handbooks/How We Work documents

Supporting documents

• Processes, practices, drawings etc.
  – these all existed before, but the management system introduces consistency and discipline in their use
Putting an OEMS in place

**Design**

- Agree definition of OE
- Design robustly
  - Scope and structure
  - Requirements
  - Links to processes
- Map accountabilities from the top to front line

**Implement**

- Base approach and pace on business objectives
- Lead from the top, with sponsorship spine
- Over-communicate
- Resource appropriately

**Sustain / Improve**

- OE is how the company works – not separate from business
- Lead from the top with aligned incentives
- Have assessment process “with teeth”
OEMS elements

**OE vision, objectives & values**

• A clear definition of what Operational Excellence means for the organization, including a common vision and well-articulated objectives

**Organizational governance**

• Clearly defined roles and responsibilities for defining, deploying, and sustaining operational excellence across the organization

**Set of OE requirements**

• A set of requirements that outline what it takes to achieve operational excellence, including links to the processes that deliver conformance to these req’ts

**Continuous improvement**

• A replicable approach and a set of tools to identify and deploy best practices in the organization and continuously improve performance
Robust design of OEMS: four best practices to keep in mind

- Conscious choice of scope (OEMS is not everything)
- Manageable number of requirements
- Requirements of equal importance
- Requirements linked explicitly to how the business is ran
Agreed, single definition of OE

“The systematic management of process safety, personal safety and health, environment, reliability and efficiency to achieve world-class performance is how we define Operational Excellence (OE)”

Source: Chevron website
Accountabilities mapped from top to front line

Ensure leaders embrace the OEMS

- Ultimate accountability for OE delivery sits with the executive team
- Different leaders own different parts of OEMS

Cascade accountability for the OEMS

- Accountabilities flow from top to front line
- Delivery of OEMS requirements explicitly tied to individual positions
Approach and pace driven by business objectives

• Too much to do everything at once – must prioritize

• Multiple choices for scope
  - OE area focused
  - BU focused
  - Broad

• Note: need to balance standardization and OE agendas
Leadership is key to a successful deployment

**Leaders must:**

- Understand OEMS
- View OEMS as the way to run operations, not an additional / parallel framework
- Walk the talk

**Leading an OE implementation requires significant commitment**
Some best practices on communications

- As simple as practical
- Continuous from onset of design
- Includes view on what is not changing
- Leaders speak about OE in common way

Effort required to communicate should not be underestimated
Sustain: assessment process with teeth

ExxonMobil OIMS’ example:

- Career implications and incentives
- “Trust, but verify” culture

**Culture/Leadership**

- Team of ~10 including individuals from functions, regions
- No full time assessors

**OIMS Assessment Team**

- Peer reviews ~3 years – internal review in the interim
- ~3 week review process
- No mandate actions – however, high priority areas are monitored by top leadership

**Assessment Process (Country operation, refinery)**
It is a multi-year journey

**OE journey to full operational Potential**

- **Typical challenge**

**Operational Elements & Scope**

**Results Delivery (RD)**

**Continuous Performance Improvement (CPI)**

Source: Bain & Co.
Thank you and Happy Holidays!

People. Passion. Results.