



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

Society of Petroleum Engineers

December 2nd, 2014

DRAFT

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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

Confidentiality

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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**



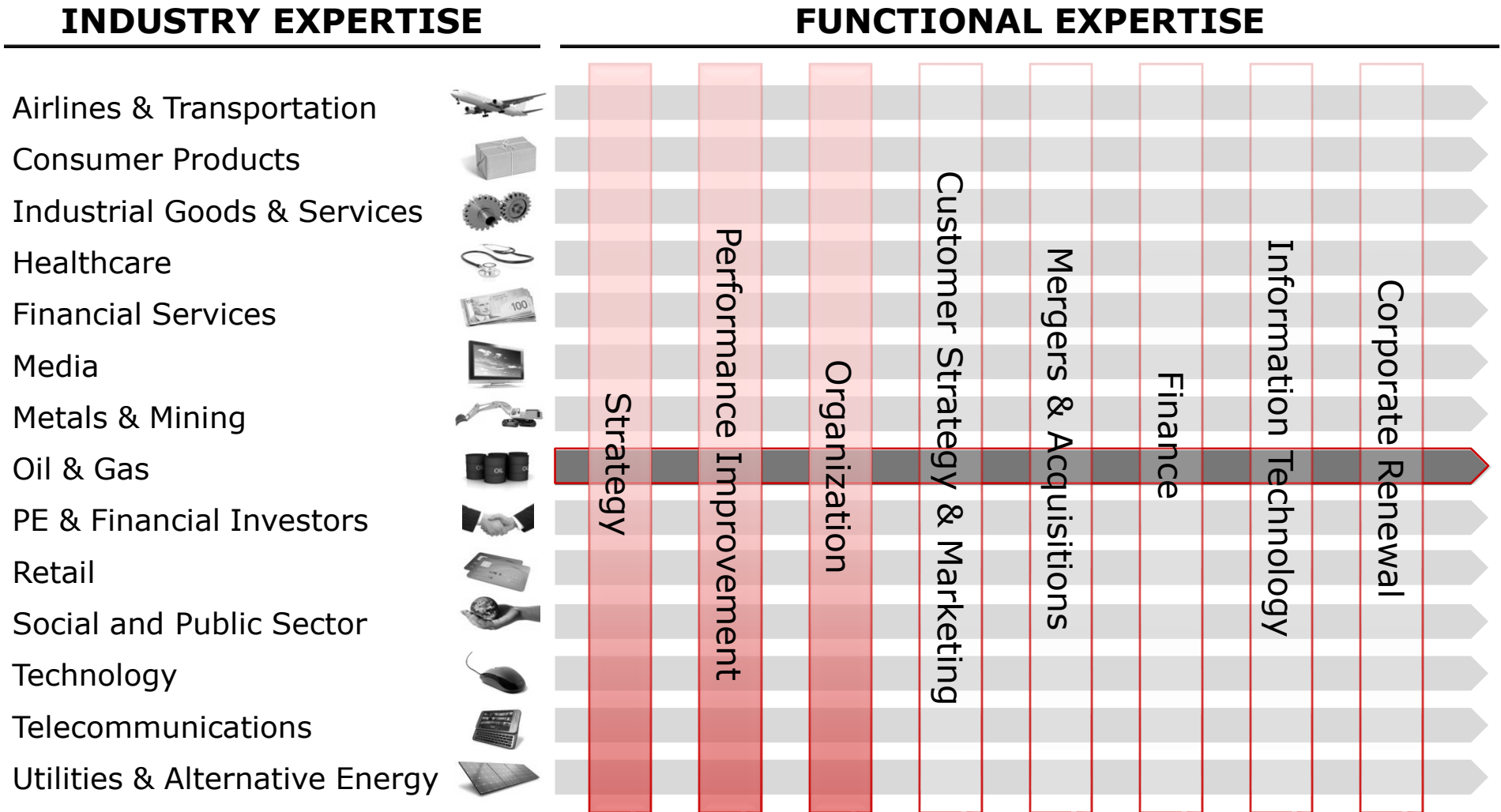
Our people, approach, and track record set us apart

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



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
400
10
5
20
50

Partners

Managers and Oil & Gas
experienced consultants

Expert senior O&G advisors

Oil & Gas office hubs

Oil & Gas spokes

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



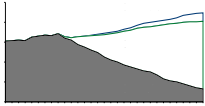
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Context: O&G companies face multiple structural headwinds...

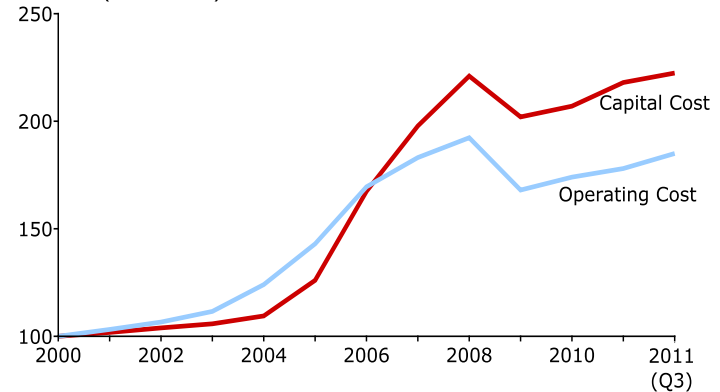
NEXT GENERATION OF ASSETS



Need add 43 - 48 MM bpd by 2020

RISING COSTS

CERA Upstream Capital and Operating Cost Indices (2000 = 100)



CRITICAL SKILLS SHORTAGES

- Expected critical skill shortages:

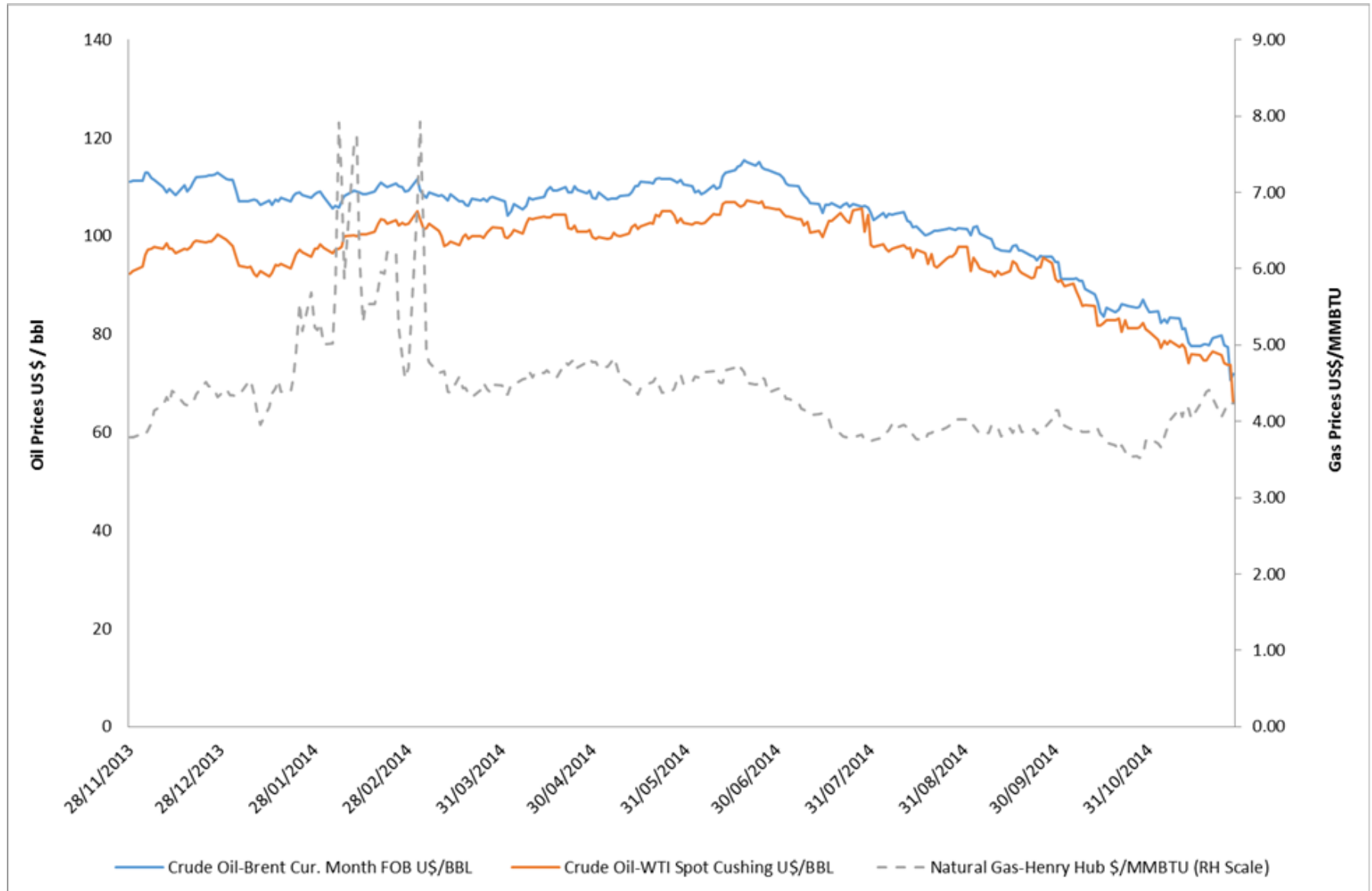
- Well Engineering, Project Management, HSE experts, energy efficiency, logistics, procurement, remote location staff, reservoir management, IT, Finance

"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

... and dropping oil prices



What is Excellence?

"Excellence is an art won by training and habituation..."

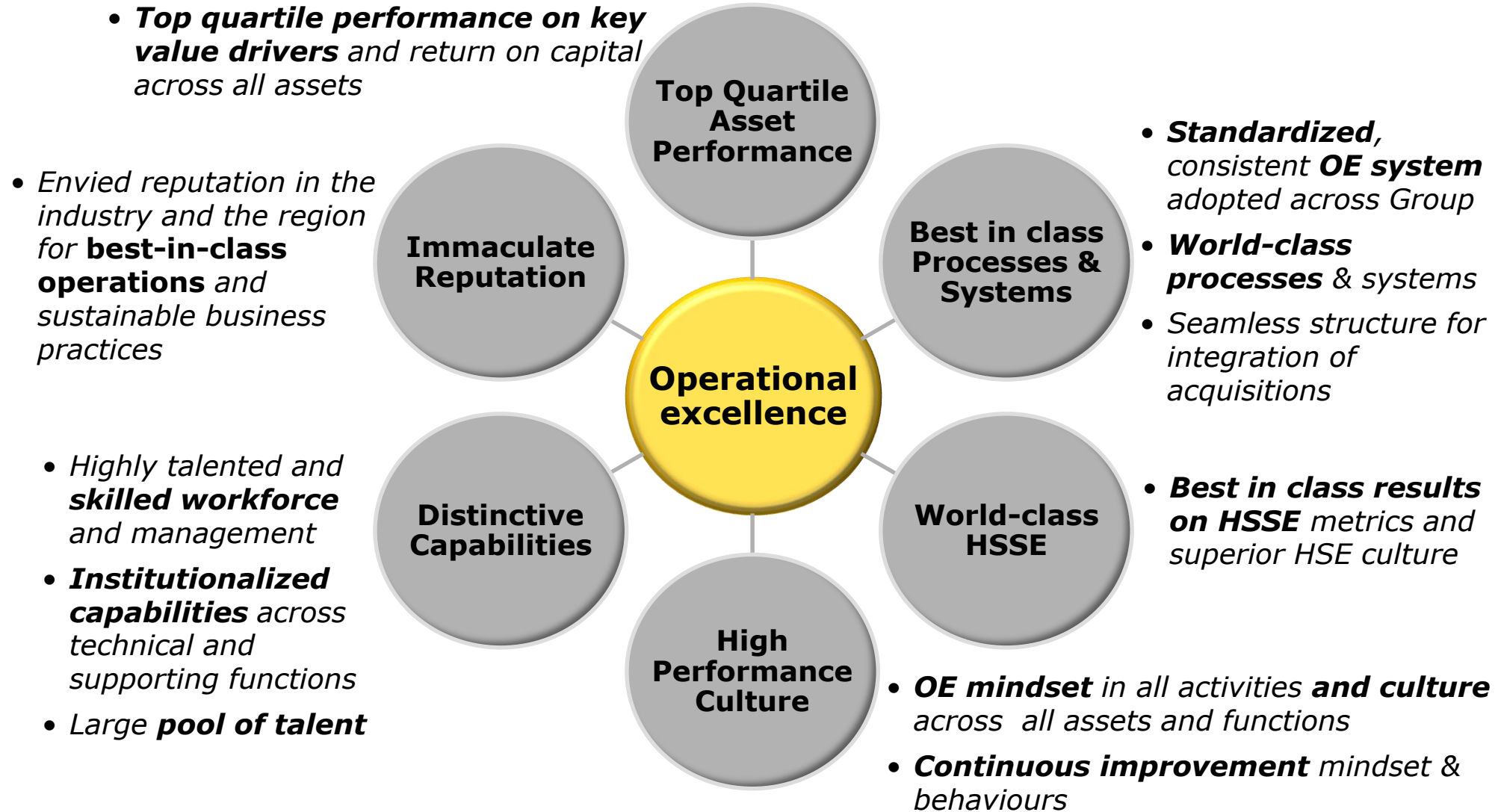
We do not act rightly because we have virtue or excellence, but we rather have those because we have acted rightly...

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...



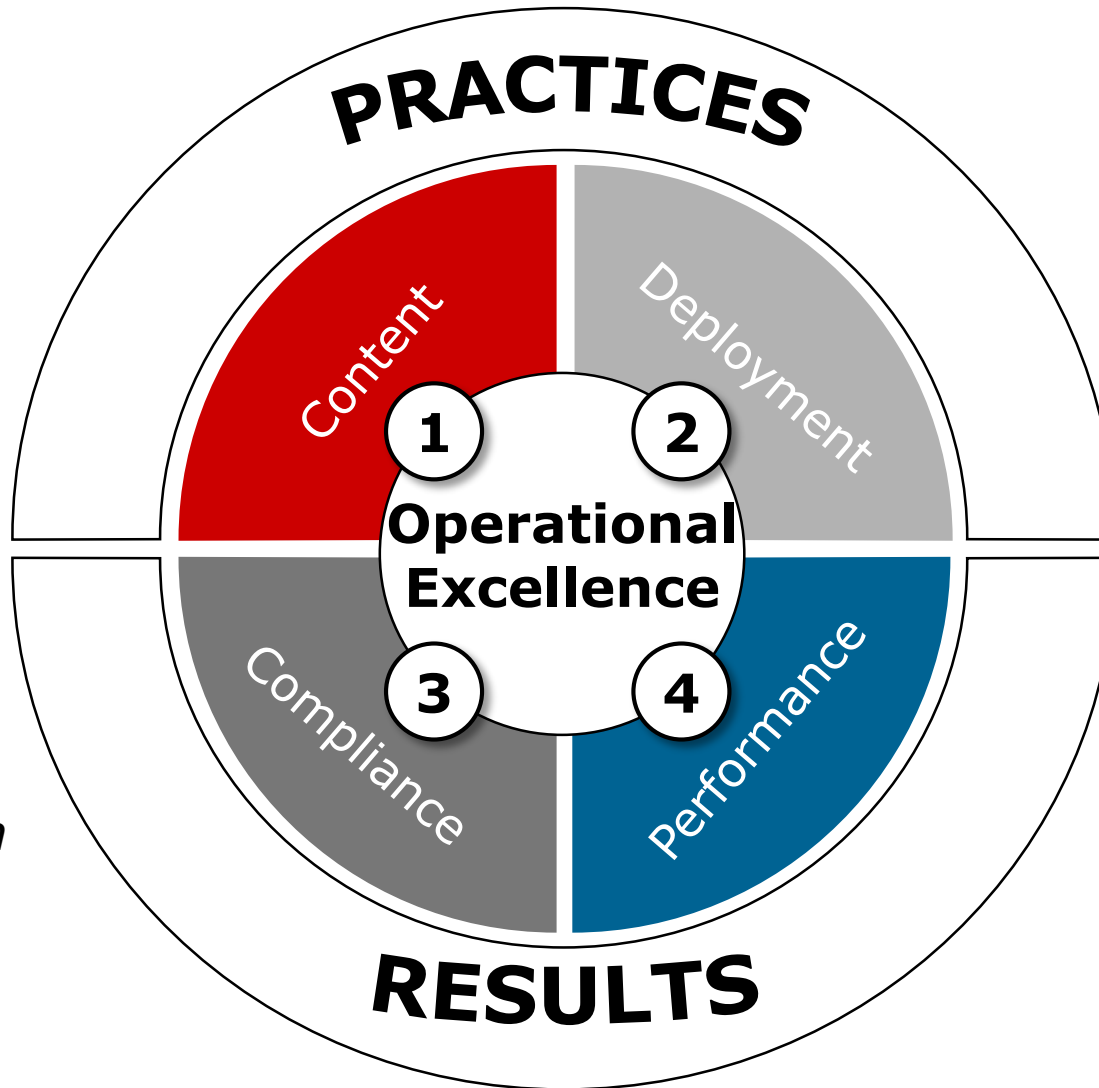
...supported by an **Operational Excellence Management Systems (OEMS)**

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



OEMS scope across majors is similar

PRELIMINARY

Typical Operating Excellence Management System (OEMS) elements					
1. Strategy & Leadership	✓	✓	✓	✓	✓
2. Organization & Capabilities	✓		✓	✓	✓
3. Performance Management	✓			✓	✓
4. Management of Change	✓	✓		✓	✓
5. Planning & Optimization	✓		✓		✓
6. Operations & Production	✓	✓	✓	✓	✓
7. Asset Integrity Management & Reliability	✓	✓	✓	✓	✓
8. Health, Safety, Security & Environment	✓	✓	✓	✓	✓
9. Management of Contractors	✓	✓	✓	✓	✓
10. Capital Projects mgmt & execution	✓	✓	✓	✓	✓
11. Operational Risk Management	✓			✓	✓
12. Incidents & Emergency Management	✓	✓	✓	✓	✓
13. External Stakeholders Responsibility	✓	✓	✓	✓	✓
14. Knowledge Management	✓			✓	✓

Source: Company websites and publications, Bain analysis

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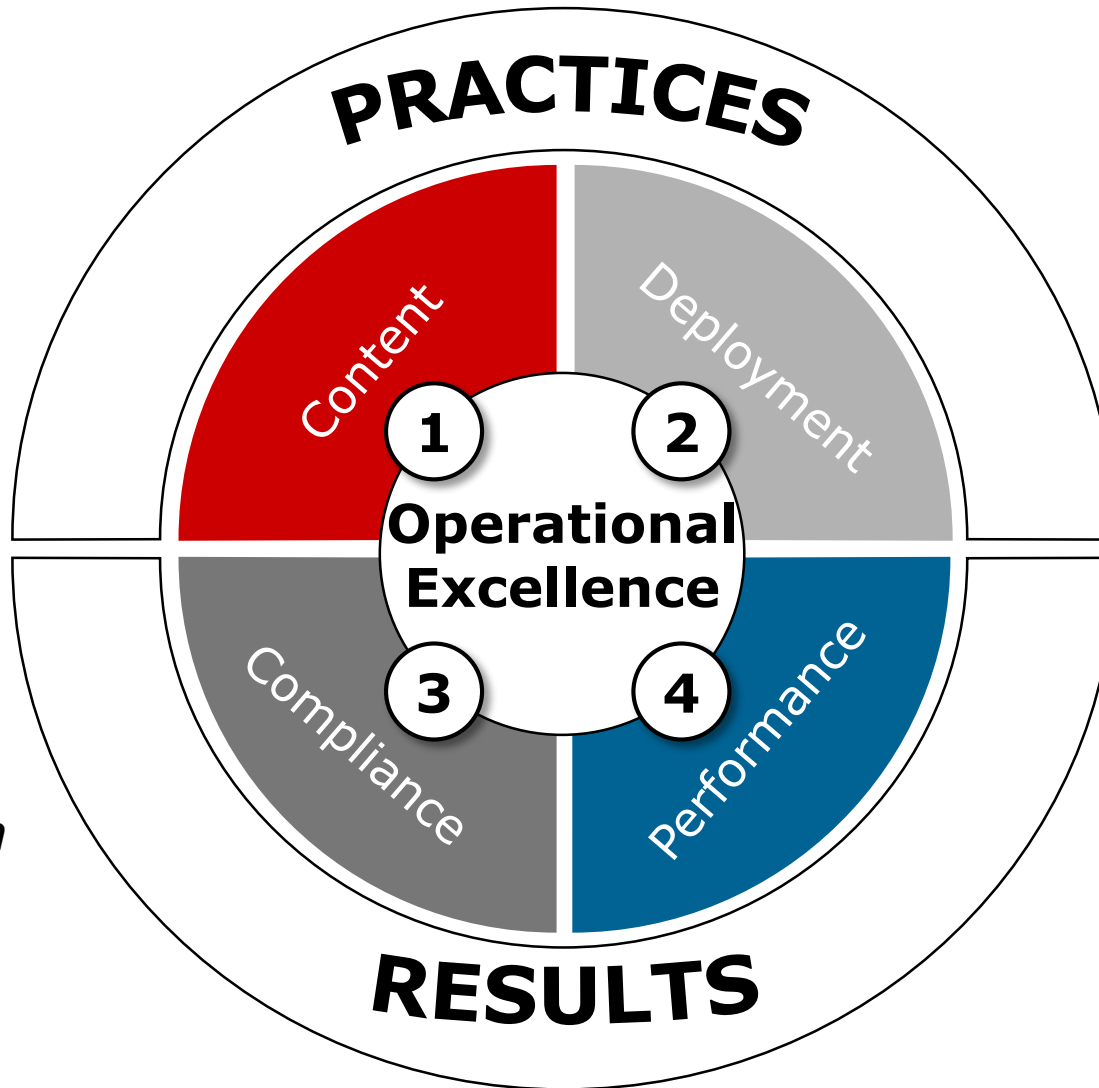
Achieving Operational Excellence is hard as it requires **four conditions to be true concurrently**

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

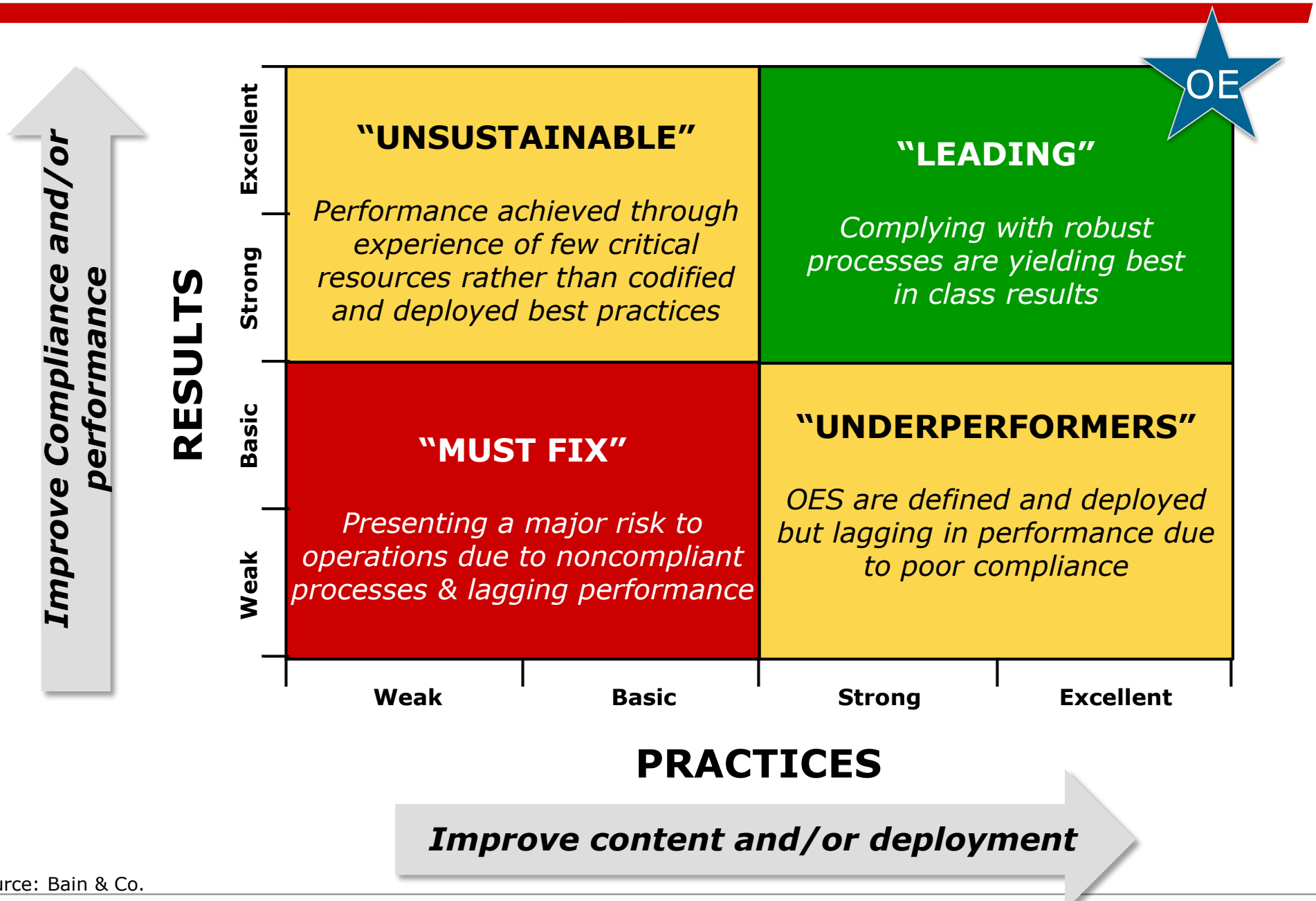
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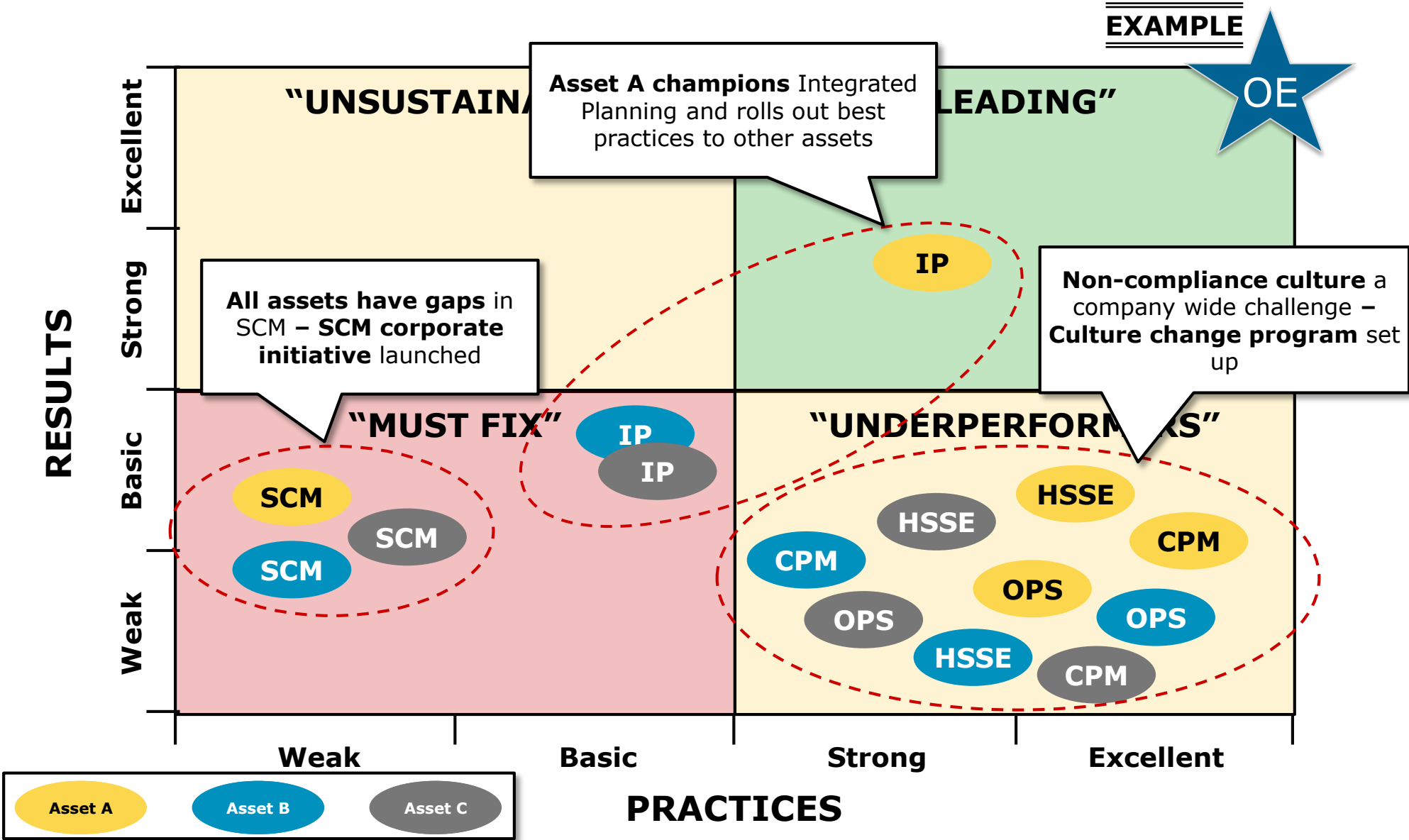


The combination of practices and results scores determines the actions required to achieve OE



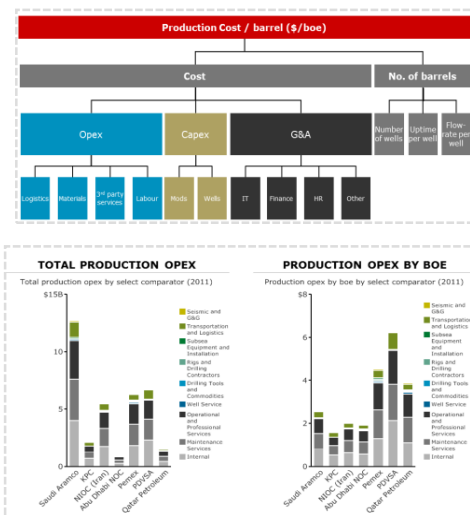
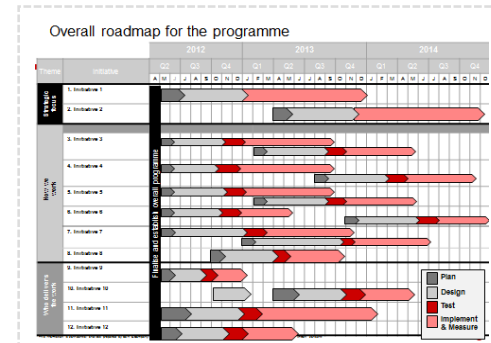
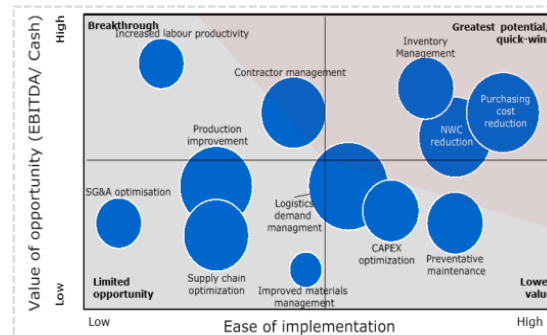
Source: Bain & Co.

It is typical for companies to have areas that need intervention



Note: SCM = Supply Chain Management; IP = Integrated Planning; HSSE: Health, Safety, Security & Environment; OPS = Operations; CPM = Capital Projects Management

Important to balance sense of urgency with proper front end loading

[illegible]

- 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)



OIMS 11 Elements

ExxonMobil



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

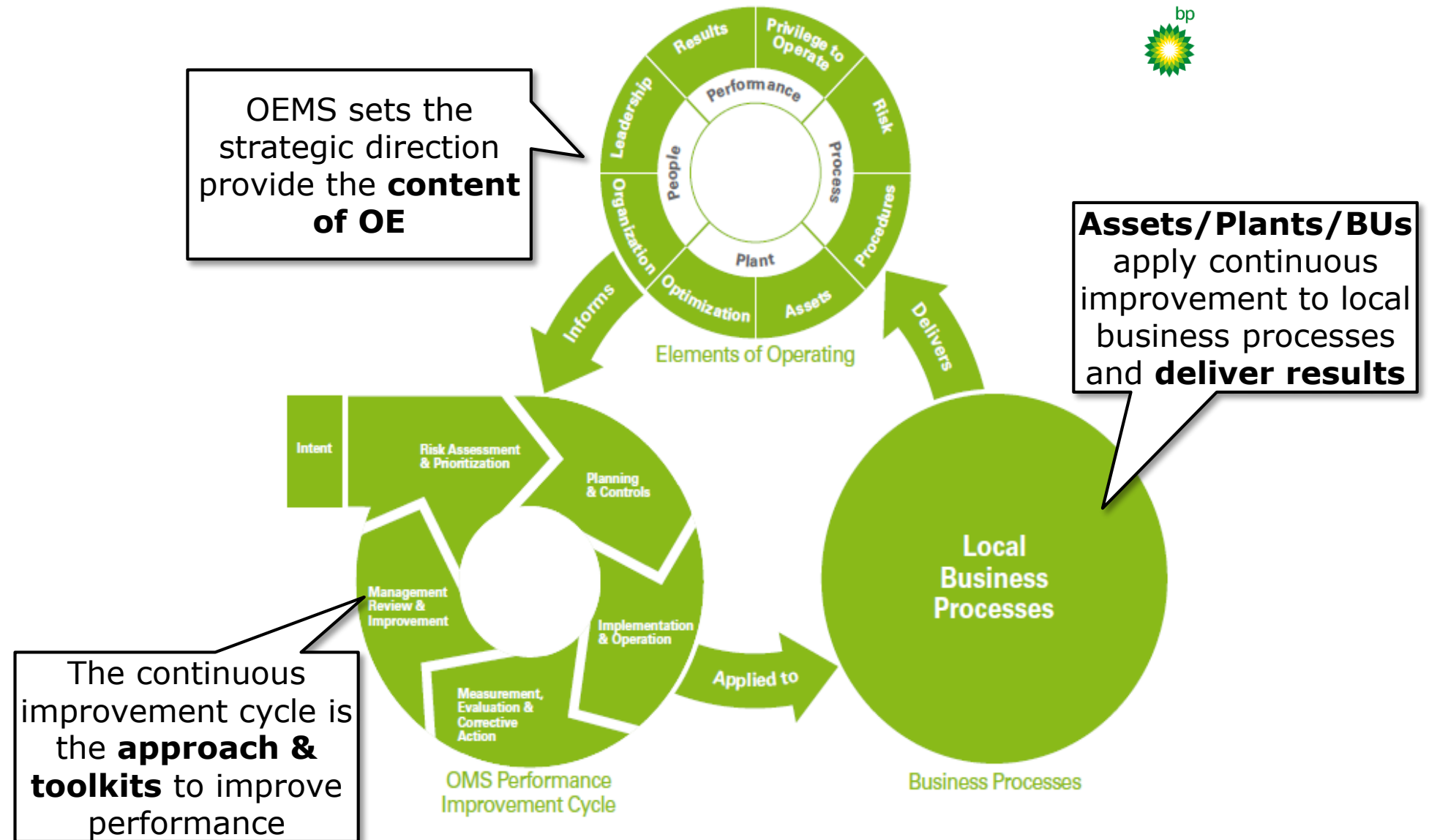
Systems

- 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)



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”

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

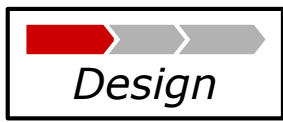


- A set of requirements that outline **what it takes to achieve operational excellence**, including links to the processes that deliver conformance to these req'ts

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



Source: Chevron website

"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)"

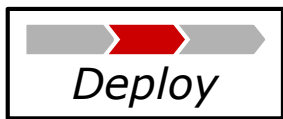
Accountabilities mapped from top to front line

**Ensure
leaders
embrace the
OEMS**

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

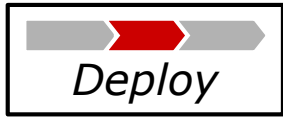
**Cascade
accountability
for the OEMS**

- Accountabilities flow from top to front line
- Delivery of OEMS requirements explicitly tied to individual positions



Approach and pace driven by business objectives

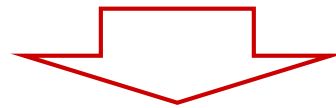
- Too much to do everything at once – must prioritize
- Multiple choices for scope
 - OE area focused
 - BU focused
 - Broad
- Note: need to balance standardization and OE agendas



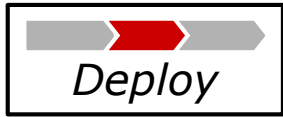
Leadership is key to a successful deployment

Leaders must:

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



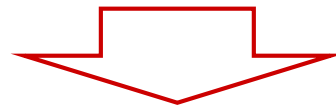
**Leading an OE implementation
requires significant commitment**



Communicate, communicate, communicate

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:

Culture/ Leadership

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

OIMS Assessment Team

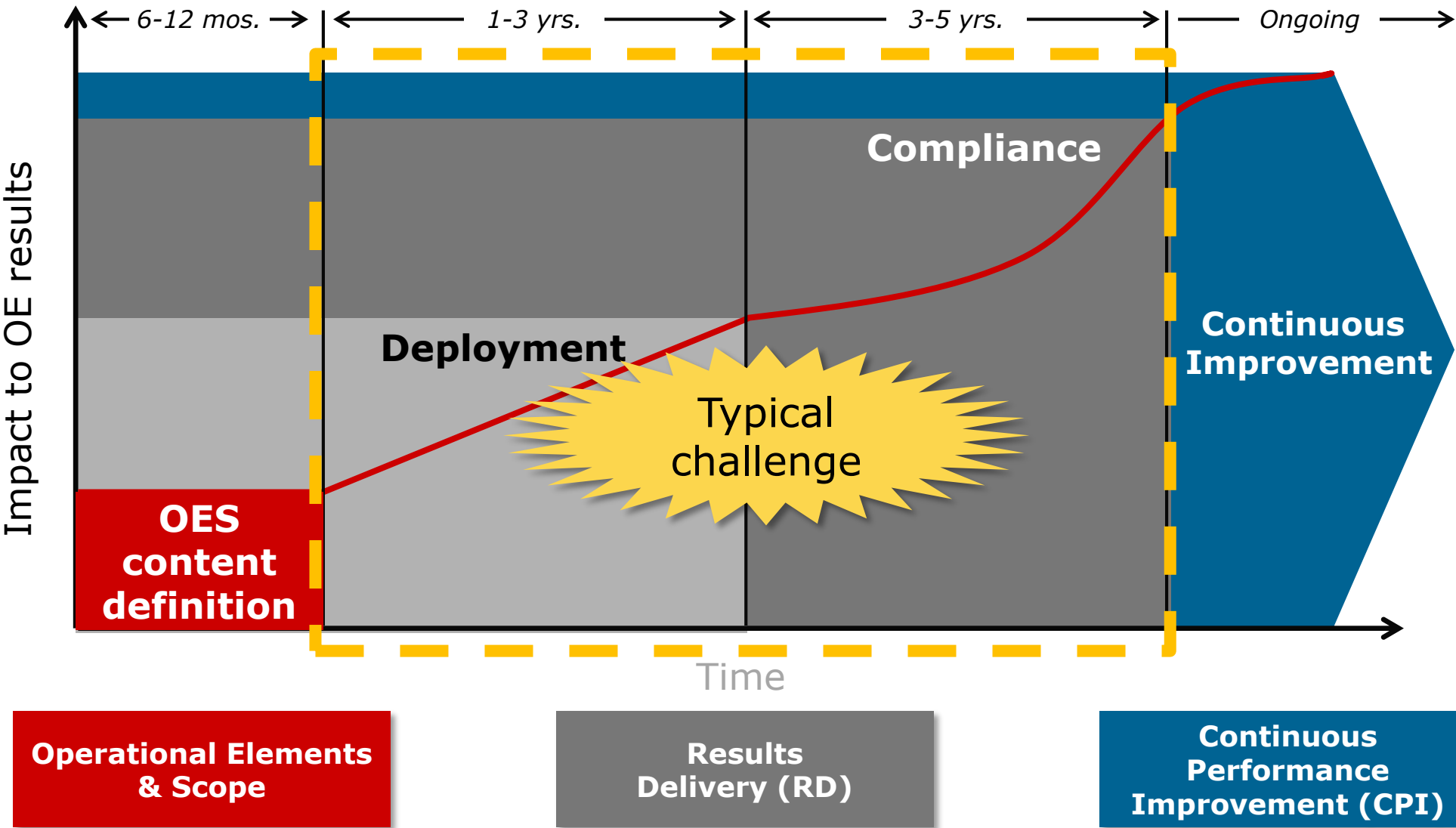
- Team of ~10 including individuals from functions, regions
- No full time assessors

Assessment Process (Country operation, refinery)

- 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

It is a multi-year journey

OE journey to full operational Potential



Source: Bain & Co.

Thank you and Happy Holidays!



People. Passion. Results.