

**Category:** Accelerated development of Iran oil and gas fields: value creation in the world's largest hydrocarbon resources

**Panel Title:** Lessons learned in the development and production of Iran oil and gas fields and the potential for increased productivity in the fields

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## Delivering long-term value in E&P

The next wave of opportunity for the new economic reality

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A red pencil is shown from the right side, with its eraser tip touching the word 'ZEROING' in the main title. The eraser is actively removing the letters, with small red shavings and dust visible around the point of contact. The word 'OUT THE PAST' remains intact and is written in black.

# **ZEROING** **OUT THE PAST**

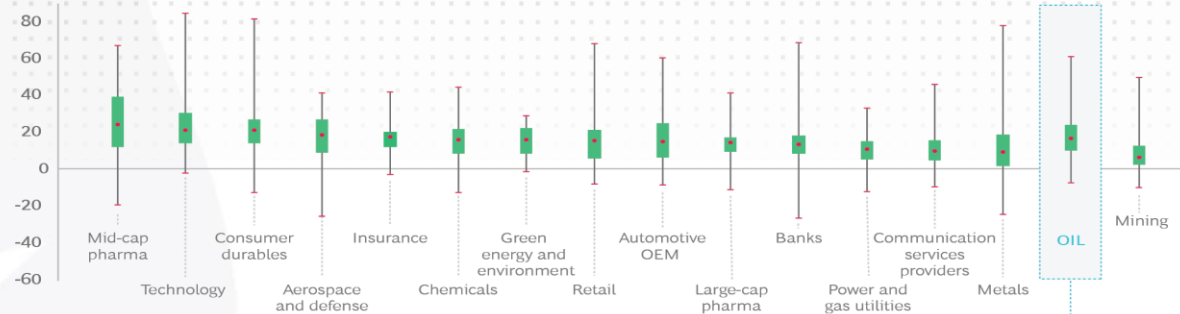
**If you always do what you always did, you will  
always get what you always got.**

Albert Einstein's words ring true today—a warning for companies trying to drive growth and profitability in disrupted markets by looking at the past instead of designing for the future.

# Oil Industry situation in value creation (1/2)

## The Oil Industry Delivered Weak TSR but Some Subsectors Performed Well

Five-year high, low, and median TSR per sector (sample sectors, January 2013 through December 2017)



High, low, and median TSR per oil and gas subsectors (select subsectors, June 2014 through December 2017)



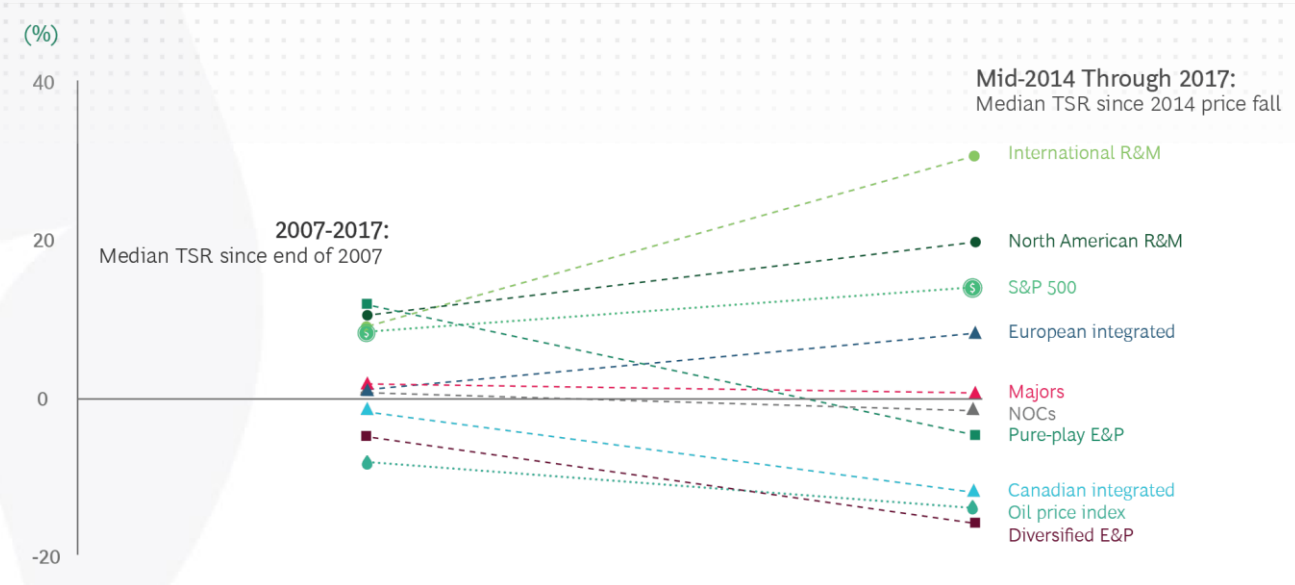
Sources: S&P Global Market Intelligence; Thomson Reuters Eikon; S&P Capital IQ; BCG ValueScience Center; BCG analysis.

Note: n = 2,425 in full study (this chart shows a wide range of select industry groups). For companies in each O&G subsector, please see the appendix of this report.



# Oil Industry situation in value creation (2/2)

## Diversity in TSR Performance Increased During the Recent Downturn



Sources: S&P Capital IQ; BCG ValueScience Center; BCG analysis.

Note: For companies in each peer group, please see the appendix of this report.

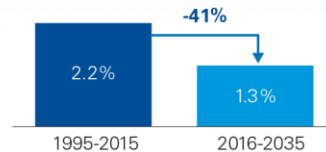


# E&P: Now a margin business

The underlying economics of the upstream exploration and production (E&P) industry have fundamentally altered, turning it into a margin business

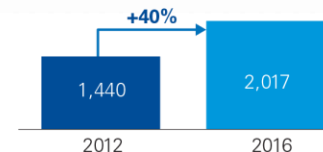
## A seismic shift in the underlying economics

Global growth in energy consumption p.a.<sup>1</sup>



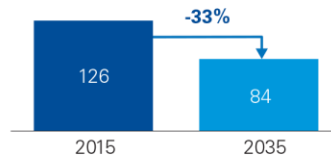
Global renewable energy capacity (GW)<sup>4</sup>

Giga Watts



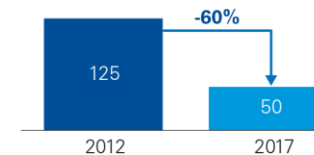
Global energy intensity (TOE/US\$m)<sup>2</sup>

Tonne of oil equivalent (TOE) per million dollars



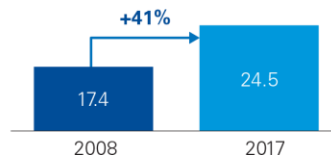
Cost of utility-scale solar power (US\$/MWh)<sup>5</sup>

Mean levelized cost of energy (LCOE) per Mega Watt Hour (MWh)

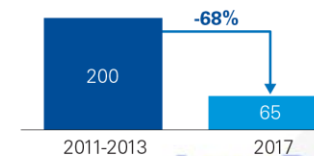


Total US oil and gas production (MMBOED)<sup>3</sup>

Million barrels of oil equivalent per day



Global Greenfield E&P Capex (US\$bn p.a.)<sup>6</sup>



Source: KPMG



# Five ways to drive longer-term value in E&P

The 'third wave' of opportunity: An outward-looking commercial mindset.



## Zero-based asset costs

Reduce operating costs by 25 percent across the portfolio by tailoring processes, standards and service levels to the needs of different operations



## Agile supply chains

Reduce third party costs by more than 10 percent by thinking like a manufacturing business, with targeted integration and collaboration through the supply chain



## Using machines to make decisions

Utilize advanced data and analytics to achieve a step-change in the speed and performance outcomes of complex, high-stakes operational decisions



## Value-based prioritization

Only perform work that adds value, and constantly assess costs versus benefits – including the value of risk mitigated



## Intelligent process automation

Leverage automation advances to achieve as much as 30 percent reduction in support function costs, and increase accuracy of transactional processes.



Source: KPMG

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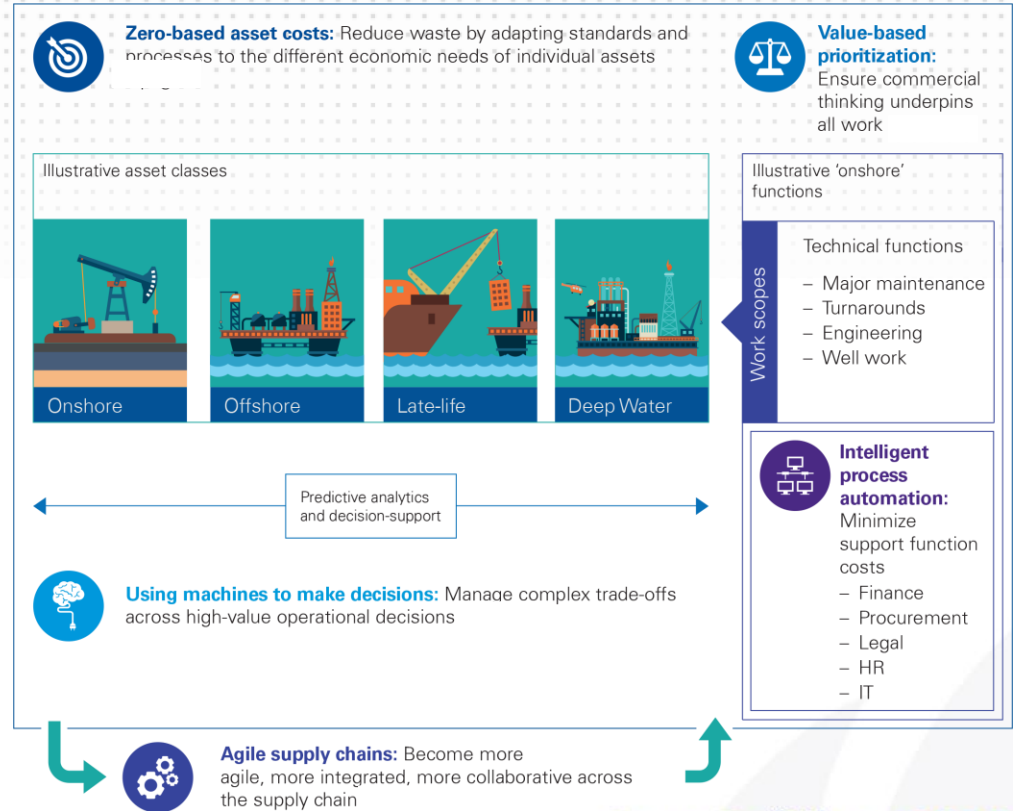
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**Iran Drilling 2019**  
**Iran E & P 2019**

# Five ways to drive longer-term value in E&P

## Five key sources of long-term value across the E&P operating model

some of the leading players are already targeting unit cost improvements of approximately 30 percent by making changes across some of the following five areas



Source: KPMG

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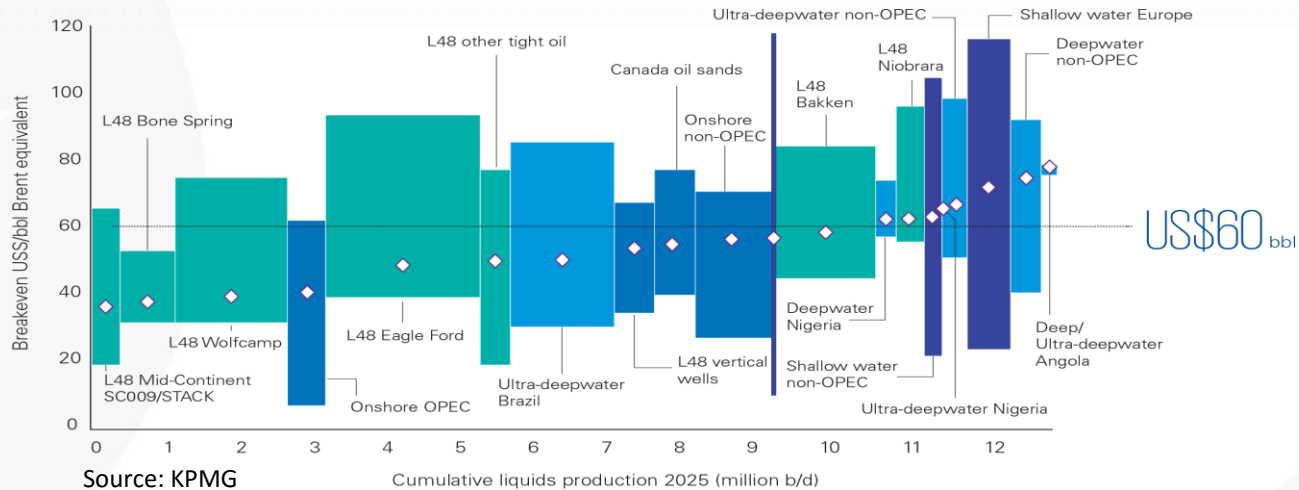
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# 1- Zero-based asset costs (1/3)



Tailoring asset strategies is not enough to take out unnecessary costs. E&P companies should clearly differentiate between underlying standards and processes.

Break-even prices for different asset classes



■ Deepwater   
 ■ Shallow water   
 ■ Lower 48 Tight oil   
 ■ Onshore   
 ◆ Weighted average breakeven based on 2025 production

**Iran Drilling 2019**  
**Iran E & P 2019**



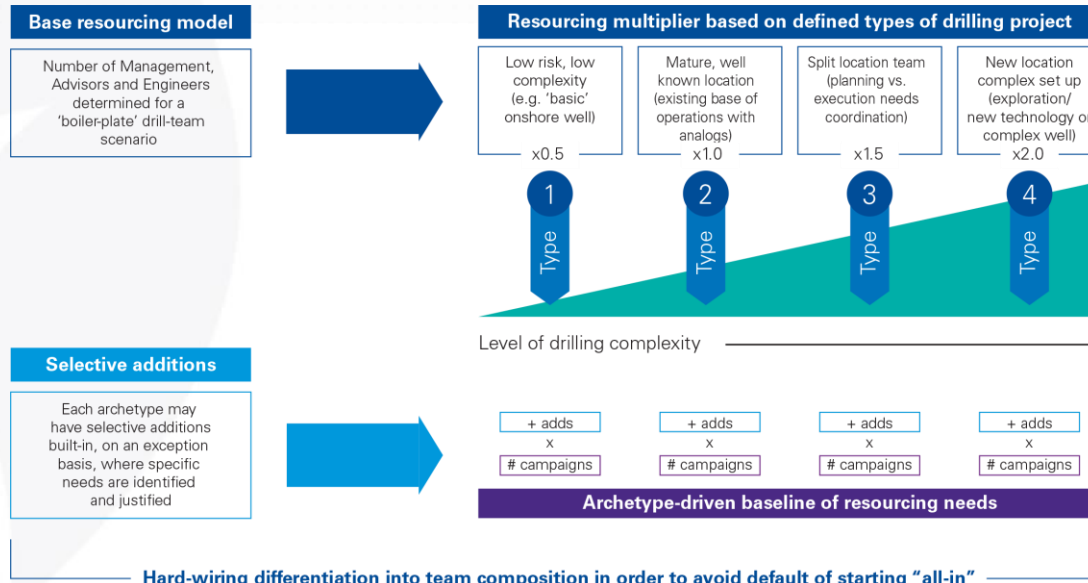


# 1- Zero-based asset costs (2/3)



In response, the company developed a tailored set of drilling archetypes, to optimize costs and resources across different campaign needs

## Example of differentiation between archetypes : drilling

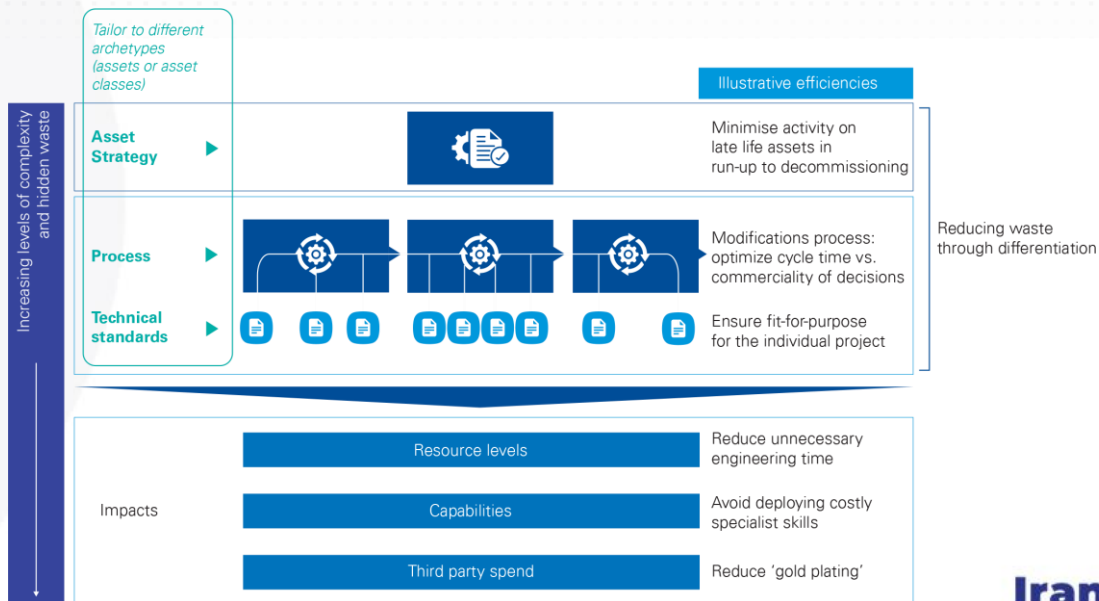


# 1- Zero-based asset costs (3/3)



Many E&P firms have told about tailoring high-level strategies to different asset classes. Yet these efforts have yet to tackle the deeper, underlying drivers of complexity and cost

Different levels of differentiation between asset archetypes

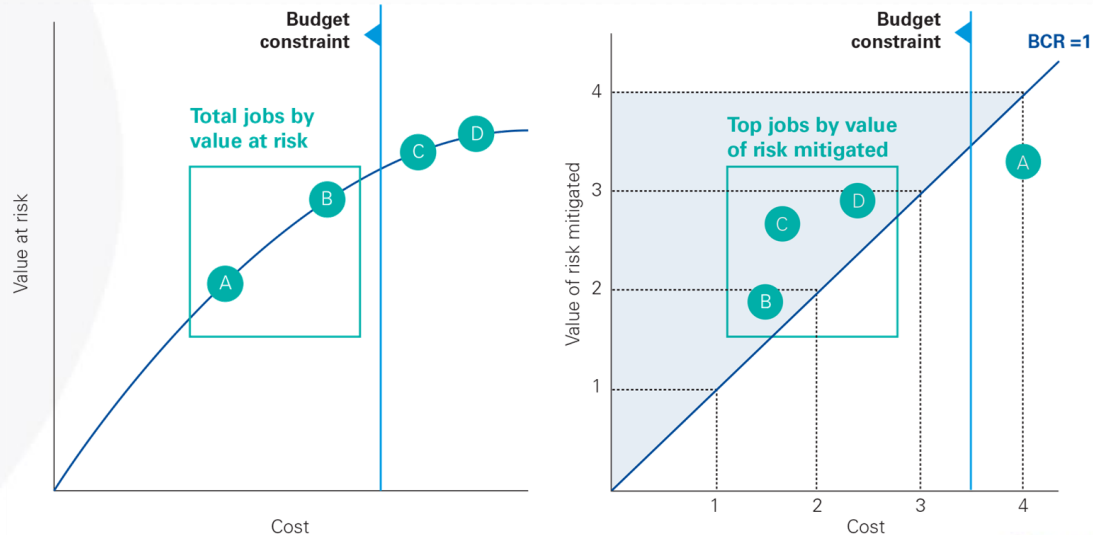


## 2- Value-based prioritization



Economic pressures are driving a new commercial mindset across functions where engineering excellence was traditionally the priority.

Illustrative example of prioritization using benefit-cost ratio (BCR)



Source: KPMG

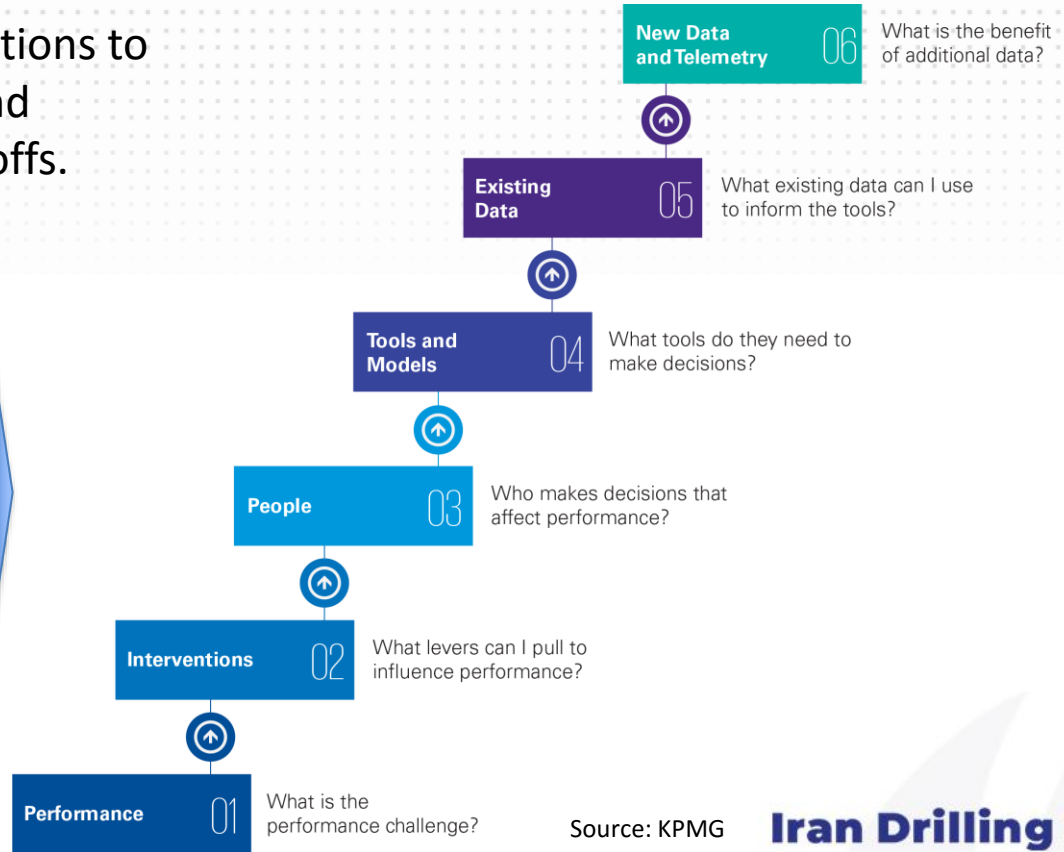


# 3- Using machines to make decisions



New data and analytics solutions to improve decision-making and optimize high-stakes trade-offs.

Delivering decision-support technology solutions by starting with performance outcomes



Source: KPMG

**Iran Drilling 2019**  
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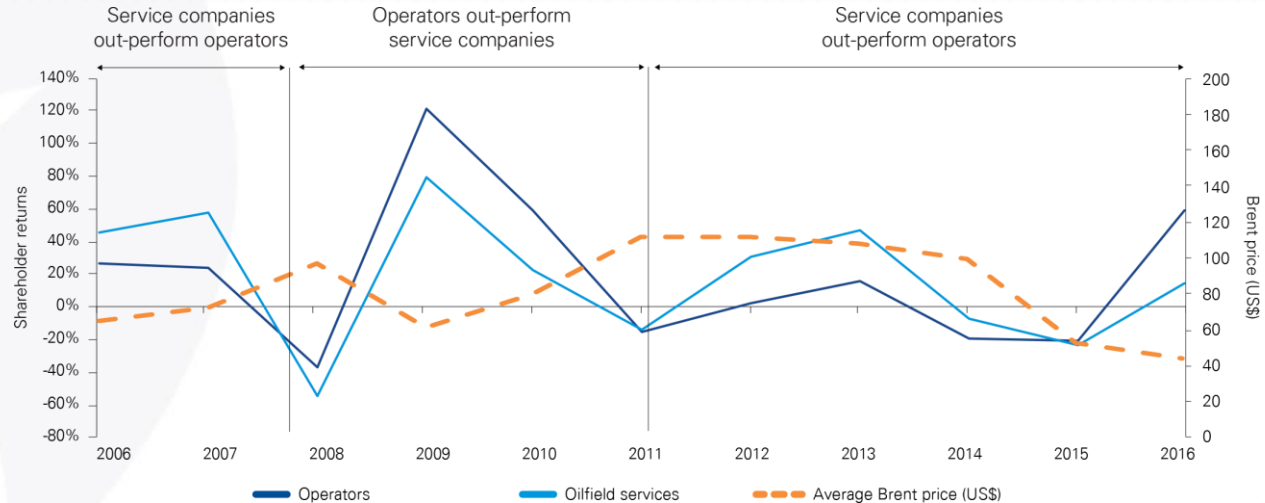


## 4- Agile supply chains (1/2)



Companies should think like manufacturing businesses, working closely with suppliers to become more agile and efficient.

A 'zero-sum game': Upstream total shareholder returns, 2006-2016



Source: KPMG



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## 5- Intelligent process automation



New automation technologies are helping to reduce transactional back office support costs by up to 30 percent, whilst simultaneously reducing error rates.

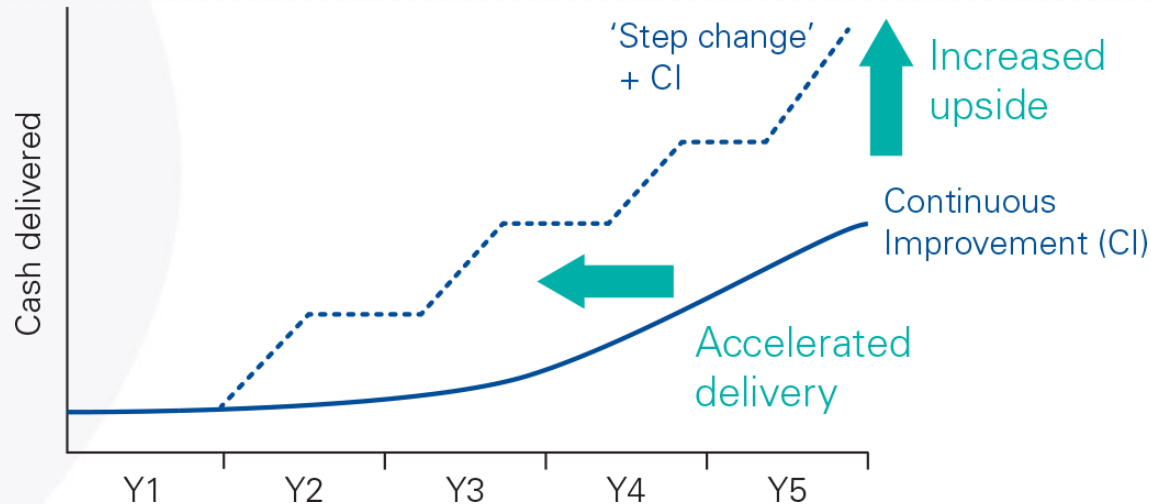
- Support functions typically represent a relatively small but nonetheless important cost for E&P firms
- If E&P organizations are to become truly competitive, they should address the cost and complexity built into traditional service models
- The approach to automation is very simple and the technology required to deliver it is straightforward, meaning benefits can be delivered cheaply and at pace –often in a matter of weeks.
- Support functions are also using advanced data and analytics algorithms to identify value opportunities



## Conclusion : Delivering the prize

Delivering the opportunity requires a fundamentally different approach: 'start small, fail fast, scale fast'.

'Step change' opportunities act as accelerators to super-charge existing CI efforts



Source: KPMG





# Implications for E&P executives

Leadership teams need to challenge the breadth and depth of existing efforts.

Looking at the five sources of long-term value explored in this paper, executives should be asking a number of questions:



## Zero-based asset costs

- For each of your assets, are activities, service levels and resourcing truly optimized?
- What would change if you introduced zero-based spending and only added back activities and costs that genuinely add value?



## Value-based prioritization

- Have you gone as far as you should in ensuring that all scoping decisions for projects and activities are fully commercial?
- What confidence do you have that all technical work-scopes have a benefit-cost ratio greater than 1?



## Using machines to make decisions

- Who makes your highest-value operational decisions and how do you know they are right?
- Which of these decisions would most benefit from being made by a machine, where possible?



## Agile supply chains

- Are your supplier costs likely to come under renewed pressure as capacity tightens and demand grows?
- What would you and your suppliers need to change if you really want to break the 'zero-sum' approaches of the past?



## Intelligent process automation

- Are your back office staff still delivering simple transactional activities?
- Do you understand the magnitude of potential savings and efficiency gains from automating – rather than outsourcing – transactional activities?

**Delivering the prize:** What are the top five opportunities in your business to improve unit cost? And how will you 'cash the check'? How will you bring in fresh ideas to challenge your staff and maximize value?



# Mohammadmahdi Mozaffar

Advisor to CEO

Pasargad Energy Development Co.



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## Author Biography

Born in 1982. I have a demonstrated history of working in the energy industry. I started my professional life as an electrical engineer from Sharif University of Technology in power systems and gradually shifting to mid management level and then senior level in energy industry. In this regard I graduated in general management MBA from Sharif University of Technology. After that I found I am interested in brand management. So I decided to take an MBA in brand management from the Iran Brand academy. During these years I have faced very serious challenges and questions in operation. So I really needed to find my answers in DBA course from SBU. I was honored to receive a degree in Ph.D. in Strategic Management from EIU. I think I am in the right track about energy diplomacy. I feel confident in strategic and scenario planning in the energy industry. I have my personal model in management and decision making. This model is a combination of theories and active experiences.

