Supply chain transformation in energy

Whilst oil and gas consumption is forecasted to grow globally by 25% between 2015 and 2035, the growth rate is slowing significantly, with a further drag from decreasing energy intensity. The US’s production capacity continues to be brought on stream at constantly falling unit costs, while new renewable energy capacity is being added at pace, with spectacular improvements in cost efficiency. At the same time, greenfield capital expenditure (Capex) has reduced dramatically. As a result, many E&P capex portfolios have shifted emphasis from high-risk, high-cost mega-projects towards a longer tail of smaller, incremental development opportunities, driving complexity into many business units.

In order to offset declining returns, upstream exploration and production (E&P), midstream, and downstream companies need to drive efficiencies with several transformations throughout their supply chain, including in digital technologies.

Upstream
KPMG’s Delivering long-term value in E&P publication suggests that there are five potential transformations to generate longer-term value for E&P process in upstream operations:

- **Intelligent process automation**
- **Zero-based asset costs**
- **Value-based prioritization**
- **Agile supply chains**
- **Using machines to make decisions**

Zero-based asset costs
Reduce operating cost by 25% across the portfolio by tailoring processes, standards and service levels to the needs of different operations.

Value-based prioritization
Only perform work that adds value, and constantly assess cost versus benefits – including the value of risk mitigated.

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

Agile supply chains
Reduce third-party cost by more than 10% by thinking like a manufacturing business, with targeted integration and collaboration throughout 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

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Midstream
Energy companies can also improve transportation and storage processes in midstream with these digital technologies:

- **Robotics**
  - are now used to optimize warehouse flows and processes through automated warehouse and dark stores to reduce labor and energy, and improve asset utilization.

- **Driverless vehicles, drones and on-board technologies**
  - such as GPS and track and trace devices are optimizing transport routes to reduce congestion and enabling major efficiencies for the economics of last-mile delivery.

- **Cloud-based centralized platforms**
  - can be used for tracking and managing materials, with data collected at a central hub. One central IT system is required to have visibility of all shipments, inventory and utilization.

- **Smart labels, QR codes and blockchain technologies**
  - enable consumers to scan products and harness specific information to better understand product provenance and supply chain performance.

“Energy companies within the digital era need to adapt to the changing landscape in order to improve their growth, profitability and efficiency. This new evolution of the supply chain is more connected and intelligent and, as a result, putting pressure on companies to be agile, flexible and adaptable. The call-to-action is urgent. It is pushing all industry players to head into unfamiliar territories, challenge conventional perceptions and bring in new technologies to drive transformation.”

Natthaphong Tantichattanon
Partner, Audit
KPMG in Thailand

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Energy companies are much more pessimistic about their IT budgets for 2018 than those in other industries, with fewer expecting a budget increase (39% vs. 46% for all industries), and more expecting a decrease (32% vs. 18%).

Energy companies are much more likely to work more with trusted suppliers and partners (49% vs. 39% for all industries), and much less likely to create a more nimble technology platform (41% vs. 52%).

“The energy sector is well positioned to shift focus from operational efficiency and cost savings to embracing the challenges and opportunities of the digital revolution. Although digital technology requires companies to adjust their business models and organizational structures, it provides a lot of opportunities for companies to improve their supply chain, reduce costs, improve logistics and storage, and understand their customers. This can help companies in the energy sector to overcome the challenges in the current market environment.”

Key issues and solutions for digital technology transformation:
Among several supply chain transformations, energy companies are less likely to have a digital strategy due to greater challenges when overcoming resistance to change. Harvey Nash/KPMG CIO Survey 2017 indicates key issues and solutions to overcome challenges from digital technology.

Looking forward, over the next 12 months, do you expect your IT budget to:

What are the key business issues that your management Board is looking for IT to address? (top 5)

- Increasing operational efficiencies
- Saving costs
- Improving business processes
- Delivering consistent and stable IT performance
- Enabling business change

- 75%
- 62%
- 67%
- 54%
- 53%

How have you adapted your technology plans to deal with uncertainty? (top 5)

- Investing more in cyber security
- Finding a way to work with restricted budgets
- Working more with trusted suppliers and partners
- Creating a more nimble technology platform
- Reducing the amount of longer-term planning

- 51%
- 45%
- 51%
- 49%
- 23%

Source: KPMG Publication – Harvey Nash/ KPMG CIO Survey 2017 (Energy Sector Findings)

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Delivering long-term value in E&P
Structural economic pressures have transformed upstream into a margin business. The urgent search for further sources of long-term value is revealing a number of exciting opportunities with the potential to reduce unit costs by a further 30%. This is not about another transformation program – those leadership teams that move fastest are likely to gain competitive advantage.

Digital Supply Chain – the hype and the risks
Customers of today continually demand more choice of products, greater flexibility in delivery options and faster service. These expectations, combined with rapidly changing business models and channels to market, are putting previously unseen pressure on supply chains to be agile, flexible and adaptable to customer demand signals.

Fueling the Future
The increasing of electric vehicles will ultimately have a profound impact on oil refining, retail fuel, and lubricants demand. Oil and gas companies know this. And yet, it’s common to underestimate how the confluence of multiple forces outside the oil and gas industry will increase the velocity and impact of the switch to the electric from the internal combustion engine.

Harvey Nash/KPMG CIO Survey 2017 (Energy Sector Findings)
This energy sector snapshot provides survey responses from more than 100 energy companies on some of the key topics, and highlights several areas where this sector’s responses differed significantly from those from across all industries.

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