

Rejuvenating late-life
operations in the
energy industry:
New life, new profits

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For energy companies, as upstream assets age and edge closer to the end of their productive life, reliability decreases and costs increase. The problem is pervasive. Today, more than half of offshore platforms are beyond their original design life. Given the current crude oil price environment, the economics of this operational situation are not sustainable. What can be done?

Time to ctrl-alt-del your operating philosophy

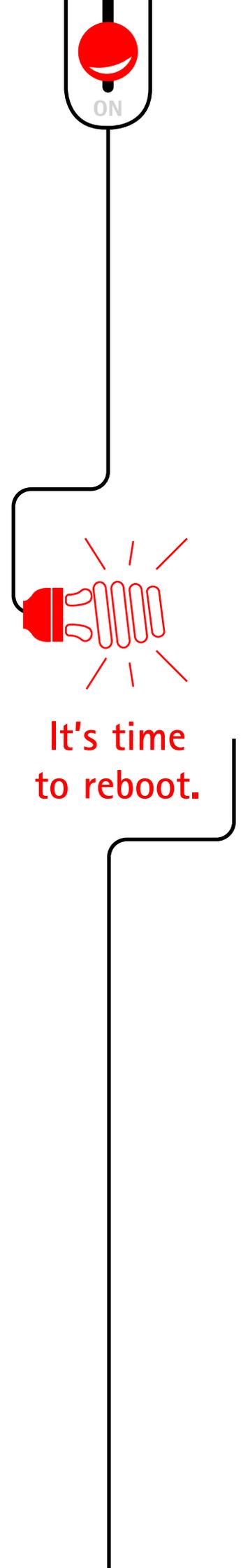
Despite knowing that production naturally declines over an asset's life, too few energy companies adapt their operations and maintenance (O&M) philosophies to lower their costs in line with a decrease in volume. It's time to reboot.

Companies need to evaluate O&M requirements against actual operating conditions across the categories of equipment, maintenance and people (see Figure 1). This reevaluation can increase the potential for equipment rationalization and optimized maintenance frequencies, dramatically reducing the need for manpower and services.

Figure 1: Key actions operators should take to reboot their operating philosophy

Equipment	Maintenance	People
<ul style="list-style-type: none"> • Reevaluate process equipment for the operating envelope based on changes in fluid properties (oil, sand, water, etc.) • Re-rate equipment for current operating conditions • Set strategies to manage redundant equipment • Consider developing partnerships with neighboring operators to share resources (e.g., spares, living quarters) 	<ul style="list-style-type: none"> • Maximize risk-based approach to optimize maintenance and inspection activities • Lower OPEX by reducing complexity of facilities • Reexamine maintenance work window for late-life facilities 	<ul style="list-style-type: none"> • Reexamine platform strategy, converting manned platforms into unmanned facilities • Optimize crew change philosophy • Rethink mode of transportation, leveraging advances in vessel technology

Source: Accenture Strategy analysis



Accenture Strategy research in the Asia-Pacific basin shows that operators who apply a lean, fit-for-purpose operating philosophy have 35 percent to 40 percent lower costs than other operators in adjacent fields with similar conditions and similar asset maturity.¹ For example, operators resetting their maintenance requirements by re-rating pipelines for lower-pressure operating conditions were able to reduce their fields' OPEX by 30 percent per year on average.²

Additionally, some operators have removed or isolated redundant equipment, resulting in vastly reduced complexity of platforms and related maintenance requirements. In this way, they have been able to move to an operating model based on unmanned platforms. This in turn has reduced the associated costs related to people and logistics.

Stop flying blind in your production operations

For upstream operations, companies should focus on leveraging digital technologies to improve campaign readiness, rethink conventional inspection approaches and create visibility into logistics assets. These actions can help operators sense and react faster, reduce offshore activity and optimize asset utilization.

Improving campaign readiness. In upstream operations, overhauls and campaigns often do not achieve their planned completion targets. On average, upstream operators go 20 percent over budget to maintain assets.³ This is typically due to:

- Additional costs executing work overspill from previous campaigns
- Missing materials
- Waiting for work sequence
- Lack of effective logistics support

Together, these factors contribute to 35 percent of the issues that result in non-completion of offshore maintenance activities.⁴ As a result, companies experience significant backlogs in their asset maintenance, and production is negatively affected.

Operators who apply a lean, fit-for-purpose operating philosophy have

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— to —
40%

lower costs than other operators

Cost reduction among upstream operators in Asia-Pacific

To cope with falling oil prices, an Asia-Pacific oil and gas regulator embarked on an upstream industry-wide cost optimization program. The program involves cross-organization teams across all upstream oil and gas companies operating in the country, driving targeted initiatives to structurally reduce the cost for the industry.

Under the program, initiatives are focused on three value levers:



Proactive demand management



Spend consolidation



Driving innovation

One initiative focuses on late-life field optimization, which aims to improve operations and maintenance of late-life facilities, structurally reducing OPEX for these assets. Offshore oil and gas activity in the region began in the 1950s, so many platforms across the country are currently considered late-life and are economically challenged.

The late-life field optimization initiative focuses specifically on driving collaboration and capturing leading practices in late-life asset optimization across operators and replicating these practices across targeted assets. These initiatives have achieved more than 45 percent reduction in OPEX for the fields addressed.

Initial results from a select number of operators are promising and the program is now looking at ways of expanding to all relevant operators.

These overages can be prevented by assessing readiness before the start of execution. Effective campaign readiness monitoring can help upstream operators improve work completion to more than 95 percent.⁵

Digital technologies can help here. If companies can leverage data more effectively, they can integrate the schedule of materials and manpower during maintenance turnarounds. By tracking the schedule and swiftly intervening when deviations occur, companies can significantly improve campaign readiness.

Rethinking conventional inspection approaches. Digital technologies can also help improve production operations. For example, consider the inspection of flare tips. The typical approach has been to shut down production (resulting in lost volume) and to bring specialist labor from offshore (incurring logistics charges).

Today, digital offers new opportunities. One East Asian company, for example, is using unmanned drones and remotely operated underwater vehicles to perform inspections in real time. Through video analytics, information is relayed to experts who then analyze the images.

All in all, digital is an important way to run operations more smoothly.

Creating visibility into logistics assets. Leading oil and gas companies are creating logistics control towers, achieving better visibility across their entire supply chain, from supply bases to offshore platforms and floaters. Digital track-and-trace capabilities, as well as real-time analytics, significantly improve end-to-end supply chain execution.

For example, Accenture Strategy worked with one operator to create a control tower that consolidated all logistics requests from offshore assets, allocated resources and tracked performance. Within six months, emergency requests dropped from 50 percent to 10 percent. Through better visibility, the control tower also was able to streamline vessel routes, lowering total distance covered by 20 percent and reducing the size of the marine fleet.⁶

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Spin off late-life assets into a low-cost business

Don't let smaller independents with leaner cost structures beat you at generating value from late-life assets. Accenture Strategy research into the Gulf of Mexico, UK North Sea and the Netherlands reveals that smaller independent operators are able to decrease projected unit production costs by up to 50 percent after taking over the field from larger oil companies.⁷

To compete effectively, some leading organizations have created parallel lean businesses focused on lower-volume assets. In this way, companies that have built operating models for large production volumes can still remain competitive and drive full value from an aging hydrocarbon asset base.

A spin-off strategy is not about dumping assets that are not delivering high returns. Rather it is about being agile enough to reset the operating philosophy of late-life assets so they once again deliver higher returns. Although this kind of reboot can be difficult for large organizations that are more conservative and are geared toward mainstream operations, the benefits are worth pursuing.

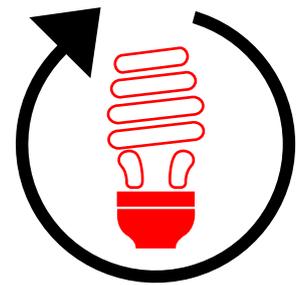
Making radical changes

As the economics of late-life assets declines, operators need to consider radical changes in the way they manage assets. Here are three actions to consider.

1. Challenge your assumptions

First, "rebooting" your operating philosophy means challenging your assumptions about the effectiveness and timeliness of your operating model.

For example, consider zero-basing your OPEX—not just making improvements, but re-creating them starting from zero given your current operating environment. As discussed earlier, reset your maintenance requirements by re-rating pipelines for the lower-pressure operating conditions of a late-life asset. Also review the frequency of well tests to determine when tests are absolutely essential, instead of using testing criteria for a younger asset. Remove equipment that is no longer necessary to a different operating environment.



It is about being agile enough to reset the operating philosophy of late-life assets

2. Leverage data more effectively

Second, the way to stop “flying blind” is to leverage data to improve planning and drive better operations. One goal here is to achieve end-to-end, integrated activity planning, focusing on campaign readiness.

New tools and dashboards can help monitor campaign readiness. These tools provide a holistic view of campaign readiness and execution performance at the asset and platform level. Tools can monitor readiness of materials, manpower, logistics, procedures and cost performance by respective campaigns. A list of “work orders at risk” allows management to focus on key activities requiring interventions.

Companies can also optimize asset utilization through control towers that cover marine and aviation, achieving visibility across the demands of different operators. A successful inbound logistics control tower can help increase vessel and helicopter utilization, reduce fuel consumption and support faster reactions to the inherent operational volatility caused by capital projects and drilling campaigns.

3. Take advantage of the circular economy

Finally, adopt circular economy models to generate value from redundant equipment. In the North Sea and Gulf of Mexico, refurbishment and reuse of components has become common practice as a way to monetize redundant equipment and to decrease costs to purchase spares—especially spares of materials no longer being produced. In the North Sea and Gulf of Mexico, specialist service providers can refurbish and recertify equipment, mitigating some of the risks associated with used equipment. In some cases, transporting entire platforms across regions has proven to be a cost-effective method of extracting value from marginal fields.

The use of online marketplaces such as Tradequip also expands the potential customer bases within the industry—globally, as well as across industries such as mining and construction.

Companies must change the way they operate their late-life assets, leveraging digital and focusing on competitiveness—without compromising safety or integrity of the facilities. In this way, they can achieve reductions of up to 40 percent in dollars per Barrel of Oil Equivalent (BOE) without significant capital investments.⁸

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Notes

- ¹ Accenture Strategy research
- ² ibid
- ³ ibid
- ⁴ ibid
- ⁵ Accenture Strategy analysis
- ⁶ <https://www.accenture.com/Accenture-8-Strategy-Energy-Perspectives-Five-Essentials-For-Improving-Operating.pdf>
- ⁷ Accenture Strategy research
- ⁸ ibid

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