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FROM CUTTING COSTS TO BUILDING RESILIENCE IN UPSTREAM OIL AND GAS

By Henning Streubel and Abhi Ravishankar

THERE'S NO QUESTION THAT upstream oil and gas companies have made themselves lean over the past few years. Producers have cut costs aggressively, lowering overall operating expenses by \$2 to \$3 per barrel, trimming global head count by 20% to 30%, and curtailing capital expenditures by about 60% from 2014's peak levels. These efforts have helped spare companies from the worst of the current low-price environment.

But lean does not necessarily mean strong. Most companies have not fundamentally changed the way they work. They cling to outdated, overly complex processes and counterproductive behaviors. And a good number appear to be losing their cost-cutting zeal; expenses are starting to creep back in. Many maintain hope for a material recovery in oil prices in the near term, an iffy bet given continuing consumption efficiency gains and the decreased costs of supply. All of which bodes ill for companies over the medium to longer term, especially in the face of a potential global peak in oil demand between 2025 and 2030—sooner

than many forecasters expect. (See “The Multiple Paths to Peak Oil Demand,” BCG article, July 2017.)

Upstream companies that want to thrive in an uncertain price environment—one in which “lower for longer” could become “lower forever”—need to do more than control costs. Our experience working with integrated, independent, and national upstream companies indicates that the next phase of transformation can deliver an incremental \$2 to \$6 per barrel in savings but will demand a multipronged approach, one that spans the business portfolio, operations, organizational effectiveness and efficiency, and culture—and in many cases also incorporates digital and big data technologies. Producers that don't want to bet their survival on the hope of higher oil prices should start now.

Weathering the Immediate Challenge...

It has been almost three years since the price of Brent crude oil fell through the

\$50-per-barrel floor. Since then, the much-discussed lower-for-longer oil-price paradigm has played out as some predicted: after falling to as low as \$27 per barrel in January 2016, oil prices have bounced back, but they have generally remained in the \$45 to \$55 range—roughly half their peak in 2014. These price levels have exacted a heavy toll on upstream oil and gas companies of all shapes and sizes. Many companies claim that their cost structures have improved to the point where they can be profitable at \$50 per barrel. This could well be true—but is this level of “fitness” truly sustainable?

Answering this question requires understanding the nature of the industry’s cost cuts. Most companies executed a textbook series of cost reduction measures. First, they reduced discretionary operational expenses and forced suppliers to lower their costs. Second, they reduced head count, especially in support functions, to match new (lower) activity levels; they also froze salaries and hiring. Third, they delayed, shelved, or dialed back major investments and capital projects. All of these actions yielded substantial savings. BP, for example, reduced cash costs by roughly a third (about \$7 billion annually) between 2014 and 2016, primarily through divestitures, lower capital expenditures, and reductions in head count and supply chain costs.

Across the industry, companies have been aggressive and relentless, and the results show it. Capex budgets for the top 30 largest exploration and production companies in 2016 were about 60% lower than 2014’s peak levels (although 2017 budgets show increases of 7% to 9%, according to a March 2017 Barclays survey). Job cuts, executed in waves over the last three years, have been substantial, with Graves & Co. reporting that an estimated 440,000 positions were eliminated globally across all industry segments.

...But Has the Industry Really Changed?

Companies’ cost-cutting efforts have boosted short-term financial performance. But

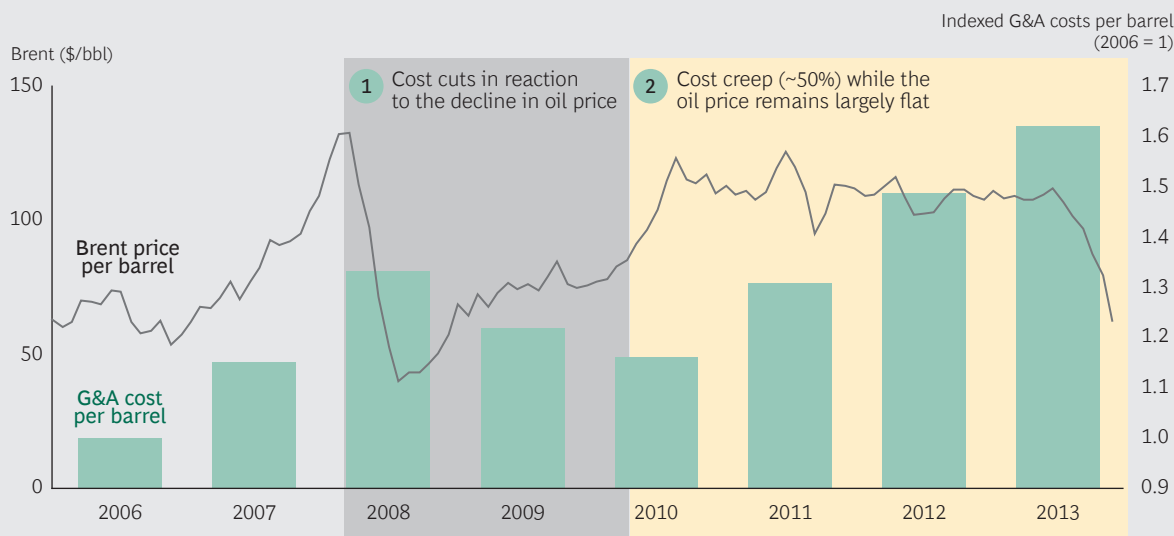
cost-cutting measures alone typically do not fundamentally alter the companies that undertake them.

Three telltale signs in an upstream operation point to the absence of fundamental change.

The first sign is the reemergence of cost increases within a few years of the cuts. Upstream companies are veterans of navigating the falling-price stage of boom-and-bust cycles, but they have proven themselves ineffective at keeping costs in check once oil prices flatten or start to rise. For example, following a series of cost cuts between 2008 and 2010, one producer saw its general and administrative expenses climb by 50% over four years—while oil prices remained mostly flat. (See Exhibit 1.) This kind of cost creep undermines competitiveness because upstream players cannot count on rising oil prices in the future.

The second sign is no change in behavior, especially in the pace of decision making and innovation. Upstream players rely heavily on head count reduction to cut costs—but reducing staff should not be mistaken for changing a company’s operating model or ways of working. Most head count reduction programs are characterized by three attributes: they are activity related (that is, they are connected to the cancellation of projects or reductions in activities, such as drilling); they are disproportionately focused on support functions, at both headquarters and business units; and they ultimately maintain the status quo in ways of working, with fewer people doing the same tasks. In our experience, fewer than a quarter of reorganizations fundamentally change the company’s operating model. This can have several longer-term implications, such as hurried recruiting when activity picks up again, a compromised ability to attract and retain top talent in support functions, and reduced ability to innovate and be agile. (Agility has never been a strong suit for most traditional upstream players. Examples of agility are more likely to be found in relatively new entrants in such areas as shale oil and gas.)

EXHIBIT 1 | After Cutting Costs, One Upstream Operator's G&A Costs Rose 50% as Prices Plateaued



Sources: US Energy Information Association; BCG project experience and analysis.

The third revealing sign is that complex processes are little changed. If you ask a production operations or offshore installation manager to name his or her company's most complex process and to identify the causes of that complexity, the answer you get today would most likely be identical to the answer you would have received a decade ago (although today's complexity level would probably be higher). The upstream industry has been slow to deploy new, potentially game-changing technologies, including digital advances and mobile applications. Many other industries have used such technologies to reshape business, and in some cases technical, processes, but the upstream industry has been a laggard in this regard. There are several reasons; two big ones are a subdued investment environment and a higher degree of risk aversion triggered by the Macondo incident. Hopes for a return to higher oil prices have also played a role.

All told, while upstream companies have done what they have needed to do to survive, most are fundamentally unchanged. This leaves them ill suited to thrive in the uncertain oil price environment that stands to prevail over the next several years and possibly beyond. What they need to do now is reorient themselves from near-term

cost cutting to the ability to produce longer-term, sustainable results.

An Integrated Approach to Transformation

Upstream companies need an integrated approach to transformation. This approach should focus on four areas:

- Portfolio optimization—aligning goals, assets, and expectations for the market
- Operational improvement—simplifying and optimizing processes
- Organizational effectiveness and efficiency improvement—becoming a more flexible, adaptive, agile organization
- Behavioral and cultural change—making the changes stick

A key enabler underpins all four: a performance management program that sustains the changes made and helps deliver continuing competitive levels of performance going forward. (See Exhibit 2.)

Portfolio Optimization. At a time of deteriorating industry fundamentals, upstream operators need to set aside inherent biases,

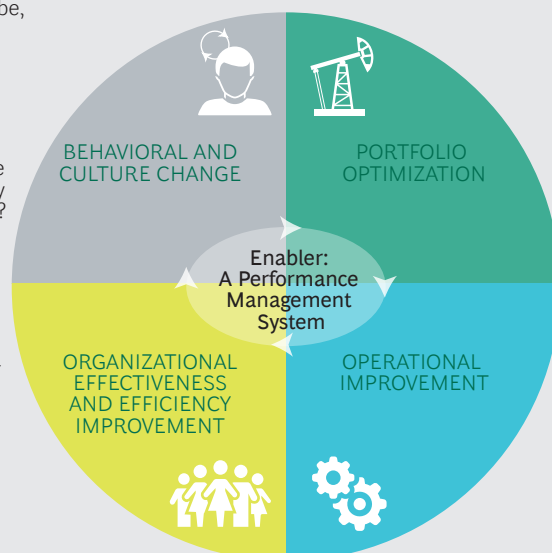
EXHIBIT 2 | An Integrated Approach Delivers Sustainable Transformative Results

Making change stick

- What should our target culture be, given our business strategy and stated goals?
- What changes can we make to our environment to drive a different set of behaviors?
- What changes can we make to our operating model to increase commitment and accountability on all levels of the organization?

Transforming into an agile organization

- What is the ideal organizational setup for the adjusted portfolio and operations?
- How can we improve the efficacy and speed of our decision-making processes?
- How can we keep the organization focused on our core assets?



Getting the portfolio right

- What is our long-term goal and vision? Where do we have a real competitive advantage?
- What are the deaveraged full-cycle economics of our assets?
- How can we ensure that our assets are resilient to changes, including changes in the market, politics, and demand?

Simplifying and fortifying processes

- How can we increase the performance of our core processes through simplification?
- What tools, including digital technologies, can we leverage?
- How can we partner with suppliers to drive progress?

Source: BCG experience.

undertake an objective strategic review of their assets, identify those that can perform in all the scenarios that could play out in the next 10 to 20 years (ranging from “price bump” to “lower for longer” to “lower forever”). Royal Dutch Shell, for example, has long conducted advanced scenario analysis and focused on what-if questions to help make better portfolio decisions. Such planning has shaped its portfolio around low-carbon natural gas, low-carbon biofuels, and a new-energies business targeted at finding opportunities in alternative energy sources. Upstream companies need to rethink the option cost of holding onto noncore assets with high development costs, especially in a world in which prolonged periods of high oil prices are increasingly less probable.

Operational Improvement. Upstream companies have traditionally possessed technological prowess, but many have been slow to adopt digital technologies. We estimate that advanced technologies, such as big data analytics, deep connectivity, augmented reality, advanced robotics, and artificial intelligence, can unlock up to five times more value if they are used to redesign and optimize processes. For example, the subsea maintenance group of

a large oil and gas company reduced maintenance work orders by 25% and man-hours by 20% using a big data analytics solution on top of its work order database. Applying data and analytics to further optimize the maintenance mix delivered up to 30% in maintenance cost savings in several categories. More advanced implementations, such as machine-learning-based solutions, have the potential to reduce production losses by as much as 50%, translating into a big impact on operators’ bottom lines. (See “How Digital Will Transform the Upstream Oil Ecosystem,” BCG article, August 2017.)

Organizational Effectiveness and Efficiency Improvement. In an environment of considerable uncertainty and shifting fundamentals, agility is critical. The organizational complexity that characterizes many upstream companies can weigh heavily on their ability to navigate an uncertain environment. (See “Killing the Complexity Monster in E&P,” BCG article, January 2015.) What these companies need is an organizational model that promotes agility—one that has a solid core but allows the business to dynamically adapt and flex to changes in the external environment. Norway’s Statoil has such a model in its

approach to investment funding. Budgeting teams work with the mindset of “keeping the bank open” throughout the year. They follow a dynamic forecasting approach that guides funding decisions, and they make decisions year-round rather than only at the beginning of the fiscal year. This flexibility has helped the company respond much more dynamically than many of its competitors to big and continuing shifts in oil prices.

Behavioral and Cultural Change. Companies need to change behaviors if larger changes are to stick. Behaviors are driven by people’s rational reactions to their environment, which includes organizational structures and processes, reward systems, roles, career paths, and the like. Making transformational changes endure demands both changing the organizational environment and having a good understanding of the behaviors that the changes are likely to trigger.

We have worked with a number of upstream companies to implement agile behaviors and methodologies as part of their transformation programs. The key levers are usually threefold:

- Building cross-functional “scrum” teams, each with a single accountable owner, that operate over multiple projects
- Empowering the cross-functional teams to make day-to-day decisions while leadership focuses on setting vision and goals
- Executing pilots to deliver slices of impact and adjusting course on the fly rather than perfecting a particular deliverable over a longer period of time

Such new ways of working can change how companies function even in high-risk industries such as upstream oil and gas.

A Performance Management Program. While the changes described above will deliver a solid foundation for defining a company’s performance aspiration and the ways of working needed to achieve it, the real challenge comes when “the rubber

meets the road” and leadership needs to rally and empower teams to actually elevate performance and achieve the aspiration—on a continuing basis. Many upstream executives attempt to drive a long list of improvements, but they seldom tie them to enterprise objectives. Furthermore, many of these improvements end up not having a clear, measurable impact on the bottom line. Integrated digital performance management systems can help upstream companies with simple executive dashboards that overcome these challenges by focusing on and tracking the real benefits of needle-moving ideas.

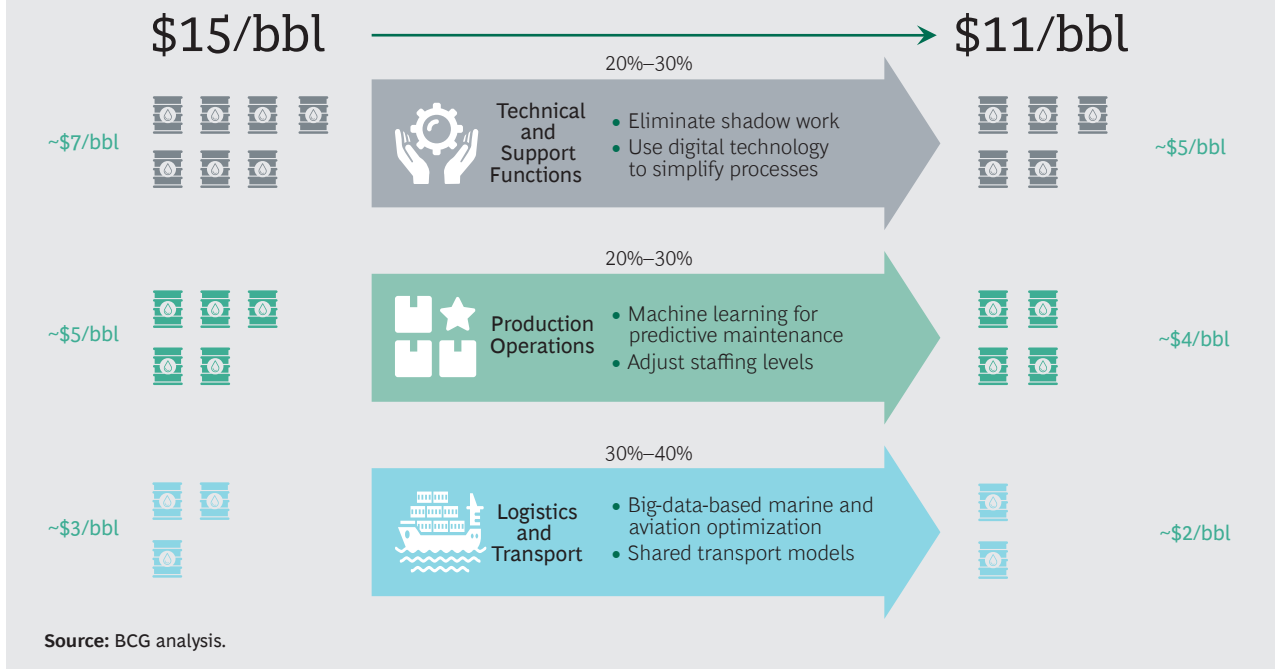
The Power of an Integrated, Modular Approach

The true power of this approach to transformation lies in its integrated nature. Progress in each area can yield potent gains to business performance; getting all four right can deliver true transformation. Performance improvement initiatives will be clearly tied to the company’s priorities and core assets, for example. The company will be able to comprehensively track and monitor progress—directly linking financial outcomes to reductions in cycle times that result from operational improvements and digital technologies. The organization will encounter fewer disruptions and will be able to achieve more integrated outcomes, such as retaining the organizational capabilities it needs for a revised portfolio.

While the approach is integrated, it is also modular—companies can apply the necessary changes in each area individually depending on their particular starting point. Narrowing scope and choosing options within each element can drive faster results. For instance, rapid prototyping and scaling of digital technologies in targeted areas of the value chain (for example, supply chain and maintenance operations) can yield quicker results than a blanket approach that tries to drive a digital transformation across the full value chain.

These benefits will show up in the bottom line. In our experience, an effective transformation can deliver cost reductions from

EXHIBIT 3 | An Integrated Transformation Achieved a \$4-per-Barrel Reduction in Operating Costs



\$2 to as much as \$6 per barrel of oil equivalent—on top of the savings that many companies have already achieved. (See Exhibit 3.)

they are ready for it. An integrated approach to transformation stands to leave companies more efficient, more resilient, and better positioned to realize opportunities to create shareholder value.

FOLLOWING THREE YEARS of relentless cost cutting, upstream players need to think about what comes next and whether

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