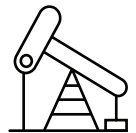


# Petroleum

## Incumbents Strike Back

Global C-suite Study  
19th edition

IBM Institute for  
Business Value



The IBM Institute for Business Value, in cooperation with Oxford Economics, interviewed 284 CxOs from the Petroleum industry. These conversations included both quantitative and qualitative responses. The analytical basis for this Petroleum industry report uses 243 valid responses from the total data sample collected.

More than 12,800 CxOs, representing six C-suite roles, 20 industries and 112 countries, contributed to our latest research. We used the IBM Watson Natural Language Classifier to analyze their contextual responses and ascertain overarching themes. We also used various statistical methods, including cluster analysis and discriminant analysis, to scrutinize the millions of data points we collected.

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## Which way to the future?

The signals are utterly bewildering. As digital technologies transform the world, monopolies are winning big-time. Yet collaborative systems are also flourishing, and even in industries where the competition is shrinking there's still plenty of creativity. Little wonder top executives are puzzled.

Petroleum CxOs are no exception. They're divided as to whether the focus will be on new or established markets in the next few years. Similarly, although 32 percent assume that open innovation will predominate, 43 percent take the view that proprietary research will prevail. But there are two points on which Petroleum CxOs broadly agree: 56 percent envisage that most organizations will partner more widely over the next few years. And 50 percent anticipate more emphasis on customer experiences than products.

Petroleum CxOs also say the external landscape remains very challenging. They expect environmental and regulatory concerns to have a particularly significant influence on their enterprises in the near future. In fact, environmental pressures account for two of the three main industry trends they foresee: greater use of renewable energy technologies and greater use of biofuels. The third – fluctuating oil prices – is a perennial problem. However, market forces and people skills loom large on Petroleum CxOs' horizons, too. They're not alone in fretting about talent; it has soared up the agenda for executives in almost every sector, as our study shows.

## Reinventors race ahead

In the course of our research, we identified three distinct organizational “archetypes,” each at a different stage on the road to Digital Reinvention™ (see Figure 1).

Reinventors focus on developing breakthrough products, services and business models; excel at extracting value from their ecosystems; and actively experiment. Their IT strategies are aligned with their commercial goals, and they’re superb at managing change – all of which helps them stand out both financially and as innovators.

Practitioners are ambitious but haven’t yet acquired the capabilities required to realize their ambitions. They’re neither as focused nor as agile as Reinventors.

Aspirationals have even further to go. They still need to devise a clear strategy, put the right processes and resources in place, and develop the agility to seize new opportunities.

## Reading the road signs

So what’s actually going on? Four topics stand out from our conversations with CxOs and our work with academics:

Dancing with disruption

The path to personalization

The pull of platforms

Innovation in motion.

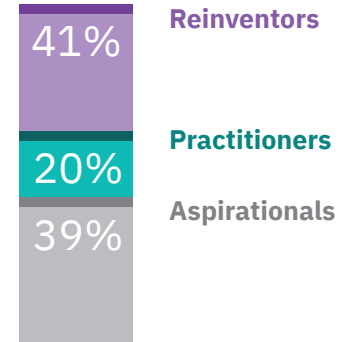
“The petroleum industry faces major challenges with intense competition, an abundance of resources and high levels of uncertainty.”

Chief Operations Officer, Petroleum, Russia

Figure 1

## Petroleum split

Petroleum Reinventors have distinct characteristics that result in differing vantage points



## Dancing with disruption

Two years ago, CxOs were deeply worried about digital giants and ankle-biters from other sectors invading their territory. Now, they're far more relaxed. Only 19 percent of Petroleum CxOs claim their sector is experiencing huge upheavals, and only 17 percent say their enterprise urgently needs to change in response. Moreover, it's not outsiders they're most concerned about: 79 percent of Petroleum CxOs report that the *real* disruption is coming from innovative industry incumbents – enterprises that have reinvented themselves to thrive in the digital age.

The Reinventors in our petroleum sample are already planning how best to fend off these reinvigorated rivals: 22 percent intend to launch new business models within their own industry, while 31 percent intend to expand upstream or downstream. And they're well placed to realize their goals. Most Reinventors have clearly defined formal strategies for countering disruptive threats (see Figure 2). Additionally, 64 percent have business processes that are optimized to support their strategies (versus just 51 percent of Practitioners and 53 percent of Aspirationals).

Petroleum Reinventors are also investing more heavily in new technologies than their industry counterparts. CxOs in these companies are focusing primarily on foundational technologies like mobility, the Internet of Things (IoT) and cloud computing, but some of them are turning to emerging technologies as well: 48 percent plan to invest in artificial intelligence (AI), including cognitive solutions, and 42 percent in robotic process automation.

## The path to personalization

Connecting with the customer on a personal level is vital these days, but creating compelling personalized experiences is extremely difficult; it takes a profound understanding of what makes different people tick. Again, Petroleum Reinventors are ahead of the curve. They approach problems like design thinkers – by empathizing and engaging directly with customers, consulting their partners to get a clearer picture of the customer experience and analyzing detailed journey maps.

Several leading petroleum companies are currently pioneering noteworthy initiatives to provide more personalized experiences. Consider, for instance, BP's new app, BPme, which lets customers pay for fuel at the pump. Customers can also use the app to locate the nearest BP gas station, view their transaction history and offset their carbon emissions via BP's Target Neutral program.<sup>1</sup>

“We're generating new business opportunities by providing our customers with energy from renewable sources and low-cost, carbon-related solutions.”

Chief Operations Officer, Petroleum, Norway

## The pull of platforms

One of the most exciting recent trends is the emergence of the platform business model, which connects producers directly with consumers, enabling organizations to grow faster and generate higher profits. A number of petroleum companies use digital platforms to improve their operational efficiency. Equipment giant Schlumberger is a case in point with its DELFI cognitive environment, which enables exploration and production teams to collaborate.<sup>2</sup> However, very few oil and gas firms operate platform businesses in the true sense of the term – where the orchestrator controls the means of connection, not the supply chain.

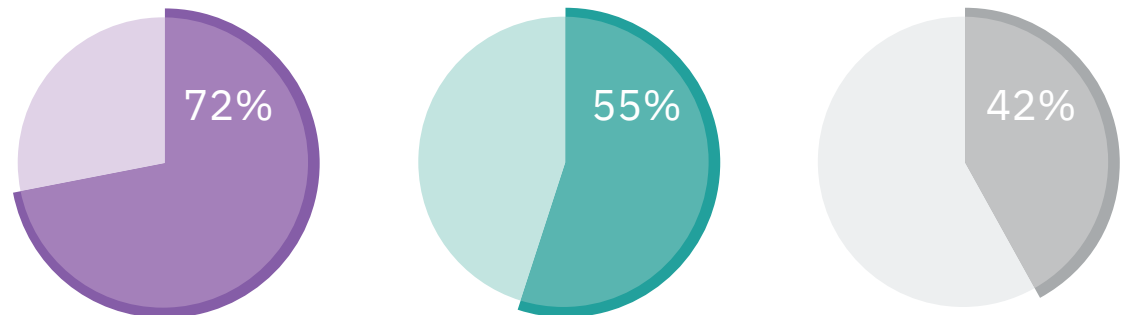
That may change, though: 26 percent of Petroleum CxOs already operate platforms or are currently experimenting with the platform concept, while 12 percent plan to reallocate capital for this purpose. So what makes a platform work? We identified three “rules” for success: creating value from reciprocity, capitalizing on data and committing to innovation. Petroleum Reinventors perform some of these activities especially well. They’re more open than their industry counterparts to the idea of collaborating selectively with competitors (61 percent versus 47 percent of other petroleum firms). They’re also more willing to pool resources – both expertise and physical assets – with the other members of their ecosystems.

Figure 2

### Strategic advantage

Petroleum Reinventors are adjusting their strategies to deal with disruption

**Reinventors**  
**Practitioners**  
**Aspirationals**



*Q: To what extent does your enterprise have a well-defined, formal business strategy to respond to disruption? (Percentage of respondents choosing “to some extent” or “to a large extent.”)*

## Innovation in motion

The organization of work is altering dramatically as companies collaborate to innovate and ecosystems replace go-it-alone entities. Petroleum Reinventors are in a better position than most to adapt: 68 percent have C-suites with a strong grasp of how the sector is evolving (versus 59 percent of the remaining petroleum firms in our sample). The CxOs who head these operations are also planning much more proactively to deal with key industry trends, such as volatile oil prices, rising consumer activism and the increasing influence of environmental issues. And they're more adept at communicating a clear corporate strategy to their people.

There's more. Many Petroleum Reinventors are creating nimble teams that learn on the fly: 63 percent actively solicit input from employees, compared with just 47 percent of other petroleum firms.

“So that we can build better rigs, we want to create a digital platform that incorporates predictive maintenance; information on health, safety and the environment; robotics; and up-skilling.”

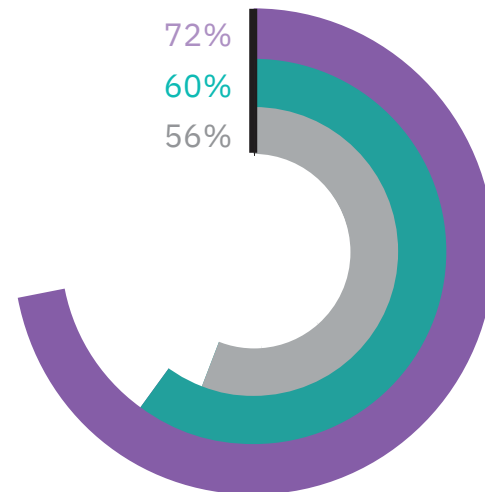
Chief Information Officer, Petroleum, United Kingdom

Figure 3

**Reinventors**  
**Practitioners**  
**Aspirational**

## Quick on the uptake

Petroleum Reinventors encourage a culture of agile innovation



Q: To what extent does your enterprise reward both fast failure and successful innovation? (Percentage of respondents choosing “to some extent” or “to a large extent.”)

Similarly, 65 percent empower their teams to decide on the best course of action (versus 49 percent of the remaining firms). Lastly, Petroleum Reinventors foster flexibility and inventiveness by rewarding fast failure as well as successful innovation (see Figure 3). In short, they combine a dynamic vision with an open culture and agile operations – and these, as our research shows, are the three stepping stones to organizational dexterity.

## Strengthening advantage: Actions to take now

*Balance industry fundamentals and innovation.* Shift to “as a service” to focus on your strengths and modularize your value chain. Drive product and new service innovation through ecosystem digital platforms.

*Accelerate knowledge augmentation.* Capitalize on your data to anticipate customer needs and provide personalized experiences. Utilize cognitive solutions to capture distributed expertise, codify intellectual property and harness your enterprise’s collective experience. Explore the applications of AI in locating new wells, enhancing recoveries from known reserves, optimizing drilling, improving operational efficiency and boosting productivity.

*Commit to a culture of connectivity.* Embrace risk-taking and daringly promote sharing among customers, suppliers, partners and employees. Build new networks using AI, blockchain and IoT. Reduce your transportation costs and quickly address pipeline breaches through digital supply chain ecosystems.

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### **For more information**

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- 1 Wood, John. "BP rolls out BPme smartphone payment app." *Forecourt Trader*. February 2, 2018. [https://forecourtrader.co.uk/news/fullstory.php/aid/14547/BP\\_rolls\\_out\\_BPme\\_smartphone\\_payment\\_app.html](https://forecourtrader.co.uk/news/fullstory.php/aid/14547/BP_rolls_out_BPme_smartphone_payment_app.html)
- 2 Schlumberger press release. "Schlumberger Announces DELFI Cognitive E&P Environment." September 13, 2017. [https://www.slb.com/news/press\\_releases/2017/2017\\_0913\\_delfi\\_pr.aspx](https://www.slb.com/news/press_releases/2017/2017_0913_delfi_pr.aspx)

