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MANAGING DOWNTURNS

A strategic framework for responsive solutions
in the oil and gas sector.

An Infosys Consulting Perspective

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INTRODUCTION

2020 brought a renewed sense of distress and uncertainty to the oil and gas industry. The industry is now engulfed in its fourth significant and unexpected downturn of the twenty-first century. The sudden and sharp decline in oil prices from \$61 at the beginning of the year to \$20 at the end of March is the culmination of several economic factors:

- Increasing geopolitical tensions, leading to more frequent supply interruptions
- Prolific shale resources and new extraction technologies, causing an unprecedented oversupply of oil and gas
- Increasing climate irregularities, urging a stronger global push to reduce carbon emissions
- Technology improvements and the developing price parity of renewable energy resources
- The increasing supply base and economic independence of BRIC and developing countries
- The continued reliance of the economies of OPEC nations on petroleum exports
- The economic arrest and demand destruction caused by the global pandemic

To understand how oil and gas companies can prosper in today's uncertain conditions, we analyzed how various industry participants responded to three recent downturns in the last two decades. In consideration of rapidly unfolding events, our analysis focuses on strategies that prioritize growth beyond the immediate horizon.

How has the industry managed past downturns?

While the immediate situation is unprecedented, a company's medium and long-term adjustments may mirror actions which it has taken in the past to glide through the crises. Historically, oil price drops are followed by vast cost-takeout, production cuts, asset sales, and supplier base reductions. Through our analysis, we found an array of levers oil and gas companies use to adapt quickly to market conditions. These levers can be broadly categorized into four strategic dimensions.

Portfolio dimension

Oil and gas companies shuffle and rebalance their assets to maximize returns and minimize risk. Several majors acquired new international interests during the 2008 downturn. Others launched initiatives to expand their operations in a burgeoning U.S. gas market.

Another response is a shift in focus to operating interests that deliver higher value. While a drop in oil prices may signal distress for E&P, refining often benefits from low feedstock prices. There's a saying in the oil patch, "when East Houston is up, West Houston is down". This refers to the refineries along the east that observe higher margins during downturns. While integrated companies often pull this lever to redistribute proceeds from their downstream activities, the current downturn may not avail of this option.

Levers

- Oil vs. gas
- Upstream vs. downstream
- Operated vs. non-operated
- Conventional vs. unconventional
- Regional vs. global
- Onshore vs. offshore
- Similar vs. diversified
- Oil and gas vs. renewables

Technology dimension

Digitally-enabled companies often have lower per-barrel expenses, can react quickly to market conditions, and take more calculated decisions. As a result, they outbid their competition, obtain the right contracts and capture more market.

An option companies have in their digital journey is whether to develop proprietary technologies in-house or piece together solutions from the market. One company attributed their grit during the 2014 oil price downturn to their proprietary enterprise systems, which drove a 15% reduction in operating expenses.¹ While this example shows how custom enterprise systems can increase competitiveness, a reactive situation like the current may require a company to pull one off the shelf.

Levers

- Contracts vs. partnerships
- Outsource vs. in-house
- Buy vs. lease
- Build vs. buy
- Distributed vs. local
- Fixed price vs. variable
- Innovation vs. scale
- Big data vs. right size
- Transparency vs. obscurity
- Efficient vs. responsive
- Time to market vs. quality

Financial dimension

With any downturn, the ability to take a disciplined approach to spend can deliver immediate value. A common theme, regardless of company size, is a proportionally higher reduction in CAPEX versus OPEX. In general, oil and gas companies cut CAPEX by 15-40% and OPEX by 10-33% during downturns.² Even NOCs have cut spend within these ranges in the past.³ The fast dissolution of share repurchase programs and other reinvestment activities can also help control spending. New stock offerings and debt consolidation are further used to equalize the balance sheet.

Levers

- CAPEX vs. OPEX
- Organic vs. inorganic growth
- Dividend vs. reinvestment
- Debt vs. equity
- Cash vs. interest
- Current vs. long term

Operations dimension

The operations dimension represents a group of levers companies pull to adapt core business activities to the current market environment. Developing a culture of operations excellence, increasing focus on compliance, and establishing a cross-functional organization have historically driven efficiencies that soften the impact of a downturn and attract new investment. Specifically, we found that multiple companies vastly reduced injury rates during downturns as a result of renewed operational focus.

Levers

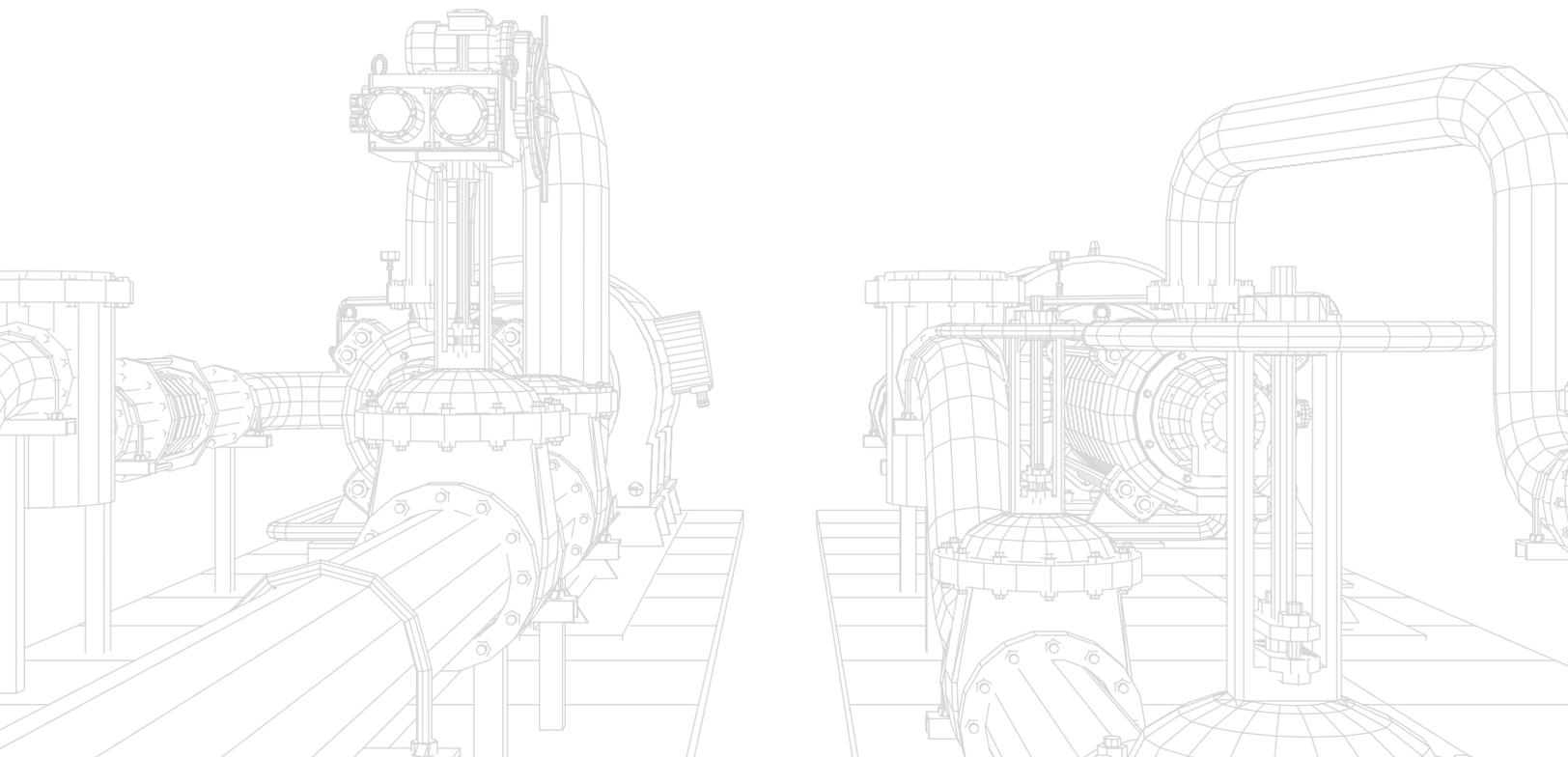
- Growth vs. excellence
- Compliance vs. risk
- Integrated vs. independent
- Top-down vs. bottom-up
- Vertical vs. cross-functional
- Reactive vs. predictive
- Brownfield vs. greenfield
- Sales volume vs. value

Preparing for the future.

The improving outlook of the global pandemic and OPEC's historic production cut, paint a rosier economic picture for the industry than that of early March. However, systemic weaknesses in the industry that pre-date the current crisis remain:

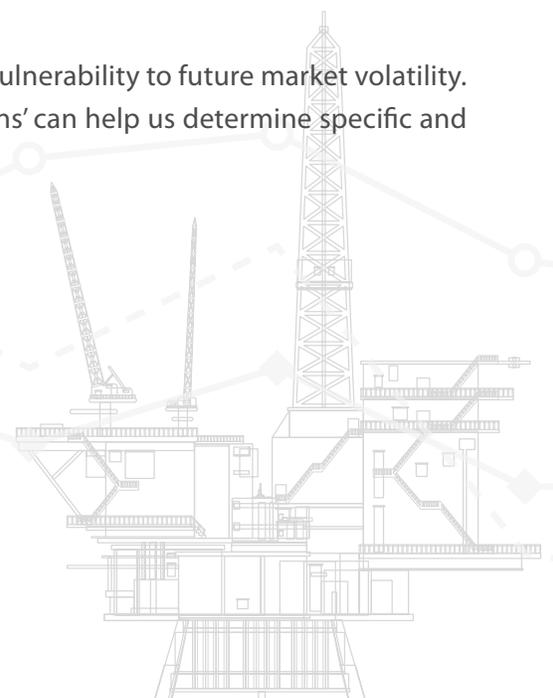
- Low profitability of U.S. companies, specifically those in shale gas
- The vulnerability of oil and gas companies to supply disruptions and imbalances
- A reduced risk appetite for large, complex capital projects
- A sustained low oil price environment that may delay emission reduction efforts
- Delayed investments in renewables and battery technologies, due to relative costs
- New capabilities and precautions from the COVID-19 pandemic may prolong a reduced demand for oil

We believe these concerns can be managed with an objective approach to business activities. As such, our team has complimented the four strategic dimensions above with a framework to prepare for the future. This framework utilizes an organizational fitness strategy with four objectives (lean, strength, flexibility, and balance) that can be used to categorize future considerations for the oil and gas industry.



Dimension	Future consideration	Fitness objectives			
		Lean	Strength	Flexibility	Balance
Portfolio	Improve the diversity of energy portfolio (e.g. Geographic, renewables, etc.)			•	•
	Establish robust real-time decision support systems (DSS)	•	•		
	Integrate information resources and modeling (internal and external)		•	•	•
	Expand vertically or horizontally (not both) along the value chain		•	•	
	Establish a data-driven strategy to determine balance b/w exploration and production	•			•
Financial	Increase offshoring of supplier base and non-core capabilities	•		•	
	Drive operational efficiencies through business process automation and RPA	•	•	•	
	Partner/build venture capital arm to innovate and mitigate disruption		•	•	•
	Increase AI/ML applications to shed light on the competitive environment		•		•
	Create novel apps to evaluate the financial strength and allocate resources	•			•
	Rationalize and consolidate project/application portfolio	•	•		
Technology	Utilize collaboration technology platforms to enable a remote workforce		•	•	
	Upgrade IT infrastructure for a more responsive workforce		•	•	
	“Beef up” cybersecurity infrastructure to prevent data breaches		•		•
	Expand and accelerate cloud migration for vast efficiency improvements	•	•	•	•
	Automate server and data storage management and optimization	•	•	•	
Operations	Establish remote operation centers (ROCs) to reduce risk exposure	•			•
	Automate field workforce w.r.t IoT, AI, and robotics for ‘0-touch’ operations	•	•	•	•
	Educate the workforce with new ways of working (e.g. virtual, lean, agile)	•	•	•	
	Attract top talent with a digital brand, through innovation centers/accelerators		•		•
	Adopt virtual training platforms and leverage open online courses (MOOCS)	•	•	•	

These objectives represent strategic goals that can reduce a company’s vulnerability to future market volatility. Further evaluation of the opportunities listed under ‘future considerations’ can help us determine specific and immediate technology solutions for the oil and gas industry.



Responsive solutions for oil and gas companies.

Over the past several weeks, we have had conversations with our oil and gas clients around their specific IT priorities during this downturn. The theme has been consistent throughout; a need to reduce IT costs and accelerate digital execution. Expanding these priorities using the objectives and levers framework, we outline immediate opportunities where Infosys can help.

How can you meet your fitness objectives?

Lean

What levers can you pull to create immediate cost efficiencies?

Buy vs. Lease

Leasing equipment can shift costs from CAPEX to OPEX, reducing risk, freeing up capital, and increasing flexibility. Compute/storage costs in the cloud can be 40-50% cheaper in TCO than a unit on premises.⁴

- Captive buyout
- Infrastructure buyout

Outsource vs. In-house

Outsourcing enables companies to make substantial increases in productivity, profits, and output quality. Offshoring and IT-as-a-service can provide turn-key and scalable technology essentials at a low cost.

- Offshoring
- IT-as-a-Service

Distributed vs. Local

Cloud infrastructure offers reduced storage costs while enabling business synergies and scale. Cloud solutions are estimated to cut TCO of the IT estate an average of 40%.¹⁰

- Cloud management and migration
- Distributed DevOps model

Strength

What levers can you pull to enable fast increases in output and throughput?

Fixed price vs. Variable

In cases where requirements are easily identifiable, fixed-price contracts have the advantage of shifting risk to the contractor, which incentivizes the contractor to control costs and perform efficiently.⁵

- Universal tech platforms
- Contract standardization

Transparency vs. Obscurity

Improved organization, governance, and transparency of information can reduce decision time and costs while increasing delivery volume, rates, and quality.

- Data democratization
- Master data management

Efficient vs. Responsive

IT resource optimization can streamline backup and recovery operations and enable companies to effectively manage greater storage capacity.

- Data storage optimization
- Server optimization

Flexibility

What levers can you pull to quickly reduce barriers to change and growth?

Innovation vs. Scale

Modular, prefabricated solutions can be quickly scaled up or down to reduce the need for idle investments and improve responsiveness to market conditions.⁶

- SaaS instead of a license
- Agile ways of working

Brownfield vs. Greenfield

Augmented and virtual reality solutions can enable internal staff to perform more complex tasks with minimal training while reducing the need to hire new external resources.

- Mixed reality solutions
- Wearable technologies

Distributed vs. Local

A remote-enabled workforce can improve business agility. Mobile workforce management and e-learning can be used to maximize self-service capabilities.

- Integrated digital workplace
- Digital learning platforms

Balance

What levers can you pull for greater long-term market resilience?

Compliance vs. Risk

Spending on cybercrime is estimated to grow to \$6 trillion by 2021.⁷ IoT and ML can be used to detect anomalies that reduce the probability of costly data or security breaches.⁸

- Application support
- Business process management

Big Data vs. Right Size

Big data has helped companies achieve up to 50% reduction in non-productive time, 20% improvement in ops efficiency, and a 20% reduction in ops support costs.⁹

- Data storage optimization
- Server optimization

Growth vs. Excellence

Enterprise application management allows for the creation of legacy systems, which makes application management agile, intelligent, integrated, and business-aligned.¹¹

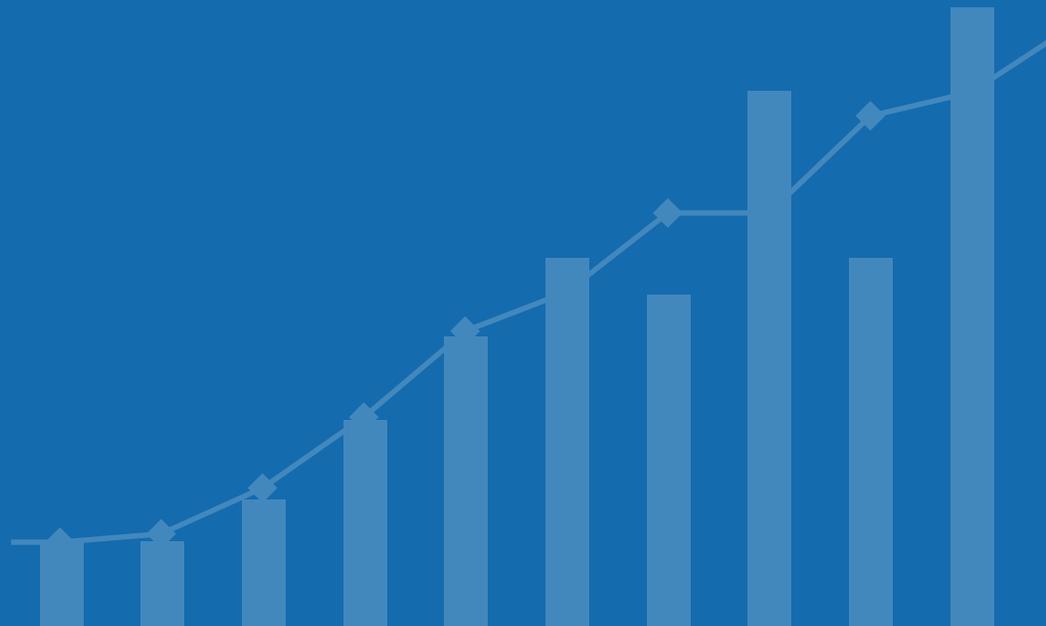
- Enterprise application management

Conclusion

The challenges facing the oil and gas industry in 2020 extend deeper than the immediate concerns of low oil prices and the economic slowdown from a global pandemic. Persistent oversupply, new substitutes, and geopolitical uncertainty will continue to be sources of market volatility. It is therefore crucial for a company to focus on strategies that prioritize growth beyond the immediate horizon.

The framework above presents a robust and comprehensive approach to engage a market that is undergoing significant evolution. Based on the key objectives, dimensions, and levers discussed in this paper, your company can identify technology solutions to respond to any unique market situation. Most importantly, the solutions derived from this framework are designed to outlast the current downturn and provide enduring value to your organization.

We believe that incorporating technical solutions via the application of strategic levers will best position your company to prosper in a dynamic market.



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