

FUELING INNOVATION

TO WIN IN THE INDIAN OIL AND GAS MARKET

Energizing oil and gas companies with
digital technologies to help them thrive
in a fiercely competitive market



The oil and gas industry is sitting on a ticking time bomb—fueled by geopolitics, supply and demand disruptions, fierce competition and sustainability challenges. India, for instance, is the third-largest consumer of oil, but heavy import dependency means that any global supply shocks can have a significant impact on it. It's also the world's fastest-growing energy market that is seeing intense competition as both Indian and global players expand their retail presence. The threat of disruption from electric vehicles also looms large as the Indian government resolves to promote such vehicles. **However, there are opportunities too—a US\$50 billion investment is expected over the next five years in the Indian oil and gas industry.** So, how can companies ride the wave of disruption and grow profitably?

SPARKING CHANGE

The winners will be those who can reinvent themselves by adopting new and agile business models underpinned by digital. Those who use the power of technology to differentiate themselves and find new ways to innovate and grow will gain an edge. Across the oil and gas value chain, digital solutions now offer companies everything from integrated views of operations to new platforms that streamline processes, costs and organizational structures, making it easier to gain the predictability, productivity and efficiency advantage.

Many companies are already investing in digital technologies to optimize operations, rein in volatility, boost cash flow and turbocharge growth. As many as 97 percent of upstream and 92 percent of downstream executives say emerging technologies have helped accelerate innovation in their organization.¹

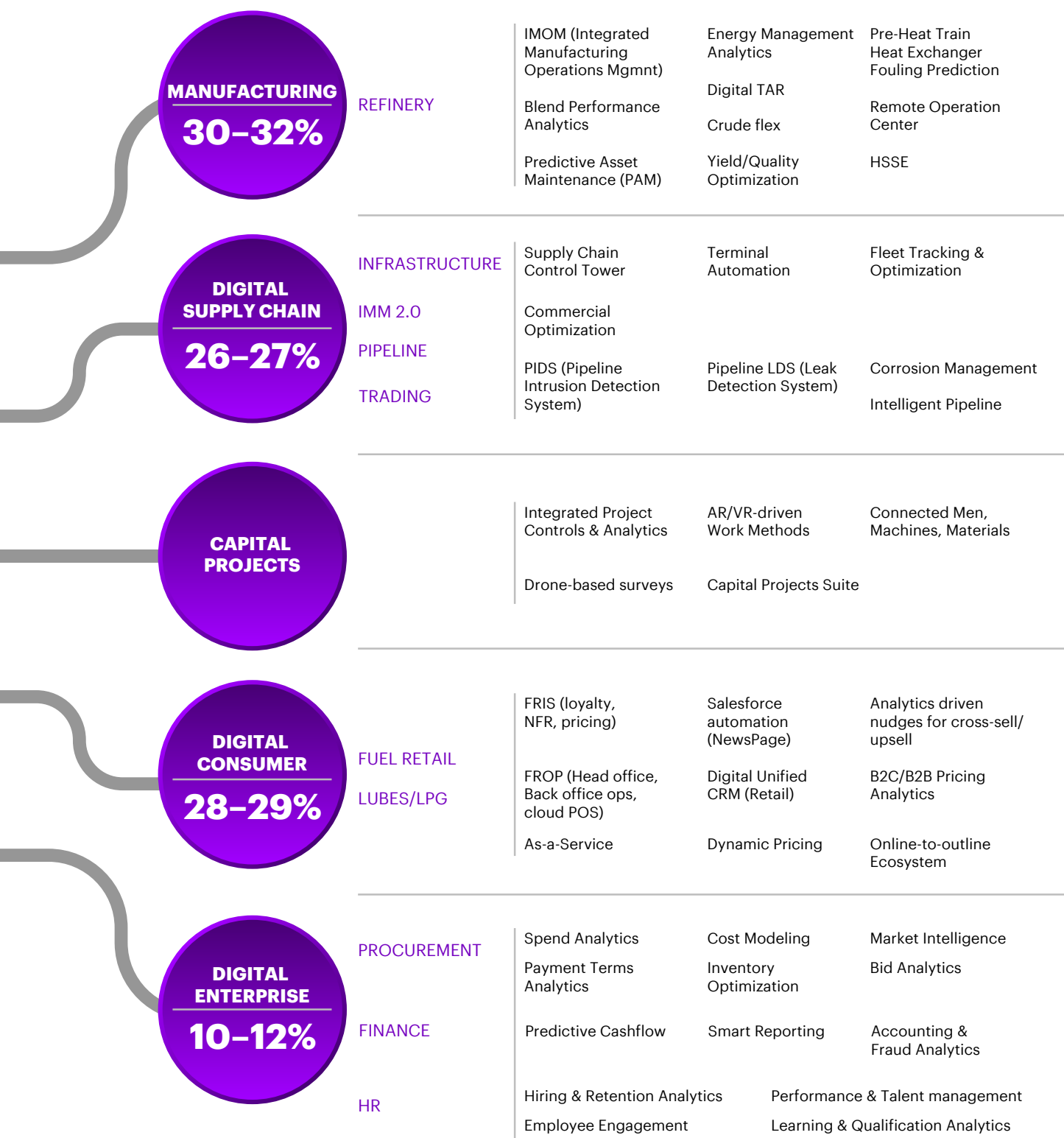
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A global survey also shows that leaders—the top 20 percent oil and gas companies—have already benefited from digital. Done right, digital initiatives can improve EBITDA by up to 1 percent (of revenues); cut capital expenditure by up to 20 percent and improve global cash flows by US\$300 billion by 2025.²



Accenture's proprietary framework provides a high-level overview of the key digital interventions across the oil and gas value chain. The framework is based on our global experience of working with oil and gas majors that have captured significant value from such initiatives (see Figure 1).

Figure 1: It pays to go digital
(percentage figures represent cost savings across initiatives)



Here's how digital can fuel innovation in the oil and gas industry.

FUELING EFFICIENCY IN UPSTREAM

For the upstream sector, cutting costs and improving recovery rates are key priorities. In India, oil exploration companies must contend with scarce oil reserves, exacerbated by inefficiency in oil production. Also, lack of coordination between multiple contractors in managing capital projects leads to major project delays. Digital solutions offer some serious benefits.

Advanced solutions such as **Digital Asset Maintenance and Production Surveillance** are helping increase efficiency in oil extraction and minimize downtime through predictive maintenance. The **Exploration Advisor** is enabling a private oil and gas major and a leading state-run oil and gas company to enhance the probability of success in exploration—by better analyzing massive amounts of exploration data. **The Digital Capital Projects Platform** is shortening project timeframes by 10–15 percent through seamless coordination and alignment across multiple contractors.

EXTRACTING HIGHER VALUE FROM REFINING

India's refining sector is looking at a US\$30 billion opportunity from capital project investments over the next three years. However, time overruns in such projects can go up to 50 percent and cost overruns by 20–40 percent.

Digital solutions such as predictive alerts, video analytics, interactive dashboards and integration tools now provide companies clearer visibility into projects, and help detect problems early on and take quick action. **The benefits? A 10–15 percent improvement in project schedules, a 5–10 percent increase in asset productivity and more than 5 percent reduction in cost.**

Think refining in the New, think “real-time gross refining margin (GRM) optimization.” **This is where advanced analytics comes in. It can help unlock value of up to US\$2 billion in GRM/barrel by optimizing all aspects of refinery operations—from core operations and maintenance to demand management and crude procurement.**

In India, most refining companies are setting up petrochemical plants next to their refineries to boost profitability. Digital can help not just optimize existing refineries, but also achieve better integration with new petrochemical units.



The MOM X.0 digital platform allows integration of up to 20 digital initiatives, including asset and process optimization, safety, connected workers, heat exchanger fouling prediction and digital twin refinery. The result? Companies can realize up to US\$1.5 per barrel.

In lubes, players need to address the growing demand and optimize costs while future-proofing their business in a fierce market. They will gain from reducing raw materials, which account for more than two-thirds of the total manufacturing cost. High-end analytics models can help achieve this by optimizing the use of base oil and additives, reducing tolerance limits in manufacturing blending plants and improving the bottom line. Also, access to real-time data can help companies dramatically reduce high inventory and logistics costs.

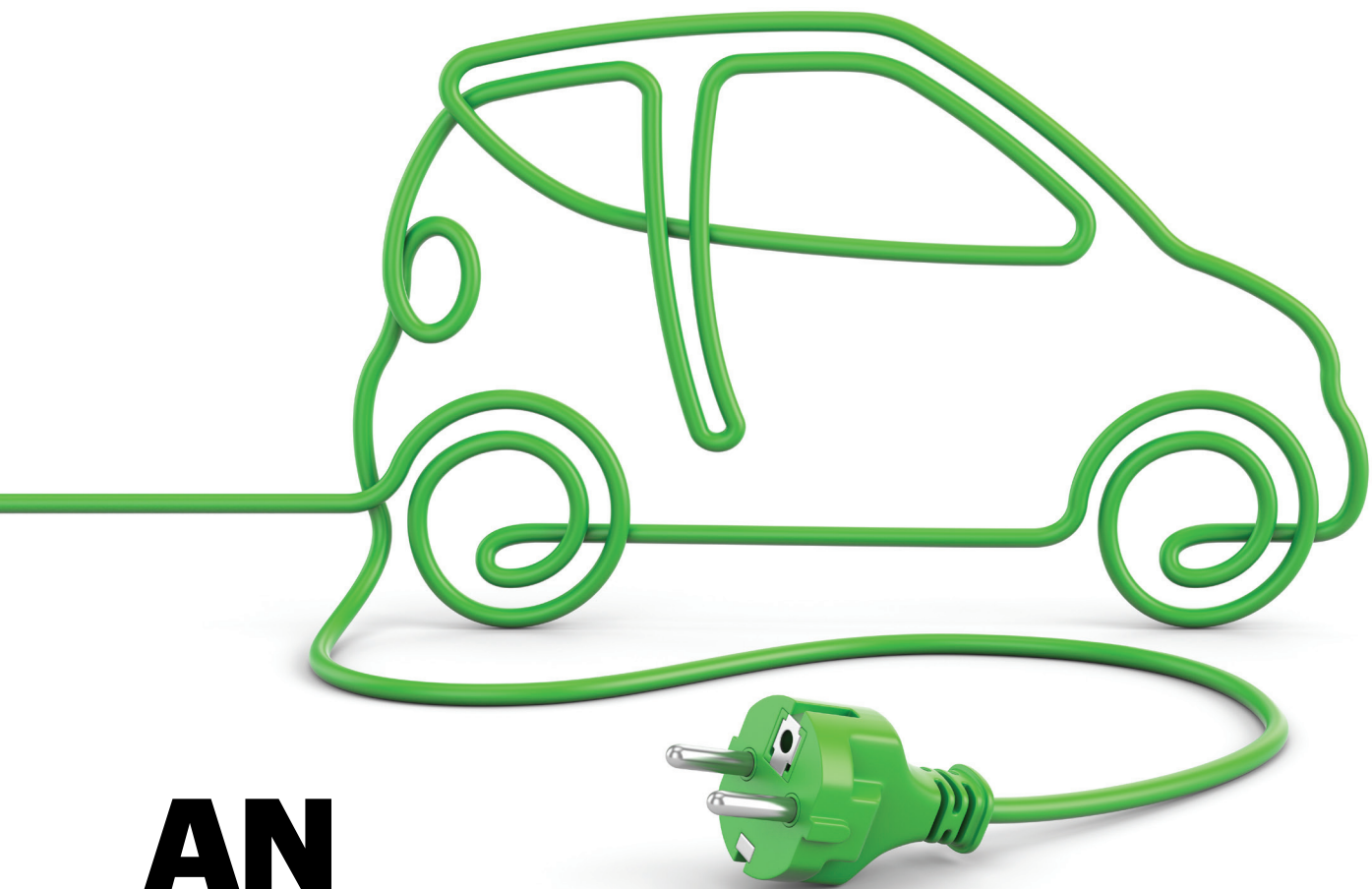
Advanced analytics modeling is helping a leading global lubricants player improve visibility into its B2C supply chain and reduce the working capital requirement of distributors in India. With insights into the market potential of each of the 400 districts in India, the company can plan its sales and marketing activities better. The company is also enhancing its salesforce effectiveness with AI solutions such as NewsPage. In effect, it is moving to a new business model—of selling services along with lubricants. **Digital tools have also helped the company optimize the warehouse network, reducing logistics costs by 8–10 percent.**

DIGITALLY POWERED CONSUMER- CENTRIC MARKETING

In retail, digital solutions are enabling companies to improve operational efficiencies, elevate the customer experience and win market share. For instance, the Fuel Retail Operations Platform and the Fuel Retail Insight Solution are giving a state-run oil and gas company the competitive edge with actionable, near real-time micro-market field-level insights into not just its entire operations, but also the overall retail business.

MIDSTREAM MANAGEMENT

In midstream, the primary challenge facing industry players is corrosion management. Companies are leveraging advanced techniques and digital tools to tackle the problem. Global oil and gas majors, particularly in the United States, Europe and Southeast Asia, have successfully embraced digital for integrated pipeline management. Such solutions can easily be leveraged in India.



AN ELECTRIC BOOST

Globally, the electric vehicle market is growing at a rapid pace. The Indian government's vision is electrification of all public transport and new cars by 2030.³ To realize this, the government will need to move beyond providing subsidies to auto makers and consumers purchasing electric vehicles, and focus on building an enabling ecosystem. Digital technologies are already helping create new business models for electric vehicles. For instance, battery swapping, charging infrastructure management and fleet management models.

Digital shows immense potential to empower oil and gas companies to pursue new innovations and growth at speed and scale. But, to truly seize the opportunities digital offers, companies need to take a more comprehensive approach. Setting up a digital Center of Excellence (CoE) to drive maximum value from related initiatives must be part of their digital transformation journey.

DIGITAL CoE: EXTRACTING MAXIMUM MILEAGE

Oil and gas companies need a central organization that reports to the CEO and focuses on:

VALUE REALIZATION

Identify large business problems that digital can solve

VALUE SUSTENANCE

Track value and profitability being generated by digital, keeping sustainability in mind

VALUE IDENTIFICATION

Keep a close watch on digital trends that can help create greater business value

VALUE CONSOLIDATION

Consolidate digital-specific capabilities so that the right talent and resources can be leveraged across the organization as and when required

AGILITY STARTS HERE

Accenture recommends that oil and gas companies in India must act on these five imperatives to achieve digital's full value:

FEW INNOVATIONS VERSUS SEVERAL PILOTS

Instead of undertaking several digital initiatives, pick a handful across all aspects of the business. Technology will keep changing, but companies need to place their bets.

RETHINK. REDEFINE. REDESIGN.

When considering digital technologies for any stage—exploration, development, production, midstream, refining or marketing—be clear about the desired future state, constraints and opportunities.

MAKE CHANGE STICK

Couple digital investments with investments in people and culture. Invest in tools and training to create an environment of collaboration and experimentation.

RUN LEAN. THINK BIG.

Embrace analytics to understand how causal relationships influence decision making and organizational agility. Establish small teams that can work at speed to drive digital.

LEADER VERSUS FAST FOLLOWER

Closely monitor the market. Be flexible and learn from failures and successes of other companies.

TECH TRENDS

Indian companies must keep an eye out for global trends and shift gears with the changing market dynamics. **The Accenture Technology Vision for Energy 2019 survey of 168 global oil and gas companies identified five technology trends** that energy players must focus on to lead the next phase of innovation in what we call the “post-digital” future.

DARQ POWER

Companies must harness the power of DARQ—distributed ledger technology, AI, extended reality and quantum computing—to reimagine the entire energy industry and its role in the world.

GET TO KNOW ME

Tech-driven interactions create a digital identity for every energy customer—key to understanding the next generation of consumers and delivering individualized, experience-based relationships.

HUMAN+ WORKER

Workforces are becoming Human+ with workers empowered by their skills plus a new set of tech-driven capabilities. Energy companies must adapt technology strategies to support this future workforce.

SECURE US TO SECURE ME

Ecosystem-driven business connections increase the exposure to risks. Organizations must rethink their approaches to security in a way that defends not just themselves, but also their ecosystems.

MYMARKETS

Technology is creating a world of intensely customized and on-demand experiences, and energy companies must reinvent their organizations to find and capture those opportunities as they come.

In the post-digital era, companies will face massive pressure as customers, employees and society make their demands known. But it will also provide tremendous opportunities for companies that can deliver the appropriate experience at just the right time. Investing in the digital ecosystems of the future and the next wave of emerging technologies will give them a good start in capturing those opportunities.

The time to act is now.

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REFERENCES

1. <https://www.accenture.com/us-en/insights/energy/accenture-technology-vision-energy-2019>
2. <https://www.accenture.com/us-en/insights/strategy/oil-gas-digital-agility?>
3. <https://www.thehindubusinessline.com/opinion/editorial/shifting-gears/article26488089.ece>

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