



# TRANSFORMING COMMODITY TRADING IN THE NATURAL RESOURCES SECTOR



## 1. Executive Summary

The natural resources and commodity trading sectors are facing mounting challenges due to volatility, shifting market demands, and outdated systems. Traditional business models and legacy platforms are ill-suited to handle the complexities of real-time decision-making and risk management. To remain competitive, companies must embrace modern, data-driven solutions.

This report explores the need for integrated, agile platforms that enable faster decision-making, real-time risk management, and operational efficiency. Emerging technologies such as cloud-based platforms, digital twins, IoT, AI, and advanced analytics

offer significant opportunities to enhance resilience, optimize performance, and anticipate market shifts.

Infosys, leveraging deep expertise in trading systems integration, helps organisations modernise their technology landscapes. By creating interconnected ecosystems, Infosys empowers firms to innovate faster, streamline operations, and respond nimbly to market dynamics.

Adopting intelligent, integrated platforms is essential for trading organisations to thrive in today's complex, interconnected world, ensuring they can navigate volatility and capture competitive advantages.

## 2. Current Challenges in Commodity Trading: Times of volatility demand a data-driven response

The natural resources sector stands at a crossroads, where traditional business models are straining under the dual pressures of volatility and heightened expectations.

The natural resources industry is no stranger to turbulence. Operating in a global marketplace, companies in this field must contend with the relentless ebb and flow of commodity prices, a key driver of volatility. Compounding this challenge is the unpredictability of exchange rates in many of their operating regions, which amplifies financial risks. Navigating such uncertainty demands more than traditional approaches; it requires sophisticated systems capable of delivering near real-time decision support to manage exposure and mitigate risks effectively.

Legacy trading systems are not designed to cope with the rising levels of volatility and risks. Many of these systems operate in isolation, with limited integration into the operational technologies that underpin day-to-day activities. The result is high reliance on manual processes and underutilization of data—data that, if harnessed effectively, could drive smarter decision-making and sharpen competitive advantage. Instead, valuable insights remain buried in sprawling data lakes or

fragmented databases. Meanwhile, the explosion of data from IoT devices, web scraping, and third-party sources adds to the strain, as traditional systems struggle to process this data influx in real time. Addressing these shortcomings is critical for companies aiming to thrive in such a volatile and data-driven environment.

The challenges facing natural resources firms do not end with market volatility. Increasingly, they must also address mounting demands for the traceability and sustainability of resources. Customers, suppliers, and regulators alike are calling for greater transparency, tighter integration, and heightened collaboration—objectives aimed at curbing costs while safeguarding margins. Meeting these expectations often requires substantial investment in upgrading systems to handle the complexities of sustainability reporting and resource traceability. For many firms, the cost and complexity of these enhancements add yet another layer of difficulty to their technology transformation challenge.

Failure to modernize not only risks financial exposure but also jeopardizes competitiveness in a market increasingly shaped by transparency, sustainability, and real-time decision-making.





### 3. Technical Opportunities in Commodity Trading

#### From Static to Strategic: Modernising Trading Systems for a Volatile, Data-Driven World

The constraints of legacy trading systems have left many natural resources firms ill-prepared for the demands of a volatile, data-driven world. Designed as static systems of record, these platforms lack the agility required by modern organisations striving for flexibility and responsiveness. Decades of underinvestment—by both vendors and clients—have stifled the evolution of tools that could meet the complex needs of global trading operations.

Current digital technologies available in the market present a few opportunities in addressing these issues.

**Cloud-based platforms** offer a promising path forward. By enabling seamless integration across trading functions, these systems lay the groundwork for greater agility and innovation.

**Advanced tools like digital twins of supply chains** allow firms to model scenarios, test contingencies, and make more robust

operational decisions. Built on scalable cloud infrastructure, these solutions are easily deployed across geographies, ensuring a consistent user experience both internally and with third-party stakeholders.

#### The principles of Industry 4.0 further enhance these capabilities.

By harnessing data from IoT devices, firms can achieve real-time visibility into operations and apply advanced analytics to optimise performance. Automation, bolstered by maturing AI technologies, is set to revolutionise trading operations by streamlining processes and unlocking predictive capabilities. From sensing market shifts to processing information and executing rapid responses, AI-powered platforms will enable firms to adapt to market conditions with precision and speed.

Trading organisations should be able to sense the environment, process the information, adapt to the market conditions, and act decisively. To achieve that they need an intelligent integrated platform.

### 4. Comprehensive Solutions for Commodity Trading

#### Seamless Integration for the Future of Trading

Trading organizations require integrated platforms, enabling seamless operations across front, middle, and back offices. To achieve this, lessons can be drawn from industries that have already embraced digital transformation to navigate volatile environments through data-driven decision-making.

At Infosys, we identified the need become a “Live Enterprise” early on. This vision brought together thousands of employees to operate cohesively in a dynamic business landscape, emphasizing technology democratisation, collaboration, and co-creation.

Extending this concept to its real estate management, Infosys integrated IoT devices to capture real-time data across its

campuses, enabling smarter operations as part of its carbon-neutral strategy. Continuous monitoring, energy generation forecasts, demand prediction, and dynamic pricing models have been used to optimize energy and water usage, delivering measurable benefits while adhering to tighter environmental regulations. The success of this approach underscores the necessity of adopting a digital-first mindset.

For trading organizations, integrated platforms are equally essential to meet the complex demands of the volatile markets. These platforms must enable seamless connectivity across enterprise systems, external networks, and IoT devices. This will unlock a wealth of opportunities to respond to market volatility with agility while simultaneously enhancing operational efficiency.

#### Managing non-linear, interconnected processes:

Unlike the linear processes of the past, today's operations are part of a non-linear, interconnected network of agents managing independent yet intertwined supply chains. Responsiveness, agility, and innovation have become critical capabilities. Traders, for example, must leverage structured and unstructured data to vet customers more efficiently and employ sentiment analysis to stay ahead of market trends.

#### Forecasting demand under multiple scenarios

strengthens resilience, while intelligent engines optimize operations by processing diverse datasets.



#### Proactive risk management:

Data generated during operations, enhanced with elements collected from the environment permits the deployment of advanced analytics and AI. Managing risk at real-time with actionable insights becomes the norm rather than the exception.

#### Using predictive insights for efficient operations:

Trading and shipping operators gain the ability to predict and mitigate risks such as port congestion or adverse weather conditions, minimizing demurrage charges and other cost overruns. Meanwhile, engineering teams can use predictive insights to plan maintenance collaboratively, reducing disruptions and enhancing operational efficiency.

The path forward for trading organizations is clear: adopt integrated, intelligent platforms that enable them to sense market shifts, adapt with agility, and act decisively. In doing so, they not only mitigate risks but also position themselves to thrive in an increasingly complex and interconnected world.

## 5. Delivering Solutions that Create Value

Infosys's expertise in platform development, coupled with its deep knowledge of trading and systems integration, has enabled numerous clients to transform their technology landscapes. By creating interconnected ecosystems that seamlessly link internal operations with external networks, Infosys empowers organizations to make faster decisions and manage risks in near real time.

The strength of our platform architecture lies in its agility. Solutions can be deployed swiftly, fostering a culture of innovation where new ideas are brought to users more rapidly, allowing businesses to capitalise on competitive opportunities with greater speed and precision. In a world where agility and responsiveness are paramount, Infosys's approach ensures its clients stay ahead of the curve.

### About the Author



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