



Tech Trends 2021 | Deloitte Insights

Tech Trends 2021

Oil, Gas and Chemicals (OG&C) companies are using technology to recover and reimagine the future

The technologies that enhance our organizations and our lives are more powerful (and more essential) than ever before. Having survived the global hydrocarbon demand crisis of 2020, forward-thinking OG&C organizations are seeking to harness technology to optimize their business recovery, reimagine their future business models, further reduce their cost of operations, and increase the resiliency of their business and technology operating models.

Below we provide an OG&C-specific take on Deloitte's *Tech Trends 2021* report, spotlighting the accelerating technology trends most likely to cause disruption over the next 18–24 months. We explore which trends may be most relevant for industry organizations, and how ready OG&C companies are, to take advantage of them.

From the rise of strategy and technology becoming inseparable to the rapidly disappearing boundary between the physical and virtual worlds, the trends we explore could have profound implications for consumers, producers, suppliers, and governmental bodies, in the months and years ahead.

Tech Trends 2021

Using technology to recover

Relevance and readiness scale:

We looked at each trend and assigned a value from one (low) and five (high) based on the trend's relevance and readiness of OG&C industry adoption.

Relevance:

How impactful would it be if OG&C companies adopted the trend?

Readiness:

How ready are OG&C companies to adopt the trend?

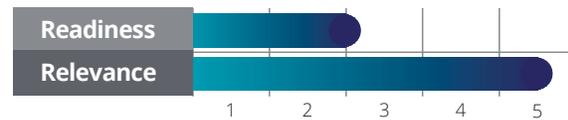


Strategy, engineered

As organizational and technology strategies become more inseparable, technology choices bear a greater role in enabling (or potentially constraining) organizational strategy. Strategy development is being transformed from a slow, infrequent process to one that's continuous and dynamic, helping strategists think more expansively and creatively about the wide range of future possibilities.

Trends in action

As the industry at large rethinks its business operating models, it is critical for technology operating models and enabling strategies to keep pace, and in some ways, leapfrog ahead to pave the way for the future. Agile technology strategy, thoughtful architecture, and product-oriented IT models are key for this industry.

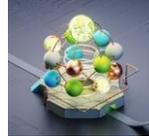
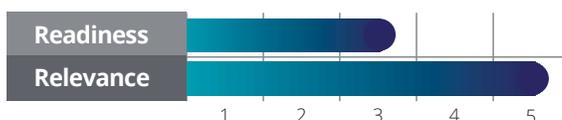


Core revival

Pioneering IT leaders are embracing new approaches, technologies, and business cases to revitalize core assets as organizations increasingly view technology modernization as an imperative to enable strategic change. In a climate defined by historic uncertainty, innovative approaches for extracting more value from core assets could soon become standard components of every digital transformation.

Trends in action

From operate-to-transform and transform-to-operate options to transform-in-place methods, some OG&C companies are using creative ways to modernize their legacy estates. Moreover, there are new technologies and techniques that are helping to accelerate these journeys to a modern estate.

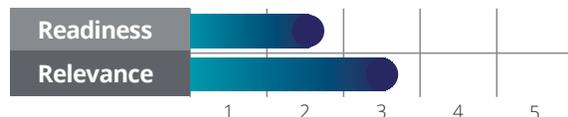


Supply unchained

Organizations are increasingly optimizing their supply chain systems and processes to make them more flexible, durable, and responsive, using advanced digital technologies, virtualized data, and physical technologies to transform supply chain cost centers into customer-focused, value-driving networks. For most, it will be an ongoing journey—one of critical importance.

Trends in action

Some chemicals companies are exploring technologies and initiatives to provide greater visibility into their supply networks and provide better mechanisms to share data more readily and transparently with their supply and logistical partners.



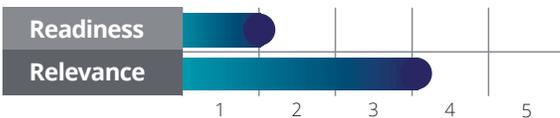


MLOps: Industrialized AI

With machine learning (ML) and AI becoming increasingly key to organizational performance, organizations are realizing the need to move from personal heroics to engineered performance. The era of artisanal AI must give way to MLOps (the application of engineering discipline to automate ML model development, maintenance, and delivery) to shorten development life cycles and industrialize AI.

Trends in action

As the oil & gas industry, at large, embarks on a journey to recover and simultaneously become more resilient and flexible for the future, MLOps will play a key role in helping to augment operational and strategic decisions and enhance productivity. One area is in enhancing capability of remote operations centers.

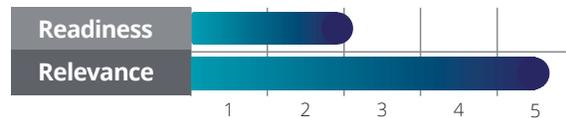


Machine data revolution: Feeding the machine

To achieve the benefits and scale of AI and MLOps, data must be tuned for native machine consumption, not humans, causing organizations to rethink data management, capture, and organization. This can help organizations turn data into a foundation for machines to not only augment human decision-making, but also make real-time, at-scale decisions that humans cannot.

Trends in action

To take advantage of the gold mines of data trapped in legacy and core systems and to fully utilize AI capabilities, OG&C companies are exploring new ways of making data more usable. Through data meshes, data lakes, breaking down data silos, or other techniques, reconsidering data collection and availability is critical to efficient operations.



Client spotlight:

Global integrated oil & gas leader — Reorganizing for the future of technology

Recognizing the criticality of digital enablement to both its core business and its lower carbon future, an oil & gas company undertook an ambitious reorganization of its global technology model. The goal was to unify business and technology professionals into an agile structure, focused on accelerating growth of data science, agile methodologies, and rapid innovation. This structure enables a 'strategy-led' model for investments and rapid alignment of personnel to priorities.

Client spotlight:

Integrated downstream leader — Operate-to-transform model / Core revival

An oil & gas company is looking to increase operational stability, lower technology costs, and setup a strong foundation for its future digital capabilities. The company has adopted an operate-to-transform model — which will help to modernize and streamline its core technology estate, over the medium-to-long term. This model will help unlock new technologies & methods (e.g., cloud) to accelerate the company's digital journey.

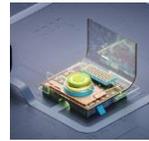
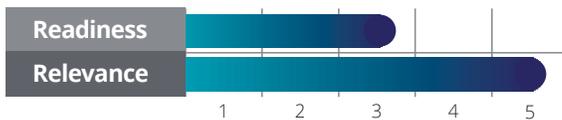


Zero trust: Never trust, always verify

A zero trust cybersecurity posture provides the opportunity to create more robust and resilient security, simplify security management, improve end-user experience, and enable modern IT practices. This shift may require significant effort, including addressing foundational cybersecurity issues, automating manual processes, and planning for transformational changes.

Trends in action

Zero trust approaches hold the promise of improving cybersecurity across every organization. By starting with a default policy of denial instead of trust, systems can be made far more secure. The transition also provides the opportunity to better utilize automation and resources.

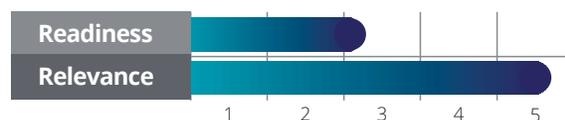


Rebooting the digital workplace

The digital workplace represents a fundamental shift in the way work gets done. Organizations are embracing technology to optimize individual and team productivity, collaboration, and the employee experience at large. As on-site workspaces and headquarters evolve, organizations can use data to create thriving, productive, and cost-effective offices that are interwoven with the remote experience.

Trends in action

Adopting leading practices in managing team interactions and adapting to a hybrid virtual office promises productivity improvements. Leveraging modern collaboration technology also promises better access to talent from across the country or overseas.

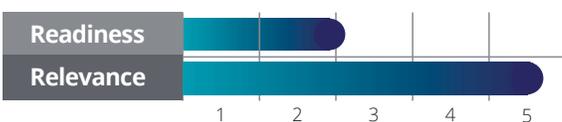


Bespoke for billions: Digital meets physical

Forced to embrace digital faster than ever, organizations are recognizing that the desired human experience strikes a balance between making traditional physical human experiences more digital and digital experiences more physical. In the near term, online and offline interactions will become more fully integrated experiences, benefiting from the best capabilities of each.

Trends in action

By combining leading practices from the virtual and in-person worlds, OG&C companies can provide employees, customers, and consumers with the pandemic-era experiences they have become accustomed to.

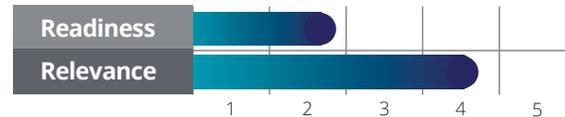


DEI tech: Tools for equity

Organizations have access to increasingly sophisticated tools to support their diversity, equity, and inclusion (DEI) initiatives across the talent life cycle. The tools seek to make DEI decision-making and processes more data-driven, but leaders must still carefully consider potential unintended consequences and carefully manage implementations to achieve their goals.

Trends in action

Increasingly, technologies are improving the ability to identify, recruit, and manage a diverse workforce. Bringing the right data to newer technology can help OG&C companies to work towards better support of DEI goals.



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