A colorful graphic in the top left corner featuring a gear with segments in orange, yellow, red, and purple, overlaid with a network of blue nodes and lines.

To disrupt, rather than be disrupted, is easier said than done. With business and technology inextricably linked, keeping pace with the emerging technology landscape can be difficult for even the most tech-savvy leaders. Technology platforms such as Oracle are primed to empower organisations and their leaders to harness the latest technology trends and facilitate true business transformation.

With the next stage of digital evolution set to transform business in unpredictable ways, architecting for longevity and adaptability requires a deep understanding of both today's realities and tomorrow's possibilities. Our Deloitte professionals have deep experience applying Oracle technologies to help organisations achieve business goals, and leveraging the Oracle platform to provide the focused, relevant insights that are critical for maintaining competitive advantage.

This perspective explores Deloitte's Tech Trends 2020 report with an Oracle lens to provide a look into how the modern enterprise may navigate each trend with Oracle technologies. We hope it can be the catalyst to help you and your organisation through its digital journey.



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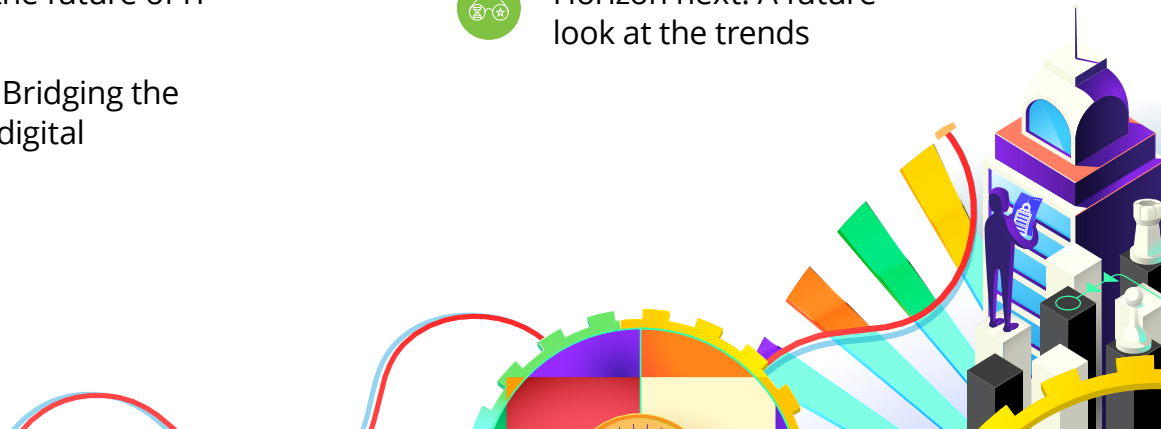
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Macro technology forces

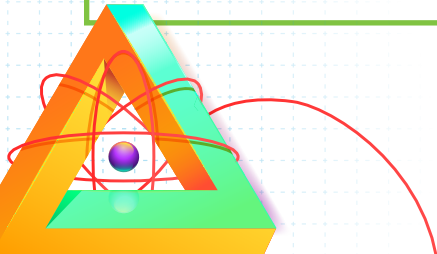
Last year's Tech Trends report explored nine macro technology forces that form the backbone of business innovation and transformation. For a decade, we've been tracking the emergence and eventual ascent of digital experience, analytics, cloud, digital reality, cognitive, blockchain, the business of IT, risk, and core modernisation. This year's update takes a fresh look at enterprise adoption of these macro forces and explores how they're shaping the tech trends we predict will disrupt businesses over the next 18 to 24 months. To realise the full promise of these forces, organisations are exploring how they intersect to create more value as well as new ways to manage technology and the technology function. This necessary step is becoming increasingly important as businesses prepare to tackle emerging forces that appear farther out on the horizon: ambient experience, exponential intelligence, and quantum.

Oracle perspective

ERP vendors such as Oracle are innovating constantly to adopt the macro forces, especially those that provide immediate opportunities for organisations to cross the digital frontier and realise gains. As a result of these efforts, some analysts predict that cognitive technologies such as artificial intelligence (AI) and machine learning (ML) could become mainstream capabilities in ERP systems in the near future.

Moving to cloud is often a stepping stone for leveraging additional macro forces. Cloud-based ERP systems, such as Oracle Cloud, can accelerate a company's ability to innovate and adopt cognitive technologies, ranging from basic robotic process automation (RPA) to more-advanced solutions that use AI and ML to make predictions and recommend actions to aid more accurate decision-making. As organisations progress on their digital journeys, they must remain focused on their digital ambitions, understand the human implications, and course correct as they go.

To assist companies in their digital transformations, Deloitte has developed a rich set of tools and accelerators. These include pre-built, digital, full-time equivalents (FTEs) and Deloitte Ascend™, a proprietary platform that helps companies go beyond cloud deployment to realise their full-scale digital ambitions.





Ethical technology and trust

Leading companies are realising that every aspect of their organisation that is disrupted by technology represents an opportunity to gain or lose trust. They are approaching trust not as a compliance or public relations issue, but as a business-critical objective. In this light, trust becomes a 360-degree undertaking to ensure the organisation's technology, processes, and people work in concert to maintain the high level of trust expected by stakeholders. Business leaders are reevaluating how their products, services, and the decisions they make—around managing data, building a partner ecosystem, and training employees, among others—build trust. CIOs are emphasising “ethical tech” and creating tools to help people recognize ethical dilemmas associated with utilising disruptive technologies. Leaders who embed values and tech ethics across their organisation are demonstrating a commitment to “doing good” that can build a long-term foundation of trust with stakeholders.

Oracle perspective

Outsourcing of technologies and services continues to be on the rise as part of the CIO's strategic roadmap. When defining their strategies for ethical use of technology, companies that use outsourced services should consider the vendor's own approach to “ethical tech.” It is important that vendors within a company's partner ecosystem be transparent with their own code of ethics and conduct, given that the vendor's employees are responsible for safeguarding the company's information.

In an era where security breaches continue to make headlines, companies that are moving to Cloud ERP solutions need assurance that their customer information and financial data are being protected. That's why many leading vendors take proactive measures to gauge the solidity of their cloud infrastructures. These measures include penetration testing and ethical hacking to identify and rectify areas of weakness in their solutions. In addition, Oracle strives to improve its Secure Coding guidelines as technologies and coding practices evolve.





Finance and the future of IT

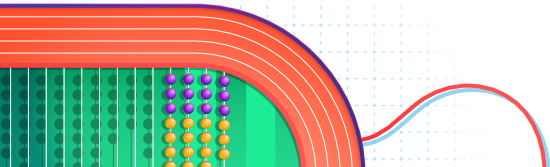
As technology strategy has increasingly become a core part of business strategy, the demand for improved outcomes has grown. To achieve this, we expect to see more IT and finance leaders working together to develop flexible approaches for innovating and operating at the speed of agile. Whether under the name of supporting innovation, defending against disruption, or enabling digital transformation, IT will need finance's support to effectively rethink governance of technology innovation, adapt to Agile methodologies, and secure creative capital. The work of transitioning to new finance, budgeting, and accounting processes that support innovation will not happen overnight, but there are strong competitive advantage incentives for both CIOs and CFOs to find ways to effectively fund innovation.

Oracle perspective

Today, in many cases, Oracle Cloud transformations are co-sponsored by the CFO and the CIO to enable tight alignment across:

- **Funding:** A transformation roadmap, capability release strategy and funding pattern can balance the need for digitising the core with innovating at the edge.
- **Value realisation:** Value can be realised through a disciplined approach to value capture and measurement with business owners defining concrete steps to create value with digital capabilities.
- **Digital-ecosystem partnering:** A savvy vendor management office that understands the importance of strong partner relationships can foster co-innovation, promote joint investments, and develop a viable OPEX-CAPEX strategy that accommodates budgeting constraints.

By aligning on these agile tenets, CFOs and CIOs can jointly establish a flexible, collaborative transformational agenda that continually balances the funding between digital innovation and ongoing operations.





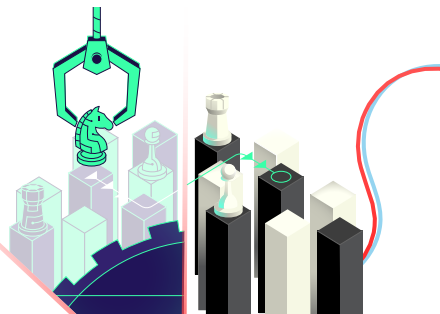
Digital twins: Bridging the physical and digital

The idea of using virtual models to optimise processes, products, or services is not new. But as digital twin technology advances, organisations are finding that combining increasingly sophisticated models, IoT sensor data, and machine learning presents a host of new opportunities ranging from optimisation to autonomous decision-making to new business models. Higher fidelity digital representations of the physical world can be modified and simulated millions of times for optimisation and data-driven, high-velocity decision making. As capabilities and sophistication grow, expect to see more organisations use digital twins to optimise processes, make data-driven decisions in real time, and design new products, services, and business models. In the long term, realising digital twins' full promise may require integrating systems and data across entire ecosystems.

Oracle perspective

Oracle has a robust set of applications and supporting frameworks across its offerings that can help organisations to bridge the gap between the physical and virtual worlds and embrace the digital twin trend. By leveraging Oracle Edge services and IOT applications, organisations can enable the complete physical-to-digital-to-physical loop, leveraging one or more of the following components:

- **Virtual Twin:** a virtual representation of a physical device
- **Predictive Twin:** an analytical or statistical model that uses machine learning to make predictions
- **Twin Projections:** a means of feeding predictions and insights back into business applications through native integrations





Human experience platforms

Humans have a need for connection that is often unmet by our daily digital interactions. With so much riding on these interactions, a growing number of organisations are designing highly customised experiences around the behaviors, preferences, emotions, and values of individual users. They are injecting emotional intelligence into their systems with an integrated array of AI capabilities like voice stress analysis and micro-expression detection tools that help systems intuit a user's mood. Placed in the context of customer history, preferences, and recent interactions, these insights into user emotion can help organisations engage anyone using their systems—customers, employees, and business partners alike—in a more contextually appropriate, human manner. The net result is emotionally intelligent human experiences that leverage connections between people, systems, data, and products.

Oracle perspective

Oracle has embraced the concept of human experience and is injecting emotional intelligence into its enterprise applications and AI-enabled platforms. For instance, digital assistants, which are embedded into Oracle enterprise applications or available for separate deployment, use conversational AI to provide personalised interactions. In addition, Oracle's rich data science platforms can analyse human interactions in subtle ways that allow people and machines not only to co-exist but also to interact with each other more naturally.





Architecture awakens

Growing numbers of technology and C-suite leaders are recognising that the science of technology architecture is more strategically important now than ever. We expect to see more organisations move architects out of their traditional ivory towers and into the trenches, and these talented, if underused, technologists will be taking more responsibility for services and systems. Their goal will be straightforward: build and maintain the kind of architectural agility that often gives younger competitors a market advantage. And organisations will redefine the architect role to be more hands on, collaborative, creative, and responsive to stakeholder needs. No longer technology portfolio pundits, architects will find themselves working on multidisciplinary project teams with colleagues from the business. organisations investing in architects and architecture and promoting their strategic value enterprisewide can evolve this IT function into a competitive differentiator in the digital economy.

Oracle perspective

Architects are jumping into the trenches. They will likely become more involved in operations and will need to work as part of the larger development team. Moving forward, architects will need to reimagine their technology stack and consider technologies such as blockchain, AI and ML and utilise open source technologies. Architects can help define how DevOps and NoOps architectures and practices should be structured. Architects will also be responsible for understanding the business broadly, predicting dynamic consumption, and architecting lower operating costs into the solutions they design, most likely leveraging cloud offerings such as Oracle Autonomous Database and Oracle Cloud Infrastructure. They will need to be both more technically specialised and more aware of the enterprise-wide landscape. As their roles expand, so will their contributions, making them invaluable catalysts for transforming, optimising, and empowering the business.





Horizon next: A future look at the trends

How can organisations look beyond what's new to what's next? Those leading this charge have disciplined, measured, innovation programs that align innovation with business strategy and a long-term technology landscape. They take a programmatic approach to sensing, scanning, vetting, experimenting, and incubating future macro technology forces until the technology, the market, and the business applications are ready on an enterprisewide scale. Other organisations should consider following suit, using the knowledge gained to reimagine and transform before they themselves are disrupted. In a world of unknowns, it is possible to focus attention on a meaningful collection of known technologies that, taken together, can help you chart a path to the next horizon.

Path to tomorrow

Ambient experience, exponential intelligence, and quantum are the nascent macro forces we currently see on the distant horizon. Like cloud technologies before them, they will evolve over time and perhaps cross-pollinate with other forces to create something wholly new. For each, here's a quick exploration of where they're heading, and a snapshot of some of the technology breadcrumbs helping build toward that potential.

Oracle perspective

Next on the horizon for the Oracle ecosystem is to integrate nascent macro forces to generate business value—potentially by creating a “digital wrapper” that sits on top of Oracle products. What might the business value generated by melding Oracle products with the nascent macro forces look like? Ambient experience could enable users to consume enterprise data and interact with enterprise applications in natural ways, such as speaking, gesturing, and thinking. Exponential intelligence could take the user experience beyond algorithms and pattern recognition by providing the ability to recognise and respond to the nuances of human interaction and emotion. Quantum computing could give companies the ability to analyse all of the data residing in their enterprise systems, create “unhackable” data streams, miniaturise technology, and make many more exponential leaps.



- **Ambient experience:** Represents a world where the physical and the digital are intertwined with such elegance and simplicity that we shift to natural, intuitive, and increasingly subconscious (maybe even unconscious!) ways of engaging with complex technologies
- **Exponential intelligence:** General-purpose superintelligence able to build algorithms, confident predictions, and automated responses across complex, dynamic, and constantly evolving domains
- **Quantum:** Evolution of computing to harness the power of quantum dynamics to dramatically unlock new workloads and insights.

Explore more

Download the full Tech Trends 2020 report
www.deloitte.com/insights/tech-trends



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