

The Future of Cloud: How to Stay Ahead of Emerging Trends and Innovations




Cloud computing has fundamentally reshaped how businesses operate, delivering unprecedented scalability, cost savings, and innovation. However, the cloud landscape is in a constant rapid state of evolution. To stay ahead, organisations must understand the most significant trends shaping the next three years and proactively implement strategies to unlock their value.

Major Innovations Driving Cloud's Evolution

Cloud's evolution is opening opportunities across several fronts to create business value:

Multi-Cloud Strategies: Embracing Flexibility While Managing Complexity

A recent [Flexera report](#), showed nearly 87% of businesses are adopting a multi-cloud strategy. This multi-cloud approach offers advantages such as leveraging the unique strengths of each provider, avoiding vendor lock-in, and optimising workload placement based on factors like cost, performance, and geographic location. To succeed with a multi-cloud strategy, businesses must focus on:

 **Interoperability:** Design systems considering easy portability of data and workloads between cloud providers. Tools like containerisation and service-oriented architecture can significantly enhance cloud interoperability.



Managing Complexity: Choose between building in-house expertise or using external managed solutions to address operational challenges across different platforms. Consider how you will seamlessly manage security, compliance, and configuration across providers.



Cost Optimisation: Implement rigorous cost tracking, usage analysis, and tools to right-size workloads across multiple vendors. This helps ensure costs don't spiral out of control in a complex environment.



Strategic Generalists: In a landscape spanning multiple clouds, on-premises data centres, and edge computing, architects with a broad view are becoming vital. They connect the dots, translate technology complexities into business value, and ensure alignment between your cloud architecture and overall goals.






Industry-Specific Clouds: Driving Sector-Specific Transformation

The era of "one-size-fits-all" cloud solutions is waning. Major providers increasingly offer tailored solutions for specific industries like healthcare, finance, manufacturing, and others. Industry-specific clouds deliver distinct advantages:

- ◆ **Accelerated Innovation:** Benefit from pre-configured apps, workflows, and tools directly addressing industry-specific needs, speeding up time-to-market.
- ◆ **Improved Compliance:** Work with solutions pre-built to adhere to stringent industry regulations, ensuring data security and compliance with standards like HIPAA in healthcare or PCI DSS in finance.
- ◆ **Deep Vertical Expertise:** Collaborate with cloud providers and partners experienced in your industry, leveraging their specialised knowledge.
- ◆ **Edge Computing:** Pushing the Boundaries of Real-Time Insights.

To harness this potential, organisations can:

<p>Catalogue industry-specific solution gaps and pain points</p> 	<p>Research providers with expertise in their vertical</p> 	<p>Prioritise pre-configured, purpose-built apps</p> 
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Specialised industry clouds are inevitable. Organisations dismissing this trend risk falling behind early adopters already reaping the benefits. The time is now to envision how industry clouds can strategically empower your organisation.



Edge Computing: Pushing the Boundaries of Real-Time Insights

[IDC predicts that Edge Computing Investments will reach \\$208 Billion in 2023](#), fuelled by 5G, IoT, and AI. These technologies are driving massive data growth that strains networks and causes latency when processed centrally. Edge computing brings processing power and data analysis closer to its source, enabling transformative use cases in industries where low latency and near-real-time decision-making are critical.

To fully capitalise on edge computing, organisations must:



Identify High-Impact Use Cases:

Prioritise industries and applications where speed and reliability matter, such as autonomous vehicles, predictive maintenance, and personalised customer experiences.



Balance Edge vs. Cloud vs. On Premises:

Strategically determine which data processing tasks are optimal at the edge and which are better suited for a centralised cloud or on premises for optimal performance and cost-efficiency.



Develop Integrated Architecture:

Plan an edge computing roadmap that aligns with your overall cloud strategy, ensuring seamless data flow and management across a distributed model.

What measures are you currently implementing to maximise the full potential of edge computing?



AI in Cloud Management: Automating Optimisation and Security

Artificial Intelligence (AI) is poised to revolutionise cloud operations. AI-powered systems are increasingly being utilised to enhance cloud management in the following ways:

- ◆ **Proactive Security** Machine learning algorithms can analyse vast amounts of data to detect subtle anomalies beyond the capabilities of traditional rule-based systems.
- ◆ **Intelligent Resource Allocation:** AI-driven analysis can optimise workload placement, scaling resources up or down in real time, improving efficiency and cost control.
- ◆ **Predictive Cost Management:** Forecast cloud spending more accurately with AI-powered recommendations, proactively identifying inefficiencies and potential areas for savings.

To capitalise on AI, organisations must:

- ◆ **Identify High-Value Use Cases:** Prioritise use cases and processes where AI can have the biggest business impact based on criteria like cost savings, accuracy improvements, and productivity gains.
- ◆ **Develop In-House Expertise:** Assemble specialised teams to pilot AI cloud management solutions, providing them the tools, data access, and executive support needed to succeed.
- ◆ **Implement Safeguards:** Establish rigorous governance of AI systems to ensure transparency, ethical operations, and accountability for decisions/outcomes.
- ◆ **Architect for Agility:** Construct environments enabling easy deployment of AI services from multiple providers to avoid vendor lock-in, allowing adoption of state-of-art solutions as the technology matures.

Quantum Computing: Anticipating the Next Computational Paradigm

While quantum computing is still in its early stages, it holds enormous potential to solve complex problems currently beyond the reach of classical computers. Though commercial applications might be a few years away, it's wise to start familiarising yourself with the technology:

Potential for Disruption: Identify areas within your business where quantum computing could fundamentally transform processes, such as accelerating drug discovery or optimising intricate supply chains.

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Building Quantum Readiness: Start building internal knowledge and exploring potential partnerships with research institutions or quantum software start-ups.

2



Critical Enablers for Cloud Success



establishing posture management, and leveraging machine learning for threat detection. Neglecting native security risks catastrophic breaches.

Are you keeping up with the latest cloud security threats, regulations, and best practices?



Skills and Talent

The explosion of cloud technologies requires a new architect type - the strategic generalist who can span diverse solutions. As options proliferate, architects often specialize in specific domains. However, expanding cloud technologies need big-picture thinkers to adeptly frame interrelationships between technologies, improving decision-making. Strategic generalists possess business acumen beyond engineering to frame different technologies in terms of business value. Without them tying different disciplines together, technical vision fractures as portfolios diversify. While specialisation remains vital, the rising demand for complex enterprise cloud roadmaps will increase the need for skilled strategic architects to translate complexity into clarity.

More broadly, the increase in demand for cloud skills will require organisations to prioritise training and development to address shortages effectively. Neglecting training risks poor ROI, breaches, and non-compliance. Knowledge transfer is key to upskilling staff and staying competitive.



To capitalise on cloud's potential, organisations need to invest in key enablers:



Security

As threats and regulations evolve amid rapid technology change, cloud security requires constant vigilance. Machine learning can analyse millions of events to detect anomalies. Cloud-based tools with advanced analytics and AI are becoming standard as data centre perimeters disappear. At KPMG, we help organisations adopt emerging practices like infrastructure-as-code to automate policy enforcement, analytics, and AI for continuous intelligent monitoring, and building preventative security into infrastructure and applications. To capitalise on cloud security's promise, key steps include deploying zero-trust networks, governing access with brokers,



Cloud Cost Optimisation

Ungoverned cloud adoption has led to runaway costs at many organisations. Cloud cost optimisation and FinOps are methods which offer organisations the tools to monitor and control their cloud costs and acts as a lever to help inform optimal migration and modernisation routes. Working hand in hand with sustainability metrics, cost acts as a significant influencer in the selection of the correct CSP as well as the correct strategy for any solution and its operating model. Organisations that are mindful of their cloud responsibilities in advance of any migration will see a better return on their investment than those who simply adopt a lift and shift approach.

As part of your migration and modernisation planning, are you factoring in the total cost of ownership beyond basic infrastructure expenses? What oversights could unnecessary cloud spend hide in terms of refactoring applications for maximum business benefit? Uncontrolled cloud spend can hide missed opportunities to rearchitect legacy applications for maximum business impact. Have you assessed short-term cost reductions come against enabling long-term platform innovation?



Looking Ahead: Embracing Cloud's Continuous Transformation

Cloud computing will continue rapidly advancing, with innovations in edge computing, quantum, and specialised industry clouds poised to disrupt organisations failing to adapt. Leading in the cloud era requires accepting transformation as an ongoing journey, not a one-time initiative. By embracing a strategic approach to cloud governance and talent development, businesses can continuously reinvent what's possible as new paradigm-shifting technologies emerge.

The real transformation over the next few years of enterprise cloud is still to unfold. The future belongs to those asking forward-looking strategic questions today about the potential of exponential technologies and positioning themselves purposefully to capture the next waves of innovation. Cloud's accelerating pace of change has only just begun - are you ready to leverage it as a springboard for sustained leadership?

How Can KPMG Support this?

With its broad client base and breadth of experience in the growth of Cloud, KPMG has produced an array of supporting technologies and services which give their clients the opportunities to deliver on these key takeaways.

Whether this is SRE as a service; enabling the effective delivery and support of App Modernisation or the demonstration of value impact of cloud modernisation in specific industries with its Target Impact Modeller, Value Labs and Sustainability toolsets; Multi-Cloud simplification framework, KPMG is well equipped to enable organisations the ability to take Cloud and use it as a tool to grow and lead in their chosen space.



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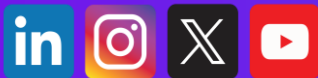
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Neil is a cloud architect with over 25 years of experience leading complex enterprise cloud transformations. As an architect in KPMG's Connected Technology practice, he specialises in a range of Cloud Technologies encompassing Modern Workplace, Cloud, Modern Hosting and Edge solutions.

Neil brings a pragmatic approach to the Cloud transformation journey, ensuring the strategies and their supporting technologies to best leverage the right resources.



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