

The synergy between AI and cloud transformation

How prepared are you for the future of work and
innovation?

An Infosys Consulting Perspective

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Introduction

The exponential growth of data and the increasing complexity of business operations have necessitated the adoption of cloud computing as a critical enabler of digital transformation with spending on end user cloud computing services hitting a staggering \$600 billion in 2023. In parallel, artificial intelligence (AI) has emerged as a game-changer in the technology landscape with spending in 2023 expected to hit between \$160 billion to \$400 billion and with it transforming the way businesses operate and driving innovation across various domains. This paper explores the relationship between AI and cloud transformation, highlighting the synergies, strategies and benefits of their integration, along with the key technologies that underpin their relationship.

Joint spent on cloud computing and AI could reach up to \$1 trillion by end of 2023.

The emergence of AI and cloud computing

AI and cloud computing have emerged as two of the most disruptive technologies in recent years. While AI is transforming the way we process data and automate tasks, cloud computing is enabling organizations to scale and optimize their operations. The convergence of these two technologies has created new possibilities for businesses to leverage data and gain insights, streamline processes, and drive innovation.

1. Natural Language Processing (NLP) and Chatbots: NLP is an AI technology that allows machines to understand and interpret human language. Chatbots are AI-powered applications that use NLP to interact with users in a conversational manner. Together, NLP and chatbots are enabling businesses to provide more personalized and efficient customer service, while reducing the workload on human customer service representatives. Think of Mondly: a chatbot transforming how people learn languages combining innovative NLP, Chatbot and NPC (non-playable character) features. In April 2023, OpenAI, the creator behind the much-publicized ChatGPT, recently closed a \$300 million share sale, valuing the company at nearly \$30 billion.
2. AIOps, or Artificial Intelligence for IT Operations, is an emerging technology that uses machine learning algorithms and advanced analytics to automate and improve IT operations. This technology is gaining popularity among companies as it enables them to proactively detect and resolve issues before they impact business operations. Deploying AIOps involves several steps. Firstly, companies need to collect large volumes of IT infrastructure data, including logs, metrics, and events, from their monitoring tools. Next, this data is processed and analyzed using machine learning algorithms that can recognize patterns and identify anomalies.

These insights are then used to detect and isolate problems in real-time and provide proactive defense against. A major player in this area is Broadcom, who completed their acquisition of VMWare, the largest cloud computing and virtualization acquisition to-date.

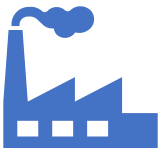
3. Edge-to-cloud: Edge Computing is a cloud computing technology that enables data processing and analysis to be done at the edge of the network or closer to the source of the data such as SmartMeters. By leveraging edge computing, businesses can reduce latency and improve the performance of cloud-based applications, while also improving data security and reducing bandwidth costs. The market is expected to grow to over \$50 billion (TechTarget)
4. Cloud-based IoT platforms: Cloud-based Internet of Things (IoT) platforms are enabling businesses to connect and manage IoT devices and sensors from a centralized location. By leveraging the power of cloud computing and AI, these platforms are enabling businesses to gain insights into IoT data and automate IoT-based tasks, such as predictive maintenance.
5. Cloud-based collaboration: Cloud-based collaboration tools, such as Microsoft Teams and Slack, are enabling businesses to improve communication and teamwork across the organization. By providing a centralized platform for communication and collaboration, these tools are helping to streamline business operations and improve productivity. Microsoft are currently testing their flagship AI collaboration offering **MS Co-pilot** which is built open OpenAI's GPT4 Large Language Model (LLM) – sure to be game-changer.

Examples of AI and cloud transformation in various industries



Healthcare

The healthcare industry has been leveraging the synergy between AI and cloud transformation to improve patient outcomes and reduce costs. AI-enabled cloud services are being used to develop predictive models to identify patients who are at risk of developing chronic diseases, detect diseases at an early stage, and develop personalized treatment plans. Cloud computing is also enabling healthcare providers to store, manage and analyze large volumes of patient data, making it easier to identify patterns and trends, and make informed decisions. The global healthcare cloud infrastructure spend is expected to reach over \$60 Billion by end of 2023 and analysts estimating the industry could save ~\$200 Billion from further AI investment.



Manufacturing

The manufacturing industry has been using AI-enabled cloud services to improve operational efficiency, reduce downtime and improve product quality, spending is expected to increase to over \$350 billion on cloud infrastructure with AI expected to hit ~\$15 billion. AI algorithms are being used to analyze large volumes of production data to identify patterns and anomalies, enabling manufacturers to predict machine failures and schedule maintenance proactively. Cloud computing is also being used to store and manage production data, making it easier to analyze and optimize operations, and enable predictive maintenance.



Financial services

The financial services industry is using AI and cloud computing to improve risk management, reduce fraud, and improve customer experience. AI-enabled services are being used to develop predictive models to identify potential fraud, detect anomalies, and improve fraud prevention – it is estimated banks saved over **860 Million Hours with use of chatbots (Forbes, DataBank)**. Cloud computing is also being used to store and manage transaction data, making it easier to analyze customer behavior and provide personalized recommendations.



Retail

The retail industry is leveraging the synergy between AI and cloud computing to improve customer experience and optimize operations. AI-enabled services are being used to develop personalized recommendations, enable visual search, and optimize supply chain management. Cloud computing is also being used to store and manage customer data, making it easier to analyze behavior and provide personalized recommendations; expected spend to reach over \$30 Billion coupled with AI innovations in Metaverse, personalization, ethics and delivery expected to significantly transform the customer experience.

Cloud strategy with AI and innovation

As businesses continue to leverage the power of cloud computing to streamline operations, reduce costs, and drive innovation, the importance of having a cloud strategy in place has become increasingly clear.

One of the key drivers of cloud strategy is cloud innovation which refers to the development and deployment of new and cloud-based technologies, services, and applications that can help businesses to stay competitive and drive growth. By leveraging the latest advances in cloud computing, businesses can gain a competitive edge by being able to rapidly innovate, scale, and adapt to changing market conditions.

The integration of cloud computing and artificial intelligence (AI) has become a major focus for cloud innovation in recent years. By leveraging AI technologies such as machine learning, natural language processing, and computer vision, businesses can gain insights and automate tasks that were once impossible to achieve at scale. For example, by using AI-enabled cloud services, businesses can automate routine tasks such as data entry, processing, and analysis, freeing up valuable time and resources that can be used to focus on higher-value activities.

Cloud innovation is also driving the development of new and cloud-based services and applications that can help businesses to drive growth and stay competitive. For example, cloud-based analytics services are helping businesses to gain insights into customer behavior, while cloud-based collaboration tools are improving communication and teamwork across the organization. Cloud-based services are also helping businesses to streamline their operations, reduce costs, and improve efficiency.

However, as businesses continue to embrace cloud innovation, they must also be aware of the risks and challenges associated with cloud adoption. These can include issues such as data privacy and security, vendor lock-in, and the need for skilled personnel to manage cloud operations but in the absence of a ready-made skilled workforce, organizations will need to put the right platforms and processes in to develop and train their workforce to manage these technologies effectively. To mitigate these risks, businesses need to develop a comprehensive cloud strategy that addresses these challenges and ensures that they are well-equipped to handle them.

What's next?

The synergy between AI and cloud transformation is transforming the way businesses operate and drive innovation across various domains. The key technologies that underpin this relationship, including machine learning, natural language processing, cloud infrastructure, and edge computing, are enabling businesses to leverage data and gain insights, streamline processes, and drive innovation. AI-enabled cloud services are helping businesses to extract insights and automate tasks, making it easier to scale operations and drive innovation.

By leveraging the latest advances in cloud computing and AI, businesses can gain a competitive edge by being able to rapidly innovate, scale, and adapt to changing market conditions. However, to succeed in the cloud era, businesses must also develop a comprehensive cloud strategy that addresses the risks, challenges, regulatory and geographical requirements associated with cloud adoption and ensures that they are well-positioned to achieve their goals and objectives.

At Infosys Consulting, we help our clients navigate the world of AI and Cloud transformation, let us help you Navigate Your Next.

MEET THE EXPERTS



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Ross has over 25 years of Enterprise IT experience. He started with roles in Engineering and Infrastructure, then moved into Strategic Cloud Consultancy on Azure and AWS. More recently, Ross has focused on complex cloud transformations and Alliances Partner Networks.

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