LTIMindtree

Charting the Course: Top AWS Trends Reshaping Cloud Technology in 2024

As we delve into the anticipated trends for 2024, it is evident that AWS is not merely a service provider but a key influencer in cloud innovation. From the introduction of AI/ML based services to the continued growth of serverless architectures, AWS is at the forefront of driving transformative changes. Let's explore the top AWS trends that are set to redefine the way businesses leverage cloud technologies in 2024.

Cloud agnostic solutions

Business need: Large enterprises are adopting multi-cloud as a strategy to make the best of both worlds, to mitigate the risk of single hyperscaler dependency, and better financial negotiation.

AWS technology alignment: By leveraging AWS's Kubernetes service and Amazon EKS, industrial platforms can achieve a cloud-agnostic approach with cost efficiency and performance benefits. Customer also gets the option of adopting Redhat OpenShift Service on AWS for compute to be truly portable. In the case of databases, AWS is giving multiple native options like RDS – MySQL, Postgres, SQLServer, Oracle, and now DB2. For columnar databases, AWS Keyspace is for those who want to leverage Cassandra. Similarly, in other areas like Managed MQ and Managed streaming (MSK), AWS gives architecture flexibility to build portable solutions across the cloud with minimal or no changes.

Case in point: A multinational travel and meetings program management company headquartered in New York embarked on a journey to exit from 15 data centres across the geography to adopt cloud natively but without tight coupling. LTIMindtree helped customers exit from data centers quickly by migrating the workloads to ROSA on AWS, Postgres for database, and MSK for streaming.

Data management

Business driver: Efficient data management is imperative for IT firms, driven by the need for informed decision-making, regulatory compliance, and cost reduction. Data security, operational efficiency, and scalability are vital components, ensuring organizations can adapt, grow, and maintain a robust foundation for business intelligence and collaboration.

AWS alignment: The efficient, cost-optimal, and scalable AWS services dedicated to data management, such as Amazon S3 for scalable object storage, Amazon Redshift for data warehousing, and Amazon Aurora for relational databases, empower business users to handle data with unprecedented efficiency. AWS provides a pay-as-you-go model, enabling organizations to optimize costs by scaling resources up or down based on real-time requirements. Additionally, AWS offers a suite of analytics and machine learning tools that further enhance data insights and decision-making capabilities.

Case in point: At LTIMindtree, we are building a scalable, secure data and analytics modern data platform on AWS Cloud to support data & insight monetization initiative across career, health and wealth line of buinsess of an insurance customer. This modern platform brings data from disparate sources together, providing a consolidated view of customers and services. In another engagement, we are building a secure cloud modern data platform on AWS and Snowflake to support data & insight for claims data to improve fraud detection, bring operational efficiency, and faster time to market value out of data.

Industry-specific solutions

Business driver: A notable focus is expected on developing vertical-specific cloud services tailored to the unique needs of sectors such as healthcare, manufacturing, and energy. Enhanced data management and analytics solutions will likely play a pivotal role, especially in healthcare IT, providing secure and compliant storage for sensitive health data and facilitating AI-driven diagnostics and telemedicine. IoT integration, mainly for smart manufacturing in Industry 4.0, is poised to advance with improved connectivity, device management, and data processing capabilities. The regulatory landscape's evolution mandates the continued development of compliance solutions, ensuring adherence to sector-specific regulations, with a particular emphasis on healthcare and financial industries.

AWS alignment: AWS is also expected to expand its solutions for industries keen on reducing carbon footprints, such as manufacturing and energy. Supply chain optimization, crucial across various sectors, may see advancements on AWS, offering real-time visibility and predictive analytics. At the same time, a commitment to customization and flexibility will persist to meet the diverse and specific needs of industries utilizing AWS services.

Case in point: The following is a glimpse of a few industry-specific solutions from LTIMindtree.

- **APEX Platform:** We built the APEX platform based on our experience working with multinational consumer packaged goods (CPG) organizations and their last-mile challenge of supply-chain maintenance in developing countries. The APEX platform helps make the right assortment of products available in the right quantity at every store and on every visit.
- **Connected Manufacturing:** LTIMindtree has deployed Connected Manufacturing solution for remote efficiency monitoring for a client that manufactures transmission line towers. The goal was to gain visibility into the operations across multiple factories to analyze productivity trends, handle breakdowns, and perform condition monitoring of machines remotely. We leveraged the powerful insights of our NxT platform for its out-of-the-box connectivity to bring the data to a common destination. Its analytics engine was used to analyze and visualize trends on dashboards for utilization, energy consumption, operation efficiency, etc. The solution helped improve shift productivity by 2.5 hours and addressed challenges related to limited data insights, energy consumption monitoring, cabling complexities, and varying machine automation levels.

Edge Computing

Business driver: Edge computing is gaining popularity due to its ability to process low-latency, real-time data and reduce the need for data transfer to centralized cloud servers. This offers faster response times, improved security, and cost savings.

AWS alignment: AWS offers a range of services that align with the requirements of edge computing. AWS Greengrass enables businesses to run local compute, messaging, and data caching on IoT devices, allowing for real-time data processing at the edge. Additionally, AWS Outposts brings AWS infrastructure and services to on-premises environments, allowing businesses to seamlessly integrate their edge computing capabilities with their existing cloud infrastructure.

Case in point: We are using Quarkus-based Java microservices for one of the leading Japanese multinational automobile manufacturers for handling images captured from cars using IoT and posting and consuming these messages across Message Queuing Telemetry Transport (MQTT) brokers.

AI & ML

Business driver: Artificial intelligence (AI) and Machine learning (ML) are crucial for businesses to enhance decision-making, automate processes, and gain a competitive advantage. By analyzing vast amounts of data, these technologies can provide insights, streamline operations, strengthen and improve customer experiences, personalize marketing, and detect real-time patterns, enhancing efficiency and innovation.

AWS alignment: AWS provides various AI services and tools to enhance decision-making, automate processes, and gain a competitive advantage. These include Amazon SageMaker, which enables businesses to build, train, and deploy machine learning models; Amazon Rekognition for image and video analysis; Amazon Comprehend for natural language processing; and Amazon Bedrock, which hosts high-performing foundation models.

Case in point: We have a homegrown GenAI-based LTIMindtree Genie that accelerates source code optimization and decoding, unit test case generation, code conversion from PL SQL to Java, Spring Boot to Spring MVC, .Net to NodeJs, and more.

Our Retrieval Augmented Generation (RAG) based smart search offering analyses PDF documents and provides insights based on prompts.

Serverless computing

Business driver: Serverless computing reduces complexity and costs in managing servers and infrastructure, allowing businesses to focus on application development without server provisioning or scaling. This results in efficient resource utilization and cost savings, as businesses only pay for actual application usage. It also improves scalability for handling sudden traffic or demand spikes.

AWS alignment: AWS provides services like AWS Lambda, API Gateway, and AWS Step Functions, enabling businesses to adopt serverless computing. These services enable automatic scaling, event-driven architecture, and a pay-as-you-go pricing model, reducing complexity and costs while improving scalability.

Case in point: LTIMindtree helped a government in the Middle East to implement a serverless wage management system using Lambda, AWS Step Functions, and API Gateway, enhancing productivity, accuracy, and cost reduction.

Enhanced security & compliance

Business driver: The handling of sensitive data, cyberattacks, and stricter regulations, particularly in sectors like finance, healthcare, and government, are driving the need for increased security and compliance in businesses to build customer trust and avoid negative legal and financial repercussions.

AWS alignment: AWS provides comprehensive cloud infrastructure solutions for businesses to enhance security and maintain regulatory compliance. Its advanced features, encryption, and access controls protect data from cyberattacks, while compliance programs like Health Insurance Portability and Accountability Act (HIPAA) and Payment Card Industry Data Security Standard (PCI DSS) ensure compliance with industry regulations.

Case in point: At LTIMindtree, the compliance and security aspects are the core of any digital solution we provide for our AWS customers. For one of our customers, a European cosmetics leader, we provided the security architecture designed on the principle of "Defense in Depth" and includes federated authentication, based role-based access control, encryption of data at rest and in motion, anonymization of sensitive data, security assessments, monitoring, and compliance capabilities.

As we conclude our exploration of the top AWS trends in 2024, it is evident that the cloud computing landscape is on a trajectory of continual evolution. With its commitment to innovation, AWS has positioned itself as a strategic partner for organizations navigating the complexities of digital transformation.

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About LTIMindtree

LTIMindtree is a global technology consulting and digital solutions company that enables enterprises across industries to reimagine business models, accelerate innovation, and maximize growth by harnessing digital technologies. As a digital transformation partner to more than 700 clients, LTIMindtree brings extensive domain and technology expertise to help drive superior competitive differentiation, customer experiences, and business outcomes in a converging world. Powered by 82,000+ talented and entrepreneurial professionals across more than 30 countries, LTIMindtree — a Larsen & Toubro Group company — combines the industry-acclaimed strengths of erstwhile Larsen and Toubro Infotech and Mindtree in solving the most complex business challenges and delivering transformation at scale. For more information, please visit https://www.ltimindtree.com/.