



Stories of data-driven success

How leading organizations are increasing business value with an end-to-end data foundation built on AWS



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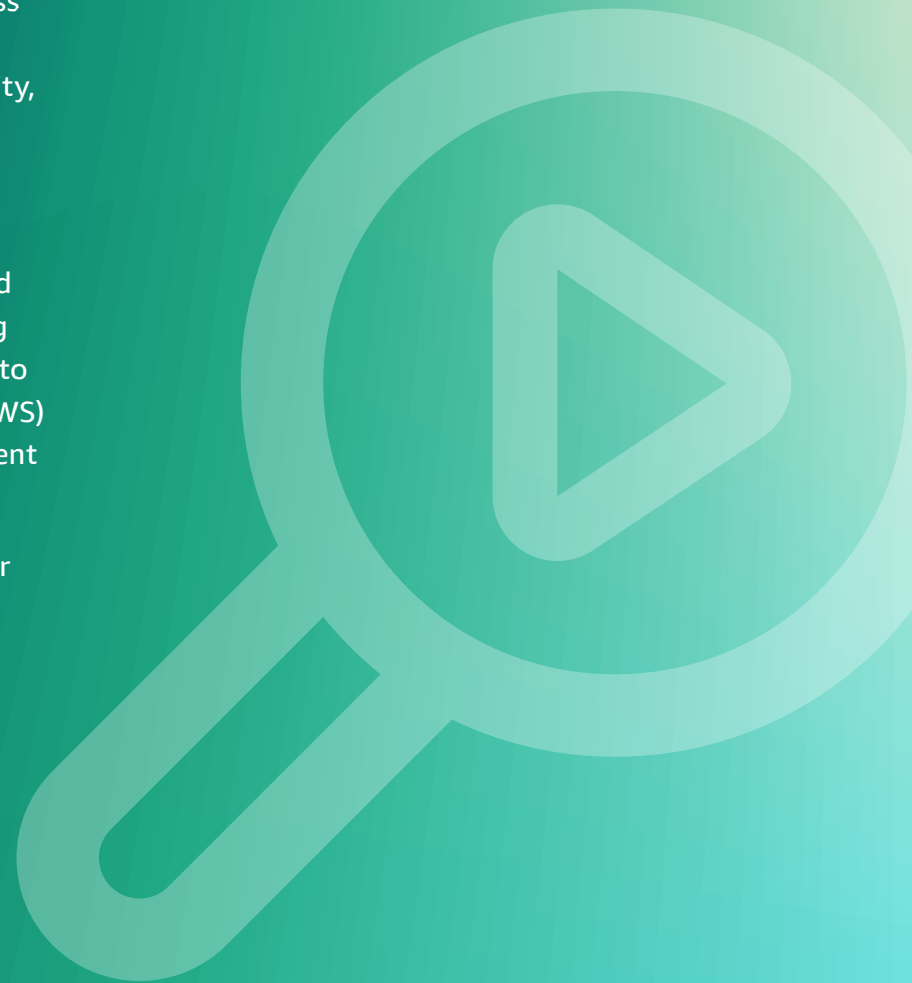
INTRODUCTION

Foster agility and speed innovation with data-driven insights

In today's dynamic landscape, data is the cornerstone of every significant business decision and innovation. Although the volume, velocity, and variety of generated data can seem challenging, it presents an unparalleled opportunity to foster agility, efficiency, and resiliency within organizations. Precise, insightful data analysis empowers teams to rapidly adapt, anticipate customer expectations, navigate competitive pressures, and seize market opportunities.

Building an end-to-end data foundation powered by artificial intelligence (AI) and machine learning (ML) is essential for managing large volumes of data, extracting actionable insights across diverse datasets, and making these insights accessible to the appropriate teams and systems. Collaborating with Amazon Web Services (AWS) equips organizations with a comprehensive, scalable, and secure cloud environment that is fully integrated with an extensive range of data services.

Leading global organizations use AWS and AI to tap into the full potential of their data to inform decision making and strategic action.



DATA FOUNDATION

What constitutes an end-to-end data foundation?

An end-to-end data foundation on AWS offers:

- **Comprehensive services:** AWS offers an extensive array of services and tools designed to meet the needs of virtually any data type, user, or application while offering options for price performance
- **Integration:** AWS facilitates seamless data integration across disparate storage and analytical tools such as AI, allowing for a comprehensive understanding of your business for informed predictions
- **Governance:** AWS provides quick and secure data access governance, driving innovation without compromising data integrity

In this lookbook, you will find stories of how our customers have used AWS and our comprehensive range of scalable, secure data services to drive innovation, speed up technology transformations, and adopt advanced analytics tools such as AI.





The BMW Group drives innovation to transform the automotive industry

About BMW Group

The BMW Group is a German multinational manufacturer of luxury vehicles and motorcycles.

Challenge

BMW's existing on-premises data lake struggled to scale with the increasing volume of data generated by 1.2 million vehicles, hindering the development of new services. Data was distributed across multiple siloed environments, complicating access and slowing down innovation. This setup made it difficult for BMW to use its data for predictive analysis and real-time insights, which was crucial for improving customer experiences and operational efficiency.

AWS solution

BMW rearchitected its data management approach by moving its on-premises data lake to the AWS Cloud, creating the Cloud Data Hub (CDH). This strategic move enabled the company to process and combine anonymized data from vehicle sensors and other sources at scale, making it easily accessible for both internal teams and customer-facing applications. The solution used AWS data services to reduce complexity and support scaling according to the needs of data engineers and analysts.

Results

The transition to AWS has significantly improved BMW's ability to innovate and develop data-driven IT solutions. The company now processes 10 TB of data daily from 1.2 million vehicles, supporting the creation of a voice-activated personal in-vehicle assistant and deriving real-time insights from vehicle telemetry data. With the scalability and serverless architecture of AWS, BMW can independently scale its operations, focusing on creating new digital and connected experiences without the constraints of infrastructure management.

AWS services used

Amazon Athena

Amazon Data Firehose

Amazon SageMaker

AWS Lambda

AWS AppSync

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Salesforce modernizes how organizations interact with customers

About Salesforce

Salesforce provides cloud-based applications for sales, customer service, marketing, and more to help businesses connect with their customers.

Challenge

Salesforce wanted to solve a common issue its customers faced: the overwhelming competition for consumer attention that results in cluttered inboxes and irrelevant marketing content. It recognized traditional reliance on fragmented data sources such as cookies, third-party data, and siloed first-party data hindered the ability to deliver consistent, advanced content targeting with personalized experiences at every customer touchpoint.

AWS solution

To address this challenge, Salesforce developed Data Cloud on AWS. These tools were designed to consolidate consumer touchpoints into a single customer profile, enabling businesses to deliver seamless, personalized experiences that adapt in real time to customer behavior and needs. AWS data services allowed Salesforce to innovate rapidly and scale efficiently.

Results

The adoption of Data Cloud has led to significant improvements in how businesses interact with their customers. Companies across various sectors, from large pharmaceuticals to local pizza chains, have seen remarkable benefits, including increased return on investment from personalized marketing efforts. Salesforce became an early adopter of its own product, experiencing enhanced effectiveness in marketing, sales, and ad targeting campaigns.

AWS services used

Amazon EMR

Amazon Simple Storage Service (Amazon S3)

Amazon Relational Database Service (Amazon RDS)

Amazon DynamoDB

AWS DataSync

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Warner Bros. Games develops centralized gaming services platform

About Warner Bros. Games

Warner Bros. Games, the video game division of Warner Bros. Discovery, offers a wide range of gaming experiences across multiple platforms and other entertainment offerings.

Challenge

Warner Bros. Games had the challenge of managing and analyzing vast amounts of data efficiently to improve game development and player engagement. It needed a solution that could scale to support large game launches and use ML for the continuous enhancement of gaming experiences.

AWS solution

Warner Bros. Games used AWS data services to manage and analyze the vast amounts of data generated by its gaming platforms. Recognizing the shift toward free-to-play games, which significantly increase data processing demands, it adopted services like Amazon EMR to activate scalable data storage and processing capabilities. For querying and analyzing player data, Warner Bros. Games turned to Amazon Redshift, allowing for the easy extraction of actionable insights to inform game development and player engagement strategies. Warner Bros. Games also uses machine learning models on Amazon SageMaker to make ongoing improvements to games.

Results

Warner Bros. Games can now scale operations, analyze gameplay data, and improve player experiences. With AWS's infrastructure, Warner Bros. Games manages data events at a rate of 300,000 per second, ensuring performance even during the high-demand periods of major game launches. By integrating analytics data into various business tools, Warner Bros. Games empowers its designers and marketers with direct access to insights about player interactions and game performance. This holistic view helps them make informed decisions that directly improve the gaming experience and foster deeper engagement with game titles.

AWS services used

[Amazon S3](#)

[Amazon EMR](#)

[Amazon Redshift](#)

[Amazon SageMaker](#)

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Natera drives data-driven decisions and speeds innovation

About Natera

Natera is a leader in cell-free DNA sequencing, having processed over 10 million samples in its labs. The company operates in women's health, organ health, and oncology, using data as a key element in its operations from the start.

Challenge

As Natera grew, it faced challenges scaling its data management practices so that it could continue to directly access and use data quickly. The company needed to evolve its approach to data governance, so it could scale and manage complexity and have data remain a core asset for innovation and service improvement.

AWS solution

Natera embraced a transformative approach to data governance with AWS, focusing on decentralization and cultural change to become a more data-driven organization. This evolution involved shifting data management responsibility to application teams, empowering them to generate high-quality data at the source. Amazon DataZone provided a centralized governance framework to manage data access and catalog efficiently. Natera also used AWS Glue for data processing and Amazon Redshift for data storage, ensuring that data remained fit for use, securely managed, and easily accessible to help generate actionable insights.

Results

Natera was able to speed innovation, creating valuable insights for internal use and for its partners. By treating data as a product and empowering application teams with data management responsibilities, Natera improved its ability to generate and use insights, enhancing patient care and research collaborations.

AWS services used

[Amazon DataZone](#)

[AWS Glue](#)

[Amazon Redshift](#)

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How FOX teamed up with AWS for AI-powered sports highlights

About FOX Corporation

FOX Corporation produces and distributes news, sports, and entertainment content through brands, including FOX Sports, Tubi, FOX Entertainment, FOX Television, and FOX News Media Stations.

Challenge

With the digitization and continued advancement of broadcast delivery technology, sports fans expect a dynamic viewing experience. Whether streaming a game live or recording to view on-demand, audiences are increasingly looking for standout elements in the coverage of their favorite teams, from compelling graphics to timely replays and highlights.

AWS solution

FOX built and deployed its new artificial intelligence (AI)-powered Catch Up With Highlights feature ahead of its US broadcast coverage of the FIFA World Cup Qatar 2022™. Leveraging Amazon's open source Media Replay Engine (MRE) framework for automating video clipping and replay generation, alongside AWS infrastructure and solutions, Catch Up With Highlights is an end-to-end solution that can ingest broadcast streams, identify valuable match moments through AI-trained computer vision, and then encode delivery streams with metadata across user devices. The Catch Up With Highlights uses AWS Lambda event-driven serverless compute, computer vision with Amazon Rekognition, Amazon DynamoDB NoSQL database,

then piped into MRE. Live video is quickly delivered to viewers via AWS Elemental MediaConnect, with videos stored in Amazon S3, and Amazon ElastiCache for caching live clips.

Results

The Catch Up With Highlights feature ran seamlessly with minimal human input, continually optimizing the highlight recap video as the game progressed, retelling the game story upwards of 20 times per match with event-driven updates. Ultimately, 731 recap videos were published autonomously across 61 matches. The team plans to replicate the playbook for other sports broadcasts, including MLB, USFL, FIFA Women's World Cup, and football. With AWS already the data foundation of FOX Corporation media workflows, the development team was able to stand up the complex new feature in about eight weeks.

AWS services used

Amazon Rekognition

AWS Elemental MediaLive

Amazon SageMaker

AWS Lambda

Amazon Bedrock

Amazon Titan

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Fannie Mae improves data analytics and efficiency

About Fannie Mae

Fannie Mae advances equitable and sustainable access to home ownership and quality, affordable rental housing for millions of people across America.

Challenge

Fannie Mae needed to modernize its data architecture to support self-service analytics and improve data sharing across diverse business units.

AWS solution

Fannie Mae embraced a forward-thinking strategy by adopting a data mesh architecture on AWS, centered around Amazon Redshift data sharing. This allowed for decentralized data management and domain-specific control, enabling various business units to own and share data autonomously. The solution was further enhanced with AWS Glue for data cataloging and preparation, Amazon S3 for secure and scalable data storage, AWS Lambda for serverless data processing, and Amazon EMR for big data processing. This comprehensive suite of services facilitated efficient, real-time data sharing without replication, providing teams with immediate access to data for analytics and fostering a culture of collaboration and innovation.

Results

The adoption of a data mesh architecture significantly boosted Fannie Mae's analytical capabilities, enabling secure and real-time data access, collaboration across teams, and democratizing access to data. This led to improved operational efficiencies, faster decision making, and a more agile response to market changes.

AWS services used

Amazon Redshift

AWS Glue

Amazon S3

AWS Lambda

Amazon EMR

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Alida fuels scalability and growth with a strong data foundation

About Alida

Alida, a user experience firm, provides organizations with insights by collecting data on their behalf.

Challenge

Experiencing rapid growth since 2020, Alida needed a data foundation that could grow with its growing data needs with data collection from 665 enterprises and over 165 million users. At the same time, Alida also needed to make sure users could access this data while exceeding data security standards and compliance regulations across the globe.

AWS solution

Alida turned to AWS to build an end-to-end data foundation to scale with its growing data volumes and provide data-driven insights and solutions to users. This foundation allowed Alida to offer agile, data-driven insights and solutions through its Total Experience Management platform. Alida integrated generative AI service Amazon Bedrock to efficiently process and analyze large datasets, providing deeper, more nuanced insights into user behavior and preferences. The AI integration improves analytical capabilities, ensuring that the insights provided to clients are comprehensive and actionable.

Results

With AWS's infrastructure and the integration of AI services, Alida spurred its development and scaling processes. Now, Alida can offer new or updated services to its clients every 90 days to respond to market demands. AWS's advanced data processing applications help Alida meticulously cleanse the data collected for its users for compliance with data protection laws and regulations by identifying and appropriately handling sensitive information.

AWS services used

Amazon Aurora

Amazon Redshift

Amazon ElastiCache

AWS Glue

Amazon Bedrock

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Philips activates its data for lifesaving insights at scale

About Philips

Founded in 1891, Philips is a leading health technology organization focused on improving people's health and enabling better patient outcomes across the globe.

Challenge

Philips's customers needed deeper insights from its vast data pools—encompassing medical imaging, patient monitoring devices, and electronic health records—to enhance healthcare delivery.

AWS solution

Using Amazon Bedrock with other AI services, Philips enhanced the Philips HealthSuite Platform, an ecosystem designed to support efficiency and quality. The platform seamlessly connects with clinical-grade smart devices and incorporates an advanced framework for the ingestion, management, and analysis of healthcare data. With AWS data services, including AI capabilities, Philips can provide actionable insights to drive clinical predictions and operational forecasts, enhancing the decision making process in healthcare provision.

Results

Powered by generative AI service Amazon Bedrock, the Philips HealthSuite Platform has become a central hub for consolidating patient records, data from remote medical monitoring equipment, and information from various healthcare organizations. This integration allows Philips to offer its customers scalable insights into clinical predictions and operational forecasts. Philips is able to enhance the functionality and reach of its HealthSuite Platform and advance the development and deployment of AI-enabled tools that support clinicians in delivering personalized and efficient healthcare.

AWS services used

Amazon RDS

Amazon S3

Amazon SageMaker

AWS IoT Core

Amazon Bedrock

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INRIX delivers actionable insights from transportation data with generative AI

About INRIX

INRIX, a transportation data and analytics provider, manages a data lake containing over 50 petabytes of data that it uses to provide transportation information services to clients worldwide.

Challenge

To deliver timely and accurate responses to customer inquiries, INRIX needed a solution to help it harness its massive data reservoir, efficiently process vast amounts of data, and generate actionable intelligence.

AWS solution

INRIX created Mission Control, a generative AI application based on Amazon Bedrock, to provide traffic operation centers with near real-time insights into traffic conditions, causality analyses, and potential solutions. A critical component of the solution strategy, Amazon Bedrock helped streamline the development and scaling of generative AI applications and augment its own data with a wide variety of foundation models from leading AI firms to scale its AI capabilities.

Results

Using AWS, INRIX's Mission Control provided its customers with fast answers to complex questions, such as how roads should be changed to alleviate congestion and minimize accidents, how to determine the ideal location for a new retail store, or even how to mitigate traffic and parking issues. INRIX's solutions are now able to better promote safety and minimize environmental impacts in the global transportation industry.

AWS service used

Amazon Bedrock

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Intuit transforms fintech using data and generative AI technology

About Intuit Inc.

Intuit Inc. serves over 100 million customers with innovations in tax, accounting, and personal finance and features TurboTax, QuickBooks, and Mailchimp.

Challenge

Intuit sought to enhance customer experiences by accurately processing vast amounts of data, offering personalized financial advice, ensuring data security, and using generative AI for a competitive edge.

AWS solution

Intuit's collaboration with AWS focused on cloud migration, AI using Amazon SageMaker, and generative AI with Amazon Bedrock. This helps Intuit operate a data-driven, AI-powered platform, making 65 billion ML predictions and facilitating over 810 million AI interactions annually. Intuit developed GenOS on AWS, integrating GenStudio, GenRuntime, GenUX design system, and specialized financial LLMs for tailored financial advice.

Results

With AWS's support, Intuit introduced Intuit Assist, a generative AI assistant that enhances financial decision making across its products. TurboTax, for example, simplifies tax outcome interpretation, transforming intricate data into clear, actionable insights.

AWS services used

Amazon SageMaker

Amazon Bedrock

Amazon S3

Amazon EMR

Amazon Athena

AWS Glue

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United Airlines improves customer experience with generative AI

About United Airlines

United Airlines, a global airline, embarked on a transformative journey to modernize its passenger service system and enhance the customer experience.

Challenge

United Airlines wanted to update its legacy mainframe systems to a more flexible, scalable, and modern technology stack to provide innovative customer experiences. The airline sought to address the challenges of an aging technology platform and the need for rapid innovation in the competitive airline industry by integrating generative AI and ML.

AWS solution

United Airlines collaborated with AWS, embracing generative AI to enhance its airport operations and customer service. By using LLMs and AWS's powerful cloud computing capabilities, United Airlines introduced an innovative solution. It created a digital twin of airport operations, with the generative AI tool Amazon Bedrock, to help employees access up-to-date summaries on flight information and delays using natural language, helping them resolve operational and customer issues faster. It also built a scalable, fully managed, and MongoDB-compatible database service to enable real-time data validation and synchronization with legacy systems to provide a seamless transition to a modernized infrastructure.

Results

The adoption of Amazon DocumentDB (with MongoDB compatibility), alongside the innovative use of generative AI, has led to significant improvements in United Airlines's operational efficiency and customer service. The new data architecture and AI-driven tools allow the airline to process data quickly to offer scalable innovations and to improve the overall travel experience for passengers. This transformation has also laid the groundwork for future enhancements, including further personalization of customer interactions through generative AI helping United Airlines resolve operational and customer issues faster.

AWS services used

Amazon RDS

Amazon DocumentDB

Amazon DynamoDB

Amazon Bedrock

Amazon S3

AWS Lambda

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CONCLUSION

Improve organizational success by improving business value with data

Adopting a holistic, well-integrated, and properly governed data foundation on AWS can help propel organizations toward greater agility and innovation. AWS's flexible and scalable services that incorporate AI capabilities help reduce operational inefficiencies and lay the groundwork for a scalable data foundation. This approach not only fosters a data-centric organizational culture, but can also unlock real-time intelligence to activate more precise predictions and smarter decision making, helping organizations secure a sustained competitive edge and enhancing efficiency across their operations.

To learn more, visit [AWS for Data](#) >

