Achieving transformative business results with machine learning

How seven leading organizations are using machine learning to resolve key challenges and reveal new opportunities
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Thanks to the rapid adoption of cloud computing, the rise of compute power and data volumes, and the emergence of easy-to-use solutions that require little or no experience, machine learning (ML) is now more accessible than ever. Leading organizations across nearly every industry are leveraging machine learning to achieve positive business results. For many, machine learning has become a core component of their operations. And those investments are paying big dividends: Gartner forecasts that AI-derived business values are projected to reach $3.9 trillion in 2022.

AWS is playing a pivotal role in the advancement of machine learning, empowering its customers to effectively use and derive the most benefit from the technology. These customers span healthcare and life sciences, finance, technology, retail, media and entertainment, manufacturing, and the public sector.

Categorizing machine learning objectives

- Improving customer experience
- Optimizing business operations
- Accelerating innovation

This look book features success stories from AWS customers that have achieved transformative results across these three categories, demonstrating how AWS is enabling powerful machine learning capabilities across a variety of organizations.
Improving customer experience

Many organizations are turning to the intelligent, predictive powers of machine learning to improve customer engagement and enhance customer experiences. If customer services or support are challenges for your business, you’re likely to find practical inspiration in the following three success stories. Read on to discover how Aramex, Discovery, Inc., and the Canadian government are demonstrating the transformative power of machine learning.
Keeping customers moving intelligently

Aramex is a leader in the global logistics and transportation industry. As a publicly traded company on the Dubai Financial Market, Aramex employs more than 18,000 people in 604 locations across 71 countries.

Opportunity

Aramex used AWS technologies via AWS Partner Inawisdom to support a digital transformation by enhancing the customer experience and digitizing the end-to-end shipment journey. “We are shifting increasingly to be an e-commerce company, and our vision is to be an innovative e-commerce provider that provides a revolutionary customer experience,” says Mohammed Sleeq, chief digital officer at Aramex.

Solution

Inawisdom helped Aramex implement a solution that leverages Amazon SageMaker and other key AWS services for predictive analysis to analyze shipment transit times and provide a complete picture of live transit operations in real-time. The solution’s data pipeline ingests 1.2 million rows of customer data into Aramex’s AWS-enabled data lake every 15 minutes and supports more than 1,500 requests per minute. Aramex also uses the solution to improve efficiency in its customer contract center operations.

Results

• Eliminated 40 percent of inbound calls: Aramex has lowered the average processing time for its transit time application from 2.5 seconds to under 200 milliseconds.

• Enhanced the customer experience: By driving new efficiencies through machine learning, Aramex has improved and modernized the overall experience for customers ordering shipments.

• Increased shipping accuracy: Aramex has automated transit time prediction for global logistics and increased accuracy in shipping date predictions by 74 percent.

“Using the AWS-based solution, we are modernizing the entire customer experience by providing a seamless journey.”

Mohammed Sleeq, chief digital officer, Aramex
SUCCESS STORY: IMPROVING CUSTOMER EXPERIENCE

Discovery

Helping viewers find their next favorite show

Discovery, Inc. (Discovery) is a multinational mass media television company headquartered in New York City. Established in 1985, the company now operates multiple television brands, including the Discovery Channel, the Food Network, Home & Garden Television (HGTV), and The Learning Channel (TLC).

Opportunity

Viewer expectations for nearly endless content choices anytime, anywhere, and on any screen are driving business and operational changes for media companies. Discovery seized the chance to help its customers find curated content that matches their specific interests.

Solution

Discovery built a streaming service, discovery+, adding AWS machine learning capabilities to keep viewers engaged. The service uses Amazon Personalize to go beyond rigid, static, rule-based recommendation systems and deliver highly customized and relevant content to customers.

Results

- **Personalized experience:** Discovery has achieved personalized content experiences for individual viewers and now offers a flexible and scalable solution in discovery+ that works with its existing infrastructure.
- **Rapid time to market:** Discovery is able to deploy these solutions rapidly, supporting its desire to deliver content against time-to-market goals.

“Our goal was to build a product with a very fast go to market and a flexible and scalable solution. Amazon Personalize was a really solid fit.”

Haris Husain, vice president head of product and data science, Discovery, Inc.
SUCCESS STORY: IMPROVING CUSTOMER EXPERIENCE

Answering questions with intelligence

Canada’s Public Services Health & Safety Association (PSHSA) provides training, consulting, and resources to reduce workplace risks and prevent occupational injuries and illnesses for the 10,000 organizations in the health and community care, education, public safety, and government sectors, as well as over 1.6 million public sector workers in Ontario, Canada.

Opportunity

As populations continue to grow along with demand for public services, government departments and agencies around the world are exploring new ways to scale service delivery. PSHSA turned to an AI-powered chatbot to better serve clients by addressing their occupational health and safety training and consulting questions.

Solution

PSHSA worked with AWS Partner Qalius to implement the AI chatbot, which was configured using Amazon Lex, a service that allows for highly engaging user experiences and lifelike conversational interactions. The solution connects to other PSHSA systems to access up-to-date information. The chatbot directs website visitors to the information they need and allows PSHSA’s client experience team to focus on high-priority requests.

Results

- **Reduced customer wait times:** By providing simple answers to common questions, PSHSA was able to significantly reduce wait times.
- **Provided critical info quickly:** After the COVID-19 outbreak, the chatbot was able to efficiently respond to the growing number of incoming requests—resolving one of every three inquiries.

“The chatbot provides efficient support to our clients, but it has also been an exceptional help to our client experience team, whose workload has increased significantly since the onset of the pandemic.”

Glenn Cullen, chief executive officer and chief operating officer, PSHSA
Use cases & solutions for customer experience

**Personalization**
Amazon Personalize
Amazon SageMaker

**Contact center intelligence**
AWS Contact Center Intelligence (AWS CCI)
Amazon Connect

**Media intelligence**
AWS Media Intelligence (AWS MI)

**Build, train, and maintain machine learning models with Amazon SageMaker**

Organizations that want to develop their own use cases can execute against any of the above use cases with Amazon SageMaker. The end-to-end service provides pre-built models and purpose-built tools for every stage of machine learning development.
Optimizing business operations

With its ability to process massive amounts of data quickly and intelligently, machine learning can help organizations streamline operations, automate processes, and predict business outcomes. This can help improve productivity and augment team capabilities. The following success stories from Anthem and ENGIE demonstrate how core business operations can be optimized by the power of machine learning.
Enabling intelligent claims processing

Enabling intelligent claims processing

Opportunity

Solution

Results

“We hope these kinds of technologies will help us...move Anthem to a digital-first organization.”
Achieving predictive maintenance for power plants

Opportunity

ENGIE is a key player in low-carbon energy production, distribution, and services on a global scale. ENGIE wanted to develop, train, and deploy predictive maintenance models in order to anticipate breakdowns and malfunctions of equipment within the group’s power plants and for its customers—while keeping control over the allocation of resources and costs. It also wanted to be able to stay up to date and benefit from the latest technological innovations to guarantee the industrialization and scalability of its models.

Solution

ENGIE chose AWS architecture and Amazon SageMaker for their ability to scale, as the company needed to deploy predictive maintenance for several thousand pieces of equipment in operation, each with several dozen models.

Results

- **Security**: The compartmentalization of training tasks enables ENGIE's customer data to remain isolated, leading to higher levels of security.
- **Cost control**: Training its models on Amazon EC2 has helped ENGIE save up to 90 percent on its compute costs.
- **Predictive maintenance**: ENGIE plans to implement predictive maintenance for more than 1,000 pieces of equipment by 2023.

“Amazon SageMaker is a key service for us. The advantage of using it is that we don't have to reinvent the wheel and can rely on a service that works and provides us with stability.”

Bastien Murzeau, chief technology officer and tech lead, ENGIE
Use cases & solutions for optimizing business operations

**Intelligent search**
Amazon Kendra

**Intelligent document processing**
Amazon Textract
Amazon SageMaker
Amazon Comprehend
Amazon Comprehend Medical
Amazon Augmented AI (Amazon A2I)

**Fraud detection**
Amazon Fraud Detector
Amazon SageMaker

**Business metrics analysis**
Amazon Forecast
Amazon SageMaker
Amazon Lookout for Metrics
Accelerating innovation

Organizations also leverage machine learning to help accelerate innovation across their products, services, and applications. This can enable your team members to accomplish more—regardless of their machine learning skill level—while driving efficient resource management and helping to keep costs low. Read on to discover how Intuit and Amazon Robotics are leveraging machine learning to achieve transformative results across their organizations.
SUCCESS STORY: ACCELERATING INNOVATION

Intuit

Saving customers thousands of hours of time

Intuit is a global financial platform company that helps customers manage personal, business, and tax finances through products like TurboTax and QuickBooks.

Opportunity

Intuit wanted to apply AI/ML to revolutionize its business and further its goal of helping consumers and small businesses improve their financial lives.

Solution

Cloud-based machine learning has been instrumental in accelerating development of the Intuit platform, and Amazon SageMaker has been a core element of its machine learning strategy. Intuit uses AWS services for model development, training, and hosting and integrates its own capabilities for orchestration and feature engineering.

Results

- **More models developed faster:** Intuit has dramatically shortened its model development lifecycle, helping the company increase its number of models in production by 50 percent in just one year.
- **Time savings for customers:** Intuit has saved its customers over 25,000 hours with AI-powered self-help and over 1.3 million hours of receipt processing.
- **Accurate forecasting:** Intuit can now better predict the ability to pay back a loan, resulting in 10,000 approved loans to small businesses in need—65 percent of which were considered not lendable elsewhere.

“Together with AWS, we’ve made great strides in driving AI/machine learning innovation with speed, helping us deliver smarter products faster to more than 50 million consumers, small businesses, and self-employed customers around the world.”

Marianna Tessel, chief technology officer, Intuit
Enabling machine learning inferencing at scale

Amazon Robotics develops sophisticated machinery and software to optimize efficiency in Amazon fulfillment centers.

Opportunity

As a purveyor of cutting-edge technologies, Amazon Robotics has long known that using artificial intelligence and machine learning to automate key aspects of the fulfillment process represented extraordinary potential gains—so in 2017, it devoted teams to accomplishing just that.

Solution

As the company iterated on its machine learning project, it turned to AWS and used Amazon SageMaker to create solutions. Looking to reduce time-consuming bin scanning, Amazon Robotics built the Intent Detection System, a deep-learning-based computer vision system trained on millions of video examples of stowing actions.

Results

• Easier management: Amazon SageMaker freed the Amazon Robotics team from the difficult task of standing up and managing a fleet of GPUs for running inferences at scale across multiple regions.

• Cost savings: The solution saved the company nearly 50% on machine learning inferencing costs.

• Greater productivity: Using the machine learning-powered solution, Amazon Robotics unlocked a 20% improvement in productivity.

• Scalability: Amazon SageMaker enabled the system to scale horizontally during its rollout, and the team is confident it can handle peak inference demands.

“Amazon SageMaker doesn’t just manage the hosts we use for inferencing, it also automatically adds or removes hosts as needed to support the workload.”

Eli Gallaudet, senior software manager, Amazon Robotics
Use cases & solutions for accelerating innovation

Modernizing machine learning applications

Amazon SageMaker
Start realizing your machine learning objectives today

Explore machine learning services and how to get started today.

Accelerate your machine learning journey with AWS