



# Achieving transformative business results with machine learning

How 8 leading organizations are using machine learning to resolve key challenges and reveal new opportunities

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## Business in the age of accessible machine learning

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 ML to achieve positive business results. For many, ML has become a core component of their operations. According to IDC, spending on artificial intelligence (AI) in the United States will grow to \$120 billion by 2025, representing a compound annual growth rate (CAGR) of 26 percent over the 2021–2025 forecast period.<sup>1</sup>

Amazon Web Services (AWS) is playing a pivotal role in the advancement of ML, empowering customers to effectively use and derive the most benefit from the technology. These customers span finance, healthcare and life sciences, manufacturing, media and entertainment, the public sector, retail, and technology.

### Categorizing machine learning objectives

By offering the broadest and most complete set of AI and ML services, AWS is able to meet its customers wherever they are in their ML journey and help them achieve their business objectives. More than 100,000 customers use AWS AI and ML services for everything from enhancing the customer experience and predicting business outcomes to reducing fraud and accelerating innovation.

AWS helps organizations across industries successfully leverage ML across three categories of critical business objectives: improving the customer experience, optimizing business operations, and accelerating innovation.

This eBook features success stories from AWS customers that have achieved transformative results across these three categories using powerful ML capabilities.

## SUCCESS STORIES

# Improving customer experience

Many organizations are turning to the intelligent, predictive powers of ML to enhance customer experiences and improve customer engagement. If customer service and support via contact centers are critical for your business, you're likely to find practical inspiration in the following four success stories. Read on to discover how Wix, Discovery, Inc., the Canadian government, and Segment are demonstrating the transformative power of ML to elevate customer satisfaction scores.





# Building an AI-powered contact center to identify customer sentiment

**Wix** is a leading Israeli software company that provides a cloud-based development platform for building websites. It has over 200 million users worldwide. Thousands of Wix customer care experts support tens of thousands of calls a day in various languages from countries around the world using the Genesys cloud contact center.

## Opportunity

Wix could only evaluate customer sentiment using manual surveys that covered feedback from merely 12 percent of its calls. The company wanted to evaluate 100 percent of their calls to gain insights, such as user sentiment, regarding the company brand, products, or customer interactions. Wix was losing sight of important information crucial to customer success. This is where ML stepped in to solve many of these challenges.

## Solution

Wix developed a sentiment analysis system that can effectively determine how users feel throughout an interaction with customer care agents using the **AWS Post Call Analytics** solution. Wix used **Amazon Transcribe**, a speech-to-text service, to increase customer satisfaction visibility by 100 percent for calls. Wix chose Amazon Transcribe as the top solution for predominant parameters, including accuracy, ease of use, and features for the call center use case (such as PII redaction from phone calls and customer interactions across other channels).



## Results

- **Gained better insights:** Wix transformed its call analysis workflow from a manual survey-based process to a fully automated process powered by ML
- **Improved customer sentiment:** Wix analyzed 100 percent of customer conversations to unlock insights such as sentiment, trending issues, and agent effectiveness at resolving calls
- **Identified areas for business growth:** Using call analytics, Wix has been able to improve visibility for its product managers on how users feel about certain products and features, including negative trends related to specific releases

**Wix used Amazon Transcribe, a speech-to-text service, to increase customer satisfaction visibility by 100% for calls.**



## Helping viewers find their next favorite shows

**Warner Bros. Discovery, Inc.**, a premier global media and entertainment company, offers audiences the world's most differentiated and complete portfolio of content, brands, and franchises across television, film, streaming, and gaming. The new company combines WarnerMedia's premium entertainment, sports, and news assets with Discovery's leading nonfiction and international entertainment and sports businesses.

### Opportunity

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

### Solution

Warner Bros. Discovery, Inc. built a streaming service, discovery+, adding AWS AI and ML capabilities to keep viewers engaged. Discovery+ uses **Amazon Personalize** to go beyond rigid, static, rule-based recommendation systems to 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:** Warner Bros. Discovery, Inc. can 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, VP, Head of Product & Data Science,  
Warner Bros. Discovery, Inc.

# 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 the 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 implemented an AI chatbot, in partnership with AWS Partner Qalius, 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 inquires

**“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, CEO & COO, PSHSA



# Creating custom recommendations to empower customer experiences

**Segment** is a customer data infrastructure company that helps its clients collect and unify their data. Using this data and AWS AI and ML solutions, Segment allows organizations to deliver personalized recommendations that create meaningful customer experiences.

## Opportunity

Segment recognized that many of its customers did not have the data necessary to power and perform personalized recommendations. To meet this need, the company set out to provide a central hub in which to collect, train, and track all data, as well as run an ML pipeline. With this system, Segment helps its clients deliver product and content recommendations based on their customer data.

## Solution

To help run workloads and process over 450 billion events per month, translating to roughly 250,000 requests per second, Segment turned to the power of AWS. Its solution involved using thousands of **Amazon Elastic Compute Cloud** (Amazon EC2) instances and running more than 16,000 Docker containers on **Amazon Elastic Container Service** (Amazon ECS). This data feeds into **Amazon Personalize**, an AWS cloud-based ML service that uses the data to power personalized recommendations, resulting in improved customer experiences.



## Results

- Gained insights from all data across all apps
- Moved fast to propel business growth
- Discovered what customers want and what they are doing
- Translated data into recommendations easily
- Powered recommendations and world-class experiences for customers

**“It’s a beautiful synergy where they can spin up Segment easily from day one and get going collecting all their data. Then, they can use that data to power recommendations without having to build out their own machine learning pipeline using Amazon Personalize.”**

Calvin French-Owen, CTO & Co-Founder, Segment



## Use cases and solutions for customer experience

### Personalization

[Amazon Personalize](#)

[Amazon SageMaker](#)

### AI-enabled contact center intelligence

[AWS Contact Center Intelligence \(AWS CCI\)](#)

[Amazon Connect](#)

### Identity verification

[Identity Verification](#)

[Amazon Rekognition](#)

### Intelligent search

[Amazon Kendra](#)

[Amazon SageMaker](#)

### Prepare data, and build, train, and deploy machine learning models with Amazon SageMaker

Organizations that want to develop their own models 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 the ML lifecycle and even includes no-code tools for business analysts to generate ML predictions.

## SUCCESS STORIES

# Optimizing business operations

With its ability to process massive amounts of data quickly and intelligently, ML 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 Elevance Health and Cargotec demonstrate how core business operations can be optimized by the power of ML.





# Enabling intelligent claims processing

**Elevance Health**, previously known as Anthem, is one of the largest health insurance providers in the United States. The company’s stated mission is to deliver better care to its members, provide greater value to its customers, and improve the health of communities.

## Opportunity

Health insurance companies spend millions of dollars to extract sensitive information from claims forms and accompanying attachments to perform their business operations. At Elevance Health, it took an average of 20 minutes per claim to manually extract this information. To reduce manual labor, the company wanted to automate the process.

## Solution

Elevance Health digitalized and automated its claims process using **Amazon Textract**—an AI service that automatically extracts printed text, handwriting, and other data from scanned documents. Elevance Health chose Amazon Textract for its image processing capability, ability to detect tables and forms, and adherence to security and compliance standards.



## Results

- **Faster claims processing:** Elevance Health can now extract and digitize data to quickly process thousands of claims each day
- **Workflow automation:** The solution automatically indexes and makes text available for batch processing from about 80 percent of forms, and Elevance Health expects to reach 90 percent automation or higher on AWS

**“We hope these kinds of technologies will help us...move Anthem to a digital-first organization.”**

Reddi Gudla, Staff VP, Elevance Health



# Driving sustainable solutions for intelligent cargo handling

Operating in more than 100 countries, **Cargotec** provides cargo-handling machinery and logistic solutions for ships, ports, and terminals.

## Opportunity

Cargotec made a goal to cut its carbon dioxide emissions in half by 2030. To make it happen, Cargotec drives efficiency and sustainability by providing customers with electric solutions as well as collecting data with its Internet of Things (IoT) solution. While aiming for digital transformation of cargo and load handling, Cargotec's mission is to provide smarter cargo flow for better everyday life.

## Solution

Cargotec's data-driven services team built its IoT and data analytics solution using **Amazon SageMaker**—which can be used to prepare data, and build, train, and deploy high-quality ML models quickly—to create models to support data-driven digital services. Using SageMaker and other AWS services, Cargotec turns its data into insights, which has led to more efficient, sustainable, and cost-effective operations.

## Results

- **Improved sustainability:** Cargotec used an ML model to enable customers to estimate operational costs and save on emissions when transitioning to machines like electric forklift trucks
- **Controls costs:** Adopting serverless technologies has helped Cargotec improve cost-efficiency
- **Delivers predictive analytics:** Cargotec data scientists can use ML to access and explore hundreds of terabytes of stored data from their machines

**“Using AWS solutions, we distill information from service data, maintenance data, and equipment-usage data to improve customer operations and provide better uptime for our customer equipment.”**

Pekka Mikkola, Director, Data-Driven Services, Cargotec



## Use cases and solutions for optimizing business operations

### Intelligent document processing

[Amazon Textract](#)

[Amazon SageMaker](#)

[Amazon Comprehend](#)

[Amazon Comprehend Medical](#)

[Amazon Augmented AI \(Amazon A2I\)](#)

[Content Moderation](#)

### Fraud detection

[Amazon Fraud Detector](#)

[Amazon SageMaker](#)

### Business metrics analysis

[Amazon Forecast](#)

[Amazon SageMaker](#)

## SUCCESS STORIES

# Accelerating innovation

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





## Opening the door to open banking

**Frollo** is a purpose-driven fintech on a quest to help people feel good about money. As Australia's first open banking intermediary, Frollo has made over 25 million open banking API calls to date.

### Opportunity

Frollo wanted to enable banks to go beyond their current capacity and develop a real engagement model that provides more money management and budgeting features for customers. The Frollo Data Enrichment API provides data enrichment solutions such as categorizing customer transactions and identifying merchants. This API and supporting ML models sort consumer spending into more than 60 categories, such as travel, taxes, and groceries.

### Solution

Cloud-based ML has been instrumental in accelerating development of the Frollo platform, and **Amazon SageMaker** has been a core element of its ML strategy. Frollo is now running most workloads on AWS, having chosen the platform for its data and analytics capability, built-in security controls, and ML tools. With SageMaker, Frollo's team of data scientists can build their own ML algorithms and retain control over training their datasets.

### Results

- **Improved accuracy:** Frollo achieved a 95 percent accuracy rate for ML models that categorize transactions
- **Better performance for customers:** Frollo enables banks to return credit results in 20 seconds instead of 3–5 minutes
- **Improved security and reduced risk:** Frollo solutions secure product reference data for banks and reduce risk in loan origination

**“With Amazon SageMaker, we’ve never had an issue with application limits or performance. We’re now measuring an end-to-end latency for transaction categorization and merchant identification of 1,500 milliseconds.”**

Tony Thrassis, CIO, Frollo





# 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 AI and ML 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 ML 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
- **Larger cost savings:** The solution saved the company nearly 50 percent on ML inferencing costs
- **Greater productivity:** Using the ML-powered solution, Amazon Robotics unlocked a 20 percent improvement in productivity
- **Enhanced 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, Sr. Manager, Software Development,  
Amazon Robotics





# Machine learning services for accelerating innovation

Amazon SageMaker offers an end-to-end service to build, train, and deploy ML models for any use case with fully managed infrastructure, tools, and workflows



## Make machine learning more accessible

Enable more people to innovate with ML through a choice of tools—integrated development environments for data scientists and no-code visual interfaces for business analysts



## Prepare data at scale

Access, label, and process large amounts of structured data (tabular data) and unstructured data (photos, videos, and audio) for ML



## Accelerate machine learning development

Reduce training time from hours to minutes with optimized infrastructure. Boost team productivity up to 10 times with purpose-built tools



## Streamline the machine learning lifecycle

Automate and standardize MLOps practices across your organization to build, train, deploy, and manage models at scale

# Start realizing the business value of machine learning today

AWS offers the most comprehensive selection of AI and ML services and solutions to solve the most challenging and important business use cases. That's why more than 100,000 organizations use AWS to accelerate their ML journeys.

Explore AWS AI and ML services that fit your business needs—and learn how to get started today.

**Accelerate your ML journey with AWS ›**

