ARC and Wavicle Build Cloud-Based Solutions That Soar with AWS

Executive Summary

Leading travel intelligence provider, Airlines Reporting Corporation's (ARC), successful digital transformation journey on AWS caught the attention of its partner company ATPCO. When ATPCO asked ARC for help with a transformation of its own, ARC turned to AWS Partner Wavicle Data Solutions (Wavicle). Wavicle's expert engineering team delivered a flexible event-driven streaming solution that positions ATPCO to quickly respond to changing customer needs in significantly less time than expected. Based on the success of this project, ARC intends to work with Wavicle on the next stage of its transformation journey—adding innovative AWS solutions like artificial intelligence to its already high-performing system.

Flying Higher, Faster with AWS and Wavicle

ARC accelerates the growth of global air travel by delivering forward-looking travel data, flexible distribution services, and other innovative industry solutions. ARC's comprehensive global airline ticketing database, hosted on Amazon Web Services (AWS), is the largest in the world, holding more than 15 billion passenger flights representing 490 airlines and 230 countries and territories.

ARC's successful move from a legacy environment to AWS was noticed by its partner company, Airline Tariff Publishing Company (ATPCO), a leading provider of airline merchandising and pricing data. Eager to replicate ARC's success in developing more flexible, cloud-based solutions for its customers, ATPCO asked ARC for guidance with its digital transformation.

About Arc

ARC accelerates the growth of global travel by delivering forward-looking travel data, flexible distribution services, and innovative industry solutions.

AWS services used

- AWS Lambda
- AWS Step Functions
- Amazon S3
- Amazon SQS
- AWS Transfer Family

Benefits

- Shortened migration timeline by months
- Created flexible, event-driven architecture that responds to customer needs
- Quickly produced ROI

"While we had expertise based on our work with AWS, we didn't have the engineering bandwidth to take on the full scope of this project," explained Chuck Thackston, managing director of data science and research at ARC. "We contacted Wavicle, and their 10 years of AWS experience shaved months, if not years, off the project timeline."

Turbulence-Free Digital Transformation

AWS Advanced Tier Services Partner Wavicle delivers data and analytics services built on AWS that help businesses turn growing volumes of data into insights that drive successful outcomes. Collaborating with ARC, Wavicle migrated ATPCO's existing sales data exchange (SDE) platform from a 30-year-old legacy system to AWS, converting it to a streaming event-driven architecture that enables flexible and efficient data management.

Wavicle took a phased approach to migration that started with building infrastructure and data pipelines in AWS. The solution leverages AWS Lambda functions that are orchestrated using AWS Step Functions. Most of the data is stored in Amazon Simple Storage Service (Amazon S3), and communication between processes is handled by fully managed Amazon Simple Queue Service (Amazon SQS). "AWS Lambda enabled us to easily embed business logic in the solution," said Thackston. "We're also able to make changes quickly without impacting the entire system."

Reaching New Heights with Wavicle and AWS

The new sales data exchange (SDE) powered by AWS provided ATPCO with a faster and more user-friendly and cost-effective data environment, benefiting both IT teams and business stakeholders. The solution's technical architecture was the key to its efficiency, flexibility, and value.

The implementation uses an infrastructure-as-code model with Terraform, which enables the establishment of infrastructure in AWS whenever it is needed. This eliminates the manual labor involved in duplicating the infrastructure across various environments, thus reducing the time and effort necessary for modifications.

The architecture of the new system also provides flexibility through a three-layer approach that includes raw, standardized, and processed layers. Data from various providers, such as the Global Distribution System (GDS), airlines, and vendors, is easily sourced via the AWS Transfer Family using the Secure File Transfer Protocol (SFTP) server and stored in Amazon S3 buckets for future implementations. A highly decoupled data services architecture is built for each module, including ingestion, data protection, transaction processing, and file delivery, making it easy to scale and extend any service with less effort and overhead. All three data layers provide a strong foundation for various users to explore and build future data products as needed.

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Chuck Thackston
Managing Director of Data Science and Research, ARC

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In addition, the transition from legacy systems to a cloud environment led to significant reductions in operational, maintenance, support, and compute costs. The move also reduced the need for specialized talent to support and maintain the legacy system.

"As a result of this migration to a modern AWS-powered solution, we significantly enhanced ATPCO's ability to quickly respond to changing customer needs and laid the foundation for advanced capabilities like artificial intelligence," noted Naveen Bahatam, associate director at Wavicle Data Solutions.

Jet-Setting Innovation on the Horizon

ARC's partnership with Wavicle on this project set the stage for future work between the two companies. "We learned a lot from Wavicle's engineering team that we'll be able to use to make our systems better in the long term," Thackston said. "They gave us ideas from their work in other industries that we wouldn't have thought of, like ways to make it easier to onboard future customers. When we're ready to do our next project, we'll ramp up again with Wavicle."

Going forward, ARC also envisions more work with AWS, such as adding analytics or reporting capabilities. "By building on AWS, we've established a solid foundation that's produced a very high ROI in a very short period of time," Thackston concluded. "We see some of the great things AWS is doing around AI, and we know our systems will continue to improve over time with their help."

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>
> **Naveen Bahatam**
> Associate Director,
> Wavicle Data Solutions

About AWS Partner Wavicle Data Solutions

Wavicle Data Solutions provides award-winning cloud data and analytics solutions that accelerate value, reduce risk, and empower clients to make smart, data-driven decisions. Wavicle combines deep technical expertise and industry knowledge with proprietary automation tools to support the rapid shift to modern data architectures and real-time insights. With Wavicle, clients accelerate data warehouse and data lake migration timeframes by months, display data visualization dashboards in seconds, and drive real-time decisions when every second counts.