



## CASE STUDY

# Achieving Sky-High Success

American Airlines Cargo identifies additional revenue opportunities through increased accuracy in capacity forecasting

### OBJECTIVE

Maximize revenue by more accurately forecasting capacity and overbooking levels to avoid offloads and capacity spoilage within a narrow booking window.

### SOLUTION

- JDA® Cargo Revenue Optimizer

### REAL RESULTS

- Increased capacity forecast, resulting in significant added revenue each year
- Improved forecast accuracy of available cargo capacity
- Reduced capacity spoilage and offloads

As a division of American Airlines, American Airlines Cargo manages more than 36 million ton miles of freight and mail weekly on approximately 180 wide-body and more than 3,200 narrow-body flights each day. The company provides cargo lift capacity to more than 240 cities in the United States, Europe, Canada, Mexico, the Caribbean, Latin America and Asia. It utilizes the cargo capacity of American Airlines' passenger fleet to facilitate the shipping of many product types, including fresh flowers, fruit, vegetables, seafood and life-saving pharmaceuticals. Its freight customers include some of the largest shippers in the world.

Like most airlines, unless American Airlines Cargo has dedicated freighters, the passenger side of the business determines the network, including the routes, schedules, aircraft types and configurations. To attract cargo clients, American Airlines Cargo must use what is available to smartly calculate the freight capacity available on every passenger flight. This fundamental, yet important, step must also incorporate customer behaviors such as tendering, cancelling and no-show in its calculations. In practical terms, if the capacity is underestimated, there is a risk of having empty space by not selling all available capacity. On the other hand, if the capacity is over-estimated, then there is a risk of incurring offloads and service-level failures. Either scenario results in the same outcome: lost revenue.

### Implementing proven technology to forecast available capacity

Calculating available cargo capacity on a passenger flight is not as straightforward as it may seem. Not only are there obvious factors such as passenger and baggage forecasts, the amount of fuel on board and equipment weight to consider, but there are also external factors such as airport limits on



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**Andy Rubin**

Vice President, Cargo Revenue Management  
American Airlines Cargo

takeoff and/or landing weights or ground-handling capabilities for tight airport connections that have to be taken into account.

However, the most important factor that affects capacity forecasting accuracy is customer behavior. Bookings on passenger flights are often cancelled, amended or under/over tendered at the last minute. Therefore, forecasting customer tendering behavior is a critical factor that needs to be modeled, using overbooking algorithms to predict the optimal adjustments to capacity in order to minimize spoilage or offloads.

A further complication is that capacity is multi-dimensional: weight, volume and position must all be forecast. Dense freight could consume available weight capacity before the volume capacity is filled in the belly of the aircraft. Loose freight may consume volume capacity even before half of the weight capacity is reached, especially for narrow-body aircraft. Similarly, the weight and volume that can be packed into containers and/or pallets for available positions in a widebody aircraft has a material impact on available capacity to sell.

Faced with these challenges, American Airlines Cargo embarked upon a multi-year effort to streamline and simplify the way it does business. A significant part of this initiative was to revamp its revenue management business process and solution. “In an industry famous for its thin margins, every dollar

counts. To ensure that no money was left on the table, American Airlines Cargo needed a system capable of accurately and consistently forecasting the available capacity to sell to minimize spoiled capacity,” said Andy Rubin, vice president of cargo revenue management, American Airlines Cargo. “We chose JDA Software after extensive evaluation of the marketplace and are pleased with the results we have achieved thus far.”

American Airlines Cargo selected JDA Cargo Revenue Optimizer (CRO) to replace its existing technology. The first phase of this initiative was to implement advanced capacity forecasting and overbooking capabilities.

### Delivering significantly improved results

The JDA solution delivers a powerful capacity forecasting and overbooking capability, allowing cargo carriers to predict sellable capacity quickly and accurately in response to changing events throughout the booking window. American Airlines Cargo placed a significant emphasis on measuring forecast accuracy and the benefits of implementing JDA’s CRO.

Forecasts from the JDA solution were compared with those produced by the incumbent system. “In direct comparison, JDA’s solution improved forecast accuracy over the existing system by up to 40 percent in the test runs,” said Dana Hernandez,

senior manager of cargo technology at American Airlines Cargo. “While the volume- and position-level forecast accuracy was approximately 93 percent, the weight forecast accuracy was approximately 82 percent. Both measures show a significant improvement over our existing system.”

To continuously estimate the benefits of the solution, American Airlines Cargo and JDA jointly built a benefits analysis model that calculates revenue improvements resulting from improved forecasting performance. Some of the key variables featured in this model include post-departure actual data, along with the forecasts from the incumbent system. The model showed that JDA’s solution provided more significant improvement in revenue per year. Based on these results, American Airlines Cargo moved the system into production.

### Moving to the future

Throughout the implementation, American Airlines Cargo was impressed by the level of service and attention it received. “JDA was very supportive,” said Rubin. “The JDA team took a partnership approach with us, working closely with our team on the requirements, which resulted in benefits to us. We are now drafting plans for the next phase of the project and are confident that our continued relationship with JDA will yield even further benefits.”



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