



Ensuring Optimal Parts Inventory at Southwest Airlines

Southwest Airlines' legacy system could not keep up with the company's expansion. To ensure that Southwest always has the right replacement parts available at the right time to minimize or eliminate flight delays, the airline implemented i2 solutions. As a result, Southwest has realized increased visibility into demand shortages and expects to further drive down costs in its supply chain.

In the airline industry, getting passengers from point A to point B—on time, all the time—is the ultimate form of customer service. Achieving this tall task requires an excellent maintenance crew and the ability to repair an aircraft quickly and efficiently when necessary.

For Southwest Airlines, maintaining its fleet of aircraft was becoming more and more challenging. As the company grew, the airline's existing legacy system could not keep up with the expansion. With \$325 million tied up in service parts inventory, Southwest recognized that it needed to implement an inventory management solution to increase productivity and enable the company to maintain a high level of customer service.

"We kept bumping up against constraints with our legacy system," said Richard Zimmerman, Southwest Airlines' Manager of Inventory Management. "Our goal is to have 100 percent customer service. There's a significant cost when we have to ground an aircraft because we ran out of a part. The long-term, cost-effective way to solve that problem was to increase productivity and to ensure that our maintenance crews were supported with the right spare parts, through the right software application."



Challenges

- Provide industry-leading customer service
- Keep costs down by increasing productivity
- Support maintenance crews with the right parts at the right time

Solutions

- Utilize "what-if" scenarios for supply chain decision making
- Generate forecasts based on historic and deterministic usage
- Utilize forecasts to generate annual budget

Results

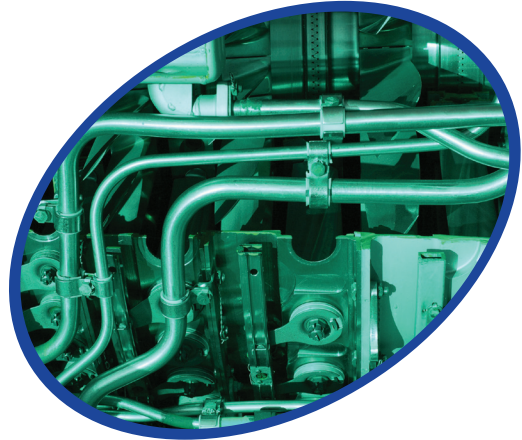
- Increased availability of parts
- Increased speed and intelligence of decision making
- Reduced parts inventory by 10%

Company Description

Based in Dallas, **Southwest Airlines** is a major domestic airline that provides point-to-point service to nearly 60 destinations in 30 states. Southwest operates more than 350 Boeing 737 aircraft and employs 35,000 people. The company records revenues exceeding \$5 billion.

“i2 helps Southwest make sure that we have the right part, in the right quantity, in the right place, at the right time. This will help us lower inventory costs and keep our cost per air seat mile down to the lowest in the industry. Also, the solutions will help us ensure that the maintenance team can quickly repair the aircraft so that our customers experience no or minimal delays.”

***— Richard Zimmerman
Manager of Inventory Management
Southwest Airlines***



Why i2?

Before beginning its search for an inventory management solution, Southwest developed a list of requirements for the solutions provider, ultimately selecting i2 solutions to optimize its fulfillment operations.

“Southwest extensively researched every supplier,” Zimmerman said. “i2 and one of its competitors emerged in virtually a dead heat as far as what they could provide. However, we ultimately selected i2 because it better understood our culture and would be able to work within the confines of our corporate culture. Southwest was very comfortable with the people from i2.”

i2 Service and Parts Management™ (SPM) is designed to enable enterprises to maximize the utilization of parts, people, budgets, and facilities so that they can attain key performance objectives, such as high customer service, market leadership, low operating costs, and profitability.

“In the past, Southwest had to make a significant investment in analysis to determine the cost of moving our service level on spare parts,” Zimmerman said. “With i2 solutions, we’re able to do that by simply running what-if scenarios and conducting very minimal analysis. It’s much quicker and much more cost effective.”

i2’s Contribution

Southwest implemented i2 Demand Planner,[™] i2 Service Parts Planner,[™] and i2 Service Budget Optimizer.[™]

Southwest is using Demand Planner for forecasting all of the part location combinations in its system, Service Parts Planner for replenishment planning, and Service Budget Optimizer for inventory planning. The solutions help Southwest to ensure that the right parts are in stock at the right time, and to significantly drive costs out of its supply chain.

“We pull data from three main areas—our legacy and flight-ops systems, and our home-grown scheduling system—for maintenance production control,” Zimmerman said. “Ninety percent of our information comes from our legacy system, which is primarily a transaction system. We then feed all of the information into the T-MAPI tables for the solutions.”

Southwest is using Service Budget Optimizer to generate a forecast based on historical usage, as well as deterministic usage.

“By creating bills of material and marrying them up to our scheduled maintenance activities, we’re able to come up with a forecast for future use that’s accurate,” Zimmerman said. “It enables us to feel comfortable about procuring additional parts to support maintenance.”

The forecasts that are generated using i2 solutions also will help Southwest to create its annual budget.

“We’ll use the solution to see how we’re doing with our budget on a quarterly basis, and we will also use it to update the budget, because the closer we are to the forecasted time period, the more accurate the forecast,” Zimmerman said. “So, with more accurate and timely information, my budget will be more accurate.”

Southwest Airline’s Results

With i2 solutions, Southwest is better able to keep its planes in the air—where they earn money for the company—and not grounded due to lack of parts.

“i2 helps Southwest make sure that we have the right part, in the right quantity, in the right place, at the right time,” Zimmerman said. “This will help us lower inventory costs and keep our cost per air seat mile down to the lowest in the industry. Also, the solutions will help us ensure that the maintenance team can quickly repair the aircraft so that our customers experience no or minimal delays.”

Southwest also anticipates that i2 solutions will help reduce its inventory levels by 10 percent in the next two years.

i2 solutions' "what-if" capabilities are also enabling Southwest to make faster, more intelligent decisions regarding its supply chain.

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With i2 solutions, Southwest can recognize demand shortages — a level of visibility that the airline did not have with its old legacy system. Additionally, i2 solutions will enable Southwest to focus on increasing productivity.

"We expect to spend less time on conducting research and asking, 'Why am I executing this purchase order or this transfer order?'" Zimmerman said. "The solutions will allow us to spend more time on creating a better plan so that it becomes a self-fulfilling prophecy. The better the plan is, the less likely somebody is going to question it, and therefore, we can execute the plan. That enables employees to be more productive."



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