

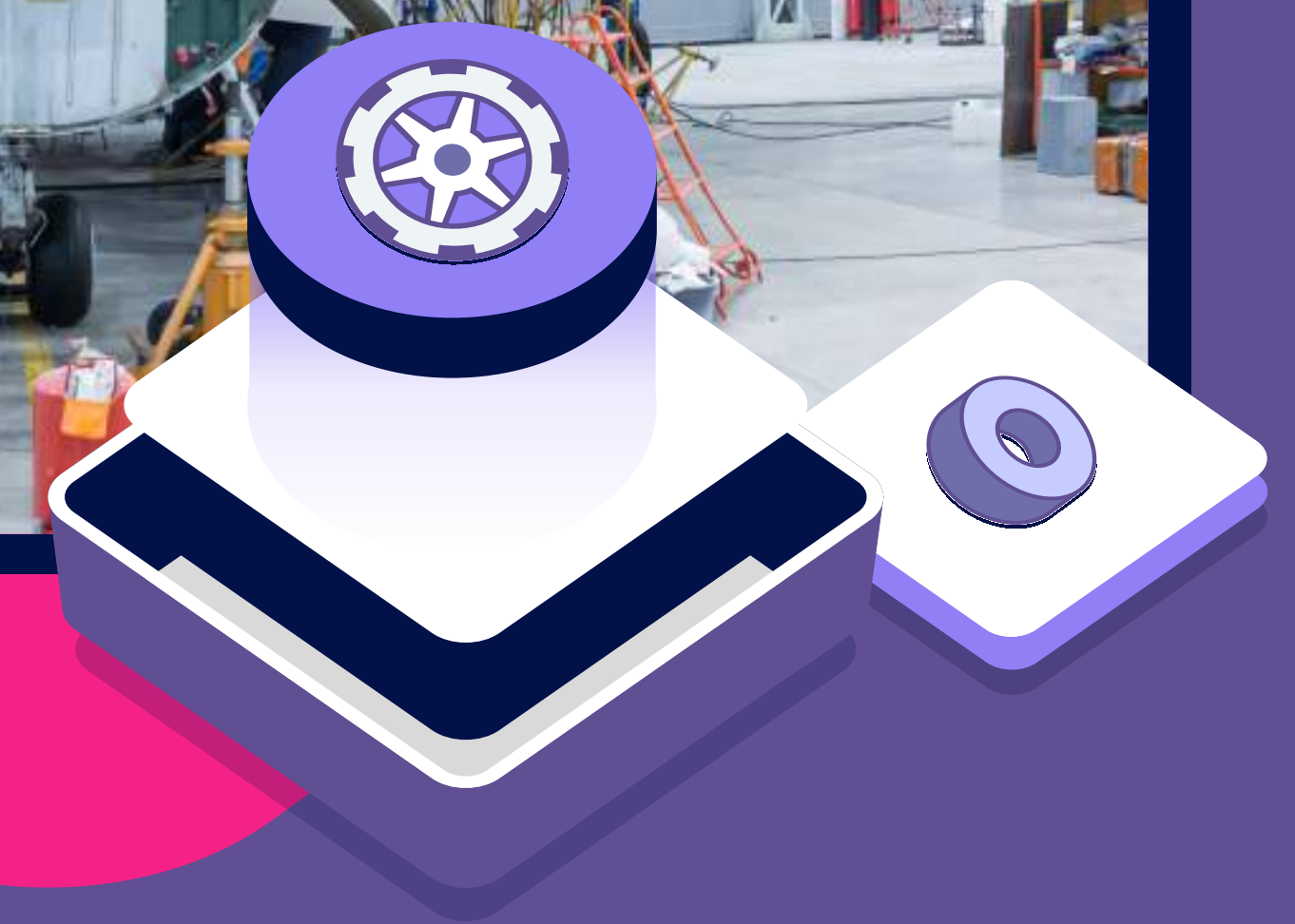


## Case Study:



-  **Industry:**  
Airline, Aviation, MRO
-  **Headquarters:**  
Utah, United States

SkyWest Airlines is a North American regional airline headquartered in St George, Utah, United States. SkyWest operates primarily through partnerships with United Airlines, Delta Air Lines, American Airlines and Alaska Airlines carrying more than 43 million passengers in 2019. With a fleet of 500 planes Skywest connects passengers to more than 220 destinations throughout North America.



# 22%

Out of stock reduced



# 94%

Reached steady 94% Service Level



# \$40M

Yearly spend saving

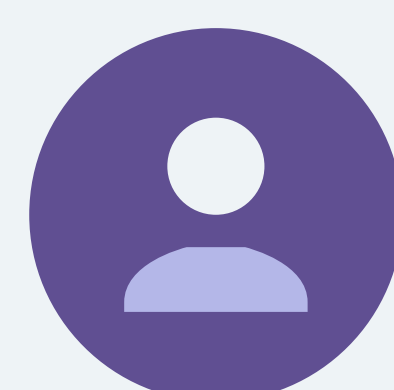


# \$7.31M

worth of repair spend has been deferred



*“Implementing Onebeat, which is based on the Theory Of Constraints, has enabled SkyWest to improve our ability to prioritize the greatest needs and dedicate the resources necessary to solve them holistically”*



Nik Wolford  
Director Supply Chain, Sky West Inc



## — Key Challenges

To ensure a safe and reliable operation, SkyWest relies on a maintenance organization that spans 15 maintenance bases and 10 line-stations across the continental US where SkyWest's maintenance technicians perform a wide variety of scheduled aircraft inspections, maintenance and repair activities. To successfully execute these maintenance tasks, having the right spare parts at the right place is critical. SkyWest's repair facilities use more than 45 thousand distinct parts. Any spare part shortage can result in postponing the maintenance activity to a later date or, in worst case, result in grounding the aircraft until the parts arrives at the location and the repair is completed. Both conditions cause passenger inconvenience and delays.

Since the impact of a parts shortage is so severe (i.e. grounding or delaying an aircraft), there is a constant pressure to increase the inventory of the parts at all the locations. At the same time, aviation parts are in general quite expensive and increasing inventory can be very costly and erode the thin margins that airlines operate. Maximizing parts availability to support operations within budget is a key business challenge for any airline.

This challenge is exacerbated by the fact that spare parts demand is unpredictable and sometimes volatile. As a result, even sophisticated forecasting models, struggle to predict future demand of parts resulting either an over-procurement (which results precious cash wasted that could have been used to buy some other part) or under-procurement (which results in parts shortages that hurt operations). Another challenge is how to distribute the inventory across its various locations. Any error can result in excess in one location with shortage in another location forcing emergency, unplanned transfers between locations.

Given the complexity of operations managing a wide variety of parts across multiple locations and the inherent variation in spare parts demand, SkyWest experienced shortages and surpluses of parts at the same time. This occurs at both the SkyWest enterprise level as well as at the individual locations.

## ✓ The Solution

Rather than relying on traditional spare parts forecasting solutions, SkyWest implemented a FLOW system throughout the supply chain, using Onebeat's Adaptive Inventory Management Solution, in order to synchronize the supply with repair needs. The solution, powered by Theory of Constraints principles, involved the following tactics:

- A Dynamic Buffer Management @ SKU-location (at the bases and warehouses). The system adapts to demand trends and synchronizes the distribution and procurement needs in the supply chain accordingly.
- A frequent procurement process on an SKU basis to fill up inventory targets only when there is an actual need. The buffer system provides a simple color code priority system that enables immediate expediting of non-repairable parts when demand peaks at the bases.
- A periodic inventory balancing process to move excess parts to locations that need them to fill their buffer gap, preventing redundant procurement. In addition, excess of repairable parts are held in a 'dirty' state until needed, deferring the spend of immediate repair.
- Establishing a regional warehouse for high-cost parts to benefit from demand aggregation - shortening lead times with lower inventory holding.

## Results

By implementing the above steps SkyWest achieved improvements in both operational and financial KPIs. The summary below details the quantifiable results of implementation over a period of two fiscal years from the start of implementation:

Out of stock at enterprise level reduced by **22%**.

Unhealthy items at the enterprise level reduced **by 75%**

Service Level Tracking holding steady at a **94% level**.

Saving of **\$18.2M** of procurement spend.

Inventory rebalancing of excess quantities has avoided **\$22.7M** of redundant procurement.

Spend for non-repairable and repairable parts has been reduced year-on-year by **\$24M and \$26M**.

In addition to the above results, SkyWest also experienced an improvement in its overall supply chain management processes: The new process is rules / guidelines driven rather than being ad-hoc and person-dependent. The process allows FOCUS for the supply chain team to zero-in on problem areas. It also allows the team to identify emerging bottlenecks in the process and resolve them. As a result, it has enabled a small but highly efficient supply chain team to manage thousands of parts across this large and complex aviation enterprise.

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