Aerospace Engineering Division Moves Forward with Strategy for Making Data-Driven Decisions

Business Challenge

A division of a global aerospace engineering company intended to improve its ability to make data-driven decisions to support their ever-changing needs for information over the coming years. The lack of data integration and business intelligence (BI) has inhibited the division's strategy to reduce costs and improve agility in design, engineering, manufacturing, and operations.

The division designs, certifies and assembles innovative, custom, ergonomic seats for regional aircraft the world over. Delivering seats on schedule is a vital part of this company's continued success. They are committed to keeping their customers happy by consistently delivering quality "*Seats On Time, Every Time*." If they delay the production of even one of their major aircraft manufacturer customers or deliver defective seats that must be recalled, it is certain to tarnish their reputation and hurt their business.

The deliverables of the Engineering Department are critical to the company's ability to deliver seats on time since the design and building of prototypes is the most time-consuming part of the order fulfillment process. When the company receives an order for a custom-designed or modified seat order (and they rarely receive an order for "stock" seats), timing is of the essence in Engineering.

The key deliverable of the Engineering Department are drawings that inform the manufacturing side of the house what to build and how to build it; thus, they must track drawings very closely. Their 9-point quality assurance queue, designed to inspect and ensure that each drawing covers all that's needed from materials to structural design, is very effective in assuring the delivery of quality products. However, another vital piece of the delivery process is timeliness which requires having information at their fingertips about where drawings are in the queues, as well as the progress of the overall "seat project." This type of tracking is critical to both their Engineering Department and their overall business.

The challenge the company faced was having multiple disparate systems to track different parts of the manufacturing and engineering process, resulting in information silos within groups and systems. Without data integration and business intelligence (BI) they lacked the ability to perform analytics on the daily completion of drawings and to see its impact on their overall portfolio of engineering projects. They lacked key performance indicators, metrics, and analytics needed to provide valuable insights as to when, why, and how projects were getting off-schedule.

MCG Solution

The MCG solution entailed building a data warehouse to integrate data from three key source systems that previously weren't integrated: their Drawing Management, Process Management, and Project Management systems. The data warehouse utilizes an automated intraday incremental load strategy that refreshes key data 5 times throughout the day and pushes key interactive drill-down and drill-through reports to Engineering's leadership and managers. A full refresh is performed at the end of each day. A big win for the company was helping them solve a technical hurdle of getting data from two

on-premises IBM iSeries (AS400) databases integrated with project data on a remotely-hosted SharePoint server. MCG created a self-service BI interface for these users who now enjoy the ability to pull data on individual drawings and their attributes along with higher level project data. The MCG solution is a go-to source for several departments, largely because it is architected to also contain atomic-level integrated data.

Return on Investment

The investment in better management and governing of Engineering data has provided the company with opportunities to create additional revenue, reduce costs, deliver products on time, satisfy customers, and improve agility—moving them closer to an "*engineer anywhere, build anywhere*" capability.