

Mosaic Data Science Delivers Optimized Shipping Solutions for Airfreight Client

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The field of logistics is vast, indeed. Shipping, particularly by air, is a process fraught with potential problems, headaches and hassles for both logistics companies and their clients. [Mosaic Data Science](#) was able to find a solution to one unnamed airfreight client's situation through the use of modern data science techniques.

Who Is Mosaic Data Science?

Mosaic has been in business for well over a decade, and has a significant amount of experience in the logistics sector. However, the company also serves clients in many other industries. While Mosaic's data scientists have experience working with shipping companies, military air traffic clients and civilian companies, they have also worked with banks, clients in the pharmaceutical sector, telecommunications and more. Past clients include the likes of NASA, Lockheed Martin, FedEx and others.

Mosaic takes an interdisciplinary approach to data science. It begins with an in-depth analysis of the opportunity or challenge, and then extends to developing a quantitative business case, presentation and then integrating cutting-edge methodologies, including cognitive science, machine learning, organizational research and more.

The Challenge

The customer in question operates 100 large aircraft with a set, ongoing schedule. Timing is critical for this schedule. Aircraft must arrive at the main hub on time. They must unload their cargo and be reloaded. They must then depart for the next destination. Of course, several issues prevented the company from offering a better customer experience. These included an inability to compress the amount of time between arrival and departure, and the need to avoid common errors and mistakes that resulted in late delivery fees and other setbacks. Those problems included things like ramp congestion, wrong aircraft gate designations and more.

The immediate upshot of these problems was multifaceted. First, the company was experiencing very high costs. Late fees alone could constitute tens or even hundreds of thousands of dollars. The company was also experiencing very high costs in terms of wasted jet fuel due to delays and hurdles. Of course, customer satisfaction was also suffering. As the customer experience declined, repeat business was reduced.

Goals of the Project

The project undertaken by Mosaic had three primary goals. The first was to reduce the number of mistakes made that resulted in delays for the company's aircraft. The second was to ensure that cargo sorting went smoothly and consistently every time. Finally, the company wanted to reduce the amount of jet fuel utilized. Ultimately, Mosaic had to design and develop a decision support system from the ground up for the client.

The Solution

Ultimately, Mosaic was able to develop a decision support system for the aircraft company that offered assistance in several different ways. First, it was designed to give decision makers situational awareness across all areas in question. This included the ramp control center, the ramps themselves and the air traffic coordination group.

Second, it allowed decision makers to replay operations after completion, ensuring they were able to analyze the outcome of decisions made on a case-by-case basis. Essentially, it allowed operators to learn through experience, fostering better decision making capabilities in the future.

Third, it relied on a number of data feeds, as well as a complex algorithm. The algorithm in question was able to analyze information on hand (through multiple data feeds) and make recommendations for shutting down and restarting jet engines. By minimizing the amount of time aircraft engines were left idling, the company was able to significantly reduce its costs in terms of jet fuel consumption. For example, in the past, the company's pilots would have taxied out to a congested runway and then awaited their turn to take off, with the engines running. With the help of Mosaic, pilots now turn off the engines for as long as possible.

Finally, the decisions support system was designed with an advanced, configurable user interface. This allowed each decision maker to tailor the interface to his or her own needs. By offering such customization, the system became an integral part of each decision maker's process, enabling efficiencies across the board and providing a substantially better customer experience.

To date, the decision support system has been in place for eight years, and provided a 24-fold return on the client's initial investment.

Source

<http://www.mosaicdatascience.com/resources/case-studies/optimizing-shipping-operations/>

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About the Data Science Foundation

The Data Science Foundation is a professional body representing the interests of the Data Science Industry. Its membership consists of suppliers who offer a range of big data analytical and technical services and companies and individuals with an interest in the commercial advantages that can be gained from big data. The organisation aims to raise the profile of this developing industry, to educate people about the benefits of knowledge based decision making and to encourage firms to start using big data techniques.

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