

SAP as trusted adviser for Air New Zealand Engineering Services

Fellowship of the Sky



In the 1990s, Air New Zealand Engineering Services replaced its legacy systems with SAP solutions as part of a comprehensive restructuring program aimed at increasing its global competitiveness. Alongside Air New Zealand's implementation of a standardized ERP solution for maintenance, repair, and overhaul (MRO), the long partnership also led to higher productivity and lower operating costs.

The Fellowship of the Ring, the first episode in J.R.R. Tolkien's Lord of the Rings, sees the Hobbit Frodo Baggins and his friends on an arduous journey to free Middle Earth from the evil doings of the Lord of the Rings and his gang of orcs. The whole venture would have been so much easier had Frodo & Co. been able to hop on the next plane and fly to Mordor in just a few hours to complete their quest of throwing the ring into Mount Doom.

Yet there actually is an "Airline to Middle Earth" – albeit better known to air travelers as Air New Zealand. The mystical name is the result of a clever advertising campaign for the second part of New Zealand director Peter Jackson's successful Lord of the Rings film trilogy. As part of a tourism promotion run by Air New Zealand, New Line Cinema, and Tourism New Zealand, an Air New Zealand Boeing 747-400 was emblazoned with imagery from the Lord of the Rings movie trilogy in December 2002 and will serve as a flying billboard for a year.

The "middle-earth jumbo," which will fly about two-and-a-half million miles over the course of the promotion, is maintained by Air New Zealand Engineering Services (ANZES), as are Air New Zealand's other 65 aircraft. And like the airline with advertising, ANZES has broken new ground with airline maintenance; it was one of the first companies in the world to implement

the ERP solution SAP R/3 for aircraft maintenance.

A new engineering structure

The SAP project was a part of a comprehensive program to improve the effectiveness of the Air New Zealand Engineering Operations in the 1990s. In order to remain globally competitive, the airline defined a number of independent business units, which included Engineering Services.

"Our development of the Engineering business unit was about improving the cost effectiveness of engineering services," says Trevor Hughes, Air New Zealand vice president of finance/IT (operations and technical division). After development of this business-unit-oriented strategy, it became clear that two things were required to operate successfully under such a model: a robust system platform, and effectiveness of business management across the whole engineering business.

With this in mind, the search began for a solution to replace the old, fragmented, and high-maintenance legacy system. "After an extensive selection process, SAP won the tender," says Hughes. "We saw it as a product that, from our point of view, was highly credible and would allow us to move forward over a long period of time."

ANZES implemented SAP R/3 release 4.0B plus industry solution SAP Aerospace & Defense 2.0A with the

components Sales & Distribution (SD), Materials Management (MM), Production Planning (PP), Quality Management (QM), Plant Maintenance (PM) including Service Management (SM), Workflow (WF) including DMS KPro, Project System (PS) and Human Resources (HR), Financial Accounting (FI), Controlling (CO), and Fixed Assets Management (AM).

"The scope of implementation was the complete business of ANZES engineering services," says Walter Fiechter, Engineering Services' manager of business solutions. This covered all engineering business processes from the customer inquiry through to invoicing, including financial and supply chain processes as well as full aircraft, engine, and component maintenance, configuration control, maintenance planning (base and line), shop planning, work packaging and execution, reliability, and engineering. "That includes all the engineering services such as technical services design and maintenance engineering," he adds.

Thorough data cleansing

The project took two and a half years to complete – from late 1996 to early 1999. Originally, only two years had been set aside for the software implementation, but because of the huge amount of data in the aviation industry, more time was needed to clean and prepare the data to transfer it to the new system.

■ AIR NEW ZEALAND

Air New Zealand's story began in April 1940 when its forerunner airline, Tasman Empire Airways Limited (TEAL), was incorporated. TEAL began its first trans-Tasman services with flying boats and over the years steadily expanded the size and scope of its operations and the extent of its international network. The route network was expanded from Australia and the Pacific to Asia, the United States, the United Kingdom, and Europe. In April 1965, TEAL was renamed Air New Zealand Limited and continued to operate international services only. In April 1989, the New Zealand Government privatized Air New Zealand through the outright sale of the company to a consortium comprising Brierley Investments, Qantas, Japan Airlines, and American Airlines. In March 1999 Air New Zealand became a full member of the Star Alliance group, which includes United Airlines, Air Canada, ANA, Asiana Airlines, Austrian Airlines, bmi British Midland, Lufthansa, Mexicana, Singapore Airlines, SAS,

Thai Airways, and Varig. It is the world's largest global alliance and provides valuable network and loyalty benefits to customers. In July 2002, Air New Zealand began a fleet-renewal program and confirmed an order for 15 new Airbus A320s. The deal includes confirmed purchase rights on a further 20 aircraft from the A320 family, exercisable over the next ten years. The fleet renewal program will be focused on international short haul routes on the Tasman and South Pacific. In addition to the benefits the Airbus aircraft will bring to the airline, they will also expand the capability of Air New Zealand Engineering Services (ANZES). The current fleet includes Boeing 747, 767, and 737 jets, with the Air New Zealand Link carriers operating ATR72, SAAB 340, and Beech 1900 turbo-props. Airbus A320 twin-jets are to be introduced on trans-Tasman and Pacific regional routes beginning in the second half of 2003.



“We accepted the delay because it was really important to us to have cleansed our data before going live,” says Hughes. However, the solution did create additional work for business units handling change management and led to a slight budget overrun. But Hughes says the benefits were worth the investment. “Without the extra implementation step, we wouldn't have been able to go live in a big bang.”

Although the original plan was to stick to the standard and not modify anything, there was also additional customizing work. “We did try to keep modifications to a minimum,” says Fiechter. The basic functionality was there, but “we had to fill some of the gaps.” Most of the modifications carried out were on functions for maintenance, repair, and overhaul (MRO) and maintenance and engineering (M&E).

ANZES gained a large amount of first-hand SAP knowledge, which has its own advantages, says Fiechter. “Our internal SAP team is able to support all activities from an IT solutions point of view – regardless of whether they are to accommodate new business requirements, fleet management changes, or technical enhancements.” The reward for the extra effort: In March 2003, Air

New Zealand Engineering Services received SAP Customer Competence Center certification.

SAP leads to more business

Alongside close cooperation with SAP, Air New Zealand has worked extensively with other airlines in this area. “Our goal was to develop a generic MRO/M&E solution for our industry,” says Hughes. Now that ANZES has reached that goal, it is in the position of being able to maintain other companies' aircraft in addition to its own fleet of 65. External maintenance currently accounts for over 50 percent of the 2.7 million person hours at ANZES. ANZES wants to expand this segment even further – something that is made possible by the scalability and flexibility of the SAP solution.

Around 2,000 ANZES employees have been using the SAP system for the last four years. The original solution has since been enhanced and cooperation with SAP expanded: In August 2001, the SAP R/3 system was upgraded to release 4.6C and SAP Aerospace & Defense 4.6C1. In December 2002, the system was upgraded to mySAP.com [mySAP.com is now called mySAP Business Suite, *Ed.*].

Hughes' conclusion: “Thanks to the scalable R/3 solution and the flexible, comprehensive support we have received from SAP, we have succeeded in making the engineering business solution a robust, credible systems platform on which to continue to develop and grow the ANZES business.” At the end of the day, he says, this was the basic requirement for supporting the growth of between 20 percent and 25 percent over the last four years.

Employees engaged

Hughes and Fiechter credit the success of the project to the tremendous effort by ANZES employees. An extensive training program was required to prepare for the “big bang” go-live across two maintenance bases and a number of outstations. This training comprised 40 courses with a total of 6,000 training days. “It was a demanding process preparing for go-live,” says Hughes. “After all, it was an extensive change to processes. Additional investment was and is necessary in this area to familiarize users with the system.”

The 42-person support team worked closely together with a group of experts from the various departments to provide the training. “These 150 expert users

shared their knowledge with all the other users,” says Fiechter. This approach proved to be a success in his eyes, even if “you can never over-train!”

To Hughes and Fiechter, there is no question that the effort has paid off. One of the main benefits, says Hughes, is that the legacy system has been replaced by a stable system that enables ANZES to grow as a company. Another plus: A number of legacy systems were replaced by a single, transparent, scalable platform. “We now have a highly-integrated support structure linked with the business,” he says. “We've also seen significant improvements in the cost of ownership and the cost of SAP support since we went live, which has been very positive for the business as well.”

Integration for business goals

Fiechter also sees a huge advantage in having a totally integrated SAP system, especially considering how many international regulations must be adhered to in the aviation industry. “An integrated solution that meets all requirements inspires confidence,” he says. The SAP solution has also enabled ANZES to reach other goals: the realignment of relationships over bases; alignment of workforce and management with

a common focus; exciting new projects including the recent development of a joint venture V2500 engine shop with Pratt & Whitney; the migration of the ANZES solution to its Australian subsidiary, Tasman Aviation Enterprise; the establishment of business forums to tackle process and business problems; and the ability to measure actual labor.

Alongside these achievements, ANZES has been able to reduce its inventory of consumables and repairables. Stock write-offs have been reduced as well as inventory purchasing costs. At the same time, ANZES has increased productivity and reduced turntimes. In Fiechter's view, the solution's only shortcoming is its usability. Because the solution is functionally very rich, he says, it is not intuitive to use, which considerably increases the need for training.

The benefits created by SAP R/3 have led to ANZES becoming a SAP-oriented organization. “I think we are probably one of the purest SAP environments and, from a relationship point of view, we're very committed to working with SAP. Implementation of additional solutions may follow, depending on business requirements. We only implement the systems that make sense for our business strategy,” says Hughes.

ANZES' next steps include evaluation of SAP Advanced Planning and Optimization to replace the long-term planning legacy system. In addition Hughes and Fiechter expect to gain benefits from the mySAP Business Suite. “Solutions such as SAP Business Information Warehouse, SAP Strategic Enterprise Management, and SAP Enterprise Portal are very interesting to us,” says Fiechter. SAP Enterprise Portal, for example, would provide ANZES customers access to the company's SAP solution. In addition, Fiechter wants to enhance the human resources system by adding functions such as employee self-service. It looks as though there will be opportunity for further cooperation between ANZES and SAP in the future.

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