

OAG meets the needs of the global aviation community with a modular new infrastructure.

Overview

■ **Challenge**

With airline requirements becoming more customized and realtime, and with new services opportunities reliant on creative integration of multiple sources of data and languages, nimbleness and adaptability had emerged as critical attributes- which OAG's systems and processes were unable to deliver.

■ **Why Become an On Demand Business?**

OAG needed a solution that would deliver the power, flexibility and efficiency that were prerequisites to process transformation.

■ **Solution**

OAG worked with IBM to design a service-oriented architecture which streamlines and simplifies workload processing and new service development. By reducing the time required to create, customize and process new services, OAG can respond faster to changing needs and new opportunities in new segments.

■ **Key Benefits**

- *Up to 80% reduction in application development cycle, reducing time to market for new services*
- *Faster, more efficient processing facilitates customer decision-making by getting information into their hands faster*



OAG is a global content management company specializing in travel and transport. Privately-owned, OAG employs 450 staff based in Europe, America and Asia, serving business and consumer customers via three regional and nine local offices and an extensive distributor network.

Based in Dunstable, England, OAG (www.oag.com) operates one of the most important content systems in the commercial aviation sector. Its core business is to gather and manage enormous volumes of airline schedule and flight status information. It holds information for 1,000 airlines. Its databases store 1.5 billion records, including data for 27 million planned flight departures for the next twelve months. Historical schedules data is held for the last 9 years. It provides customized outputs that help drive all the world's Global Travel Distribution Systems and e-travel portals. It has a diverse customer base including the airlines themselves,

“Strategically and operationally, we’ve made a quantum leap from being rigid and reactive to being responsive and proactive across our entire business. We see the project as a complete success and a realization of our goal of becoming an On Demand Business.”

– *Simon McKinnon, Chief Technology & Operations Officer, OAG*

On Demand Business Benefits

- 80% reduction in application development cycle, reducing time to market for new services
- 50% to 80% reduction in the time required to customize existing services, thus improving responsiveness to changing customer demands
- 30% reduction in overall IT costs
- More efficient processing and shorter processing cycles, eliminating bottlenecks and improving capacity utilization
- Reduced burden on IT staff resulting from simplified, standardized development processes
- Increased resiliency by virtue of load balancing, failover and automated backup capabilities

“Inbound, there was an absolute deluge of data coming in from airlines and we had no flexibility to streamline the processing workload. Our priorities were less about long-term thinking and more about how to survive the next week.”

—Duncan Alexander, Managing Director Business Development, OAG

which use the data to optimize their schedules, routes and partnering programs. Travelers and travel agents use OAG’s data, guides and applications for travel planning, connection optimization and flight status notification. While the “ecosystem” of travel services providers is large, diverse and growing all the time—with new entrants targeting niche services—OAG stands alone by virtue of the breadth, depth and accuracy of the data it manages and the portfolio of services it offers.

Airline competition creates opportunities...and challenges

For companies like OAG that serve the air travel industry, the intensifying competition among airlines—along with rising customer expectations for service and up-to-date information—has created a vibrant yet demanding market environment. Driven by competition, airlines have embraced a more assertive approach to their day-to-day operations and in their strategies. For instance, to optimize their route efficiency, airlines are now changing their schedules more often to adapt to changes in their passenger volumes. This is reflected in OAG’s systems which receive a new schedule update every ten seconds. During 2005, OAG expects to process over 5 million flight changes, up 60 percent from 2001. A rise in strategic partnerships, designed to increase airlines’ market reach and offer customers more choices, has also fueled industry dynamism.

Under the most common arrangement, known as code sharing, two separate airlines sell tickets on each other’s flights and—in a quirk of the industry—both airlines put the same flight on their schedules, thus magnifying the volume of flight data to be captured, stored and managed by OAG. This growing dynamism and complexity has led to explosive growth in processing demands.

But that’s just the inbound side. Like their customers, airlines have also become increasingly demanding about the way OAG delivers information outbound to them. While OAG had historically delivered airline timetables in hard copy form, the company had long offered its customers electronic delivery. Over time, however, the airlines were increasingly looking for delivery options that were customized to fit their unique data, language or device requirements, and gave them more flexibility to use the data in their operations. OAG now makes over 1,000 individual product productions every month.

Lastly, OAG’s needs were also shaped by its strategic goal of capitalizing on emerging service opportunities in related or complementary content areas. The crux of the plan was to pull in new kinds of travel data, integrate it with its existing content and create a new class of travel-

planning tools. A prime example would involve OAG extending its unique competency in airline schedule data to flight status, which would in turn spawn a host of downstream service offerings. What's more, the opportunity to add airline service connectivity with other modes of transport—like rail, buses and shipping—has also loomed large. This is especially true in Europe, where inter-modal travel is highly developed, and in the cargo sector where such systems do not exist.

OAG realized that its existing systems and processes had neither the robustness nor the flexibility to adapt to the new state of the industry. The most basic problem was that OAG relied on rigid, batch-based systems and processes that had been engineered for a static, predictable world. OAG's most immediate challenge was that the growing deluge of data from airlines was pushing its current system utilization well into the red zone. Relying on entrenched single-line processing resources, OAG was unable to optimize when it was most needed. This rigidity constrained OAG's ability to respond to the new dynamics of the marketplace, which required a highly flexible and efficient ability to create new services. Indeed, with airline requirements becoming more granular, customized and realtime, and with new service opportunities reliant on the creative integration of multiple data sources and languages, nimbleness, efficiency and adaptability had emerged as critical attributes—which OAG's monolithic systems and processes were unable to deliver.

The move to modular processes

OAG saw the need to transform its core processes and had a clear vision of the capabilities it wanted. But to get there, it needed to frame a technology solution that would deliver the power, flexibility and efficiency that were prerequisites to process transformation. To meet this challenge, OAG engaged IBM to design and deploy a modular, standardized platform that employs a service-oriented architecture to streamline and simplify workload processing and new service development. It does this by breaking down the overall processing workload down into approximately 20 small, specialized processing elements. Now, if an airline asks OAG for a customized report, OAG can assemble it faster with greater customisation, improving responsiveness and enabling the more efficient utilization of resources. The same basic principle holds true for new service development. To overcome its major challenge—receiving data with multiple sources and formats into OAG's core processing engines—the solution creates standardized workflows that guide all aspects of the process. With the process simplified and standardized, OAG was able to move tasks like the process scheduling, quality assurance and overall process management from IT to its operations personnel. OAG's main considerations in selecting IBM were first that it could secure the breadth of expertise necessary to implement and second that it would employ established toolsets to enable standardization and simplification. IBM Business Consulting Services, which led the engagement, performed an initial needs study, developed the high-level design of the solution and specified

Key Components

Software

- IBM WebSphere® Application Server
- IBM WebSphere Business Integration Server Foundation
- IBM Tivoli® suite of products
- IBM DB2® Universal Database™
- IBM Workplace™ Web Content Management
- IBM Rational® Software Development Platform

Servers

- IBM eServer™ pSeries®
- IBM eServer xSeries®
- IBM TotalStorage® Enterprise Storage Server®

Services

- IBM Business Consulting Services
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“Using WebSphere Process Choreographer, we now have a very flexible way to combine processing engines together in the appropriate sequence to churn out products very quickly.”

– Simon McKinnon

the tools, technologies and hardware to be used in the solution. IBM Software and Systems Groups assisted OAG in deploying and configuring them. To “modularize” OAG’s core processes, the team employed the process choreographer, a component of WebSphere Business Integration Server Foundation to create and schedule business process workflows. The process components are J2EE applications developed with IBM Rational Rose XDE Developer for Java and running on IBM WebSphere Application Server. The primary engine at the heart of the OAG solution is IBM DB2 Universal Database, which runs its core services, while IBM Workplace Web Content Management is used to maintain Web content. The entire software stack runs on two failover-enabled IBM eServer pSeries p650 servers linked in a SAN configuration to an IBM TotalStorage Enterprise Storage Server. IBM Tivoli software, running on a pair of xSeries servers, provides a full range of infrastructure management functions.

With its core processes transformed end to end, a more flexible OAG is now on a solid footing for efficient, profitable growth. Its modular, standardized approach to new service creation has cut application development cycle

time by as much as 80 percent, making OAG more responsive to its customers’ escalating demands as well as emerging service opportunities. And as business and processing volumes grow, the company can easily accommodate it with an infrastructure whose remarkable efficiency has contributed to a 30 percent reduction in overall IT costs. Increased resiliency—by virtue of load balancing, failover and automated backup capabilities—is another of the solution’s strong points.

Simon McKinnon, OAG’s Chief Technology & Operations Officer, sees the new solution as a turning point for the company—and sees IBM as one of few providers that have the depth and breadth of resources to make it happen: “Strategically and operationally, we’ve made a quantum leap from being rigid and reactive to being responsive and proactive across our entire business. We see the project as a complete success and a realization of our goal of becoming an On Demand Business.”

For more information

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Corporate Marketing
New Orchard Road
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U.S.A.

Produced in the United States of America

7-05

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ODB-0110-00