marlabs
driving digital agility

Galley planning software streamlines airline operations

Client

Our client is the world's leading independent provider of airline catering and provisioning services. They are committed to culinary excellence, exceptional service, and technological capability, which they provide on a daily basis globally to more than 250 airline customers.

Challenge

Meticulous and proficient galley planning is a complicated part of logistics planning and therefore a significant driver of successful in-flight services planning. Galley planning requires extensive technological support.

The client required high tech Galley Planning (GP) software to optimize galley design, loading, and balancing with automatic monitoring of weight loaded and available space. Required functionalities include the creation of tailored galley manuals with customized aircraft, galley, stowage, container, and part layouts. The rich user interface that provides the option to design, load, and publish galley loading directions, and test and balance weights according to government regulations was a key requirement. The software will streamline the galley layout by optimizing the design of the galley area and lowering costs while improving passenger experience.

Galley planning system was also required to manage all the units like parts, containers, fleet (aircraft family, aircraft type, aircraft layout, galley, and stowage), modules, products, and provide world class drawing tools and integrated loading environments. Other significant features included fuel-cost impact analysis, integrated loading environment, task management, equipment balancing, and container labeling. Built-in version management, automatic publishing of packing instructions and on-line communication of changes to the supply chain are other features. The software should be easily integrated with other material planning systems to further increase data accuracy and reduce data-entry duplications.

The system was required to allow the following functional processes:

- Management of all units
- Drawing tool, to allow users to draw the pieces of entire fleet
- Integrated loading environments like galley loading and container loading
- Automated merging and loading of contents based on the rules; service driven loading
- Fuel cost management, task management, and decision support system for airline users to evaluate the changes before adopting
- Flight schedule processing and daily departure board for caterers

The system needed to be a multi-tenant SaaS based Web application accessible to airline users, caterers and support users. Requirement included data and application level security based on the roles of each type of users.

Marlabs Solution

Marlabs was responsible for providing an end-to-end solution for the client and was required to be involved in all application development life cycle activities including requirements gathering, analysis, technical design, construction, testing, and deployment.

The following activities were part of the Marlabs solution:

- Evaluating technologies required and providing the solution using technologies such as Flex, J2EE, Spring, Hibernate, JMS, EJB, Jasper Reports, Oracle Database Server, Jboss Application Server, and RedHat Linux
- Configuring source code repositories (SVN), building management (Ant & IVY), continuous integration (Hudson), and automatic deployment procedures
- Performing Jboss Servers level tuning for various environments and layers
- Providing hardware sizing/requirements based on proposed load for 2011/2012 and providing the scalability matrix for the future loads

High level architecture of the system was as follows:

- Hardware load balancing configured to route the load on to Apache Cluster
- All the static contents like SWF files, images, HTML files and JavaScript files are served by the Apache Cluster
- All the dynamics for the synchronous calls will be served by a cluster of operational servers
- All the heavy duty/processing jobs are processed by the Cluster of Batch Servers; internal communication is enabled through Java Messages and Java Message Driven beans
- The entire queue, Web services, and schedulers are processed through a cluster of integration servers, which also serve as a bridge between operational and batch layers
- Data will be managed through cluster of Oracle servers using Oracle 11g Rack

As a part of implementing the core functionalities of the project, Marlabs has also developed the following key components and frameworks:

- Flex based drawing component and custom grid
- J2EE based Search Framework, which is integrated into the application
- Jasper based custom reports framework

Benefits

The project was delivered on time. The application went live on the planned date of 6 January 2011. The application implementation was considered a major success for both Marlabs and the customer. The launch was followed by a rolling out of the solution to leading airline customers worldwide like LAN Chile, Singapore, British Airlines, Qantas, and Emirates.

Technologies

- JDK 1.6, EJB 3.0 (MBD), Hibernate, Spring (MVC, IOC, AOP, ORM, Batch)
- Flex 3.4, Action Script 3.0, Cairngorm, BlazeDS, Spring-Flex
- Jasper Reports, Quartz Scheduling
- Hornet, DPHibernate, ANT, IVY, CSS, Log4J
- Eclipse, Flex Builder, SVN, ANT, IVY, Hudson, NeoLoad, QTP, JIRA
- Jboss 5.1, Apache Server 2.0, Oracle 10g/ 11g

Marlabs *helps drive digital agility for our clients. We deliver innovative business solutions using digital technologies such as cloud, mobile, analytics, Internet of Things, and social. With a dedicated team of over 2,100 associates, a network of delivery centers in USA, Canada, Mexico and India, and strong partnerships with industry leaders, Marlabs offers a wide range of IT services across industries. Through our emphasis on quality driven by CMMi, PCMM, ISO 9001-2000, ISO 27001 and SSAE 16 Type II best practices and a customer-centric client engagement model, Marlabs has achieved a dependable track record of meeting high standards of excellence in every customer engagement. This has resulted in several awards and recognitions, including being consistently ranked in the Deloitte Technology Fast 50 and Fast 500 programs. Marlabs is headquarted in New Jersey, United States.*

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