



Case Study

Sonata builds an Airline Cabin Services Management System to enhance the service levels of cabin crew

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Due to high competition, it is imperative for Airlines to provide high-quality services, with ever-increasing efficiency, to all their stakeholders, in order to strengthen their position in the marketplace. The customer, the fastest growing Airline in the Middle East, in its quest to become the best Airline in the world embarked on a new IT initiative -- development of a 'Cabin Services Management System.' The objective of this system was to resolve most of the challenges faced by the airline's cabin crew division, with the objective of improving quality of services for their customers i.e. passengers.

Customer Profile

The customer is one of the fastest growing Airlines in the Middle East. It currently operates a modern fleet of 91 Aircrafts to 94 diverse business and leisure destinations across Europe, Middle East, Africa, Asia Pacific, North America and South America. The carrier has experienced double digit growth year on year and is ranked the third best in the world. The Airline holds a string of accolades cementing its status as a high quality and service-oriented global carrier.

Business Scenario

The cabin crew that typically forms 40%-50% of the entire Airline workforce plays a very crucial role in the success of an Airline. Effective management of this young, dynamic and "always on the go" workforce is absolutely necessary to ensure clear and effective inter departmental communication thereby facilitating passenger satisfaction.

As the Airline is experiencing extraordinary growth, there are numerous IT projects underway to meet its growth plans and business demands. To streamline the processes and overcome operational challenges, the Airline envisaged the need for full fledged automation of



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Key highlights of the solution:

- Highly scalable architecture, with a response time of less than 10 seconds for complex advanced search and the capability to handle 100+ users concurrently
- Well managed feature-based releases, test-driven development, and continuous automated build and test processes through the use of Agile Development methodology
- Enhanced code re-usability across sites to facilitate maintenance activities
- Enhanced security and lower cost of license through the use of .NET technologies

Business Benefits

Thanks to Sonata's engagement, the customer was able to achieve the following business benefits:

- 15-20% increase in Productivity
- Advance Search helped in reducing response time from 60/90 minutes to 10 seconds
- 25-30% of Cost Savings in less usage of paper, manual paper movement, fax, stationery, real estate and manpower
- Single Windows-based application to track crew performance, flight reports and crew behavioral issues
- Efficient tracking of issues related to Voyage Reports and Maintenance of cabin crew
- Seamless business process integration across departments through interfaces
- Quick access to crew-related data due to features like advanced search
- Real time alerts, news and updates for immediate action

cabin crew-related business processes so as to improve information flow, enhance efficiency as well as reduce costs. They also believed that inculcating a sense of collaboration and camaraderie among the crew members will help improve the standard and quality of services offered to passengers. The Cabin Crew Services Management (CSM) involves dealing with a large, remote and diversified work force, massive amount of Data Processing, Crew Recruitment, Training, Operational Planning, Schedule, Roster, Performance and Behavior management and Voyage Reporting.

Solution Delivered

Sonata developed a solution called Cabin Services Management System (CSMS) for the Airline, which aimed at enhancing the service levels of the cabin crew and departmental staff by helping them improve their inter-departmental communication. The solution also helped the management make better, informed business decisions. The system included modules for Voyage Reporting, Performance and Behavior Management, Grooming and Global Management. It provided a highly intuitive and personalized user interface that helped users organize their daily activities.

Some of the extensive features of this system include tab based functionalities, system and user alerts, news updates, access to Leave and Roster details, analysis of Performance and behavioral trends, Training, Career Development, Crew Notes, delegation of tasks to users, and advanced crew search facilities enabling faster access to crew profiles.

The solution integrated with various other systems at the customer location -- such as Airline Operational System, Flight Information System and Human Resources Management System -- to retrieve useful data to process cabin crew-related activities. The implementation of CSMS provided a cost-effective solution over existing ERP solution.

Sonata offered the following services to the customer:

- Requirements Elicitation and Analysis
- Solution Architecture & Design
- Development
- Performance Tuning
- Maintenance and Support

The cabin crew could access the system via a Web interface whereas the cabin services department and other administrative staff could access it through a Windows-based application. The choice of both Web and Windows applications was a key design consideration towards achieving scalability, extensibility, maintainability, performance, security and usability.

The Cabin Services Management System was built using the Microsoft® .NET Framework 3.5, taking advantage of the Windows Presentation Foundation (WPF), Windows Communication Foundation (WCF) and Windows Workflow Foundation (WWF) for creating highly effective, rich and intuitive interfaces. The system adopted a Service-Oriented Architecture (SOA). The application data was supported by Oracle 10g database.

Architecture

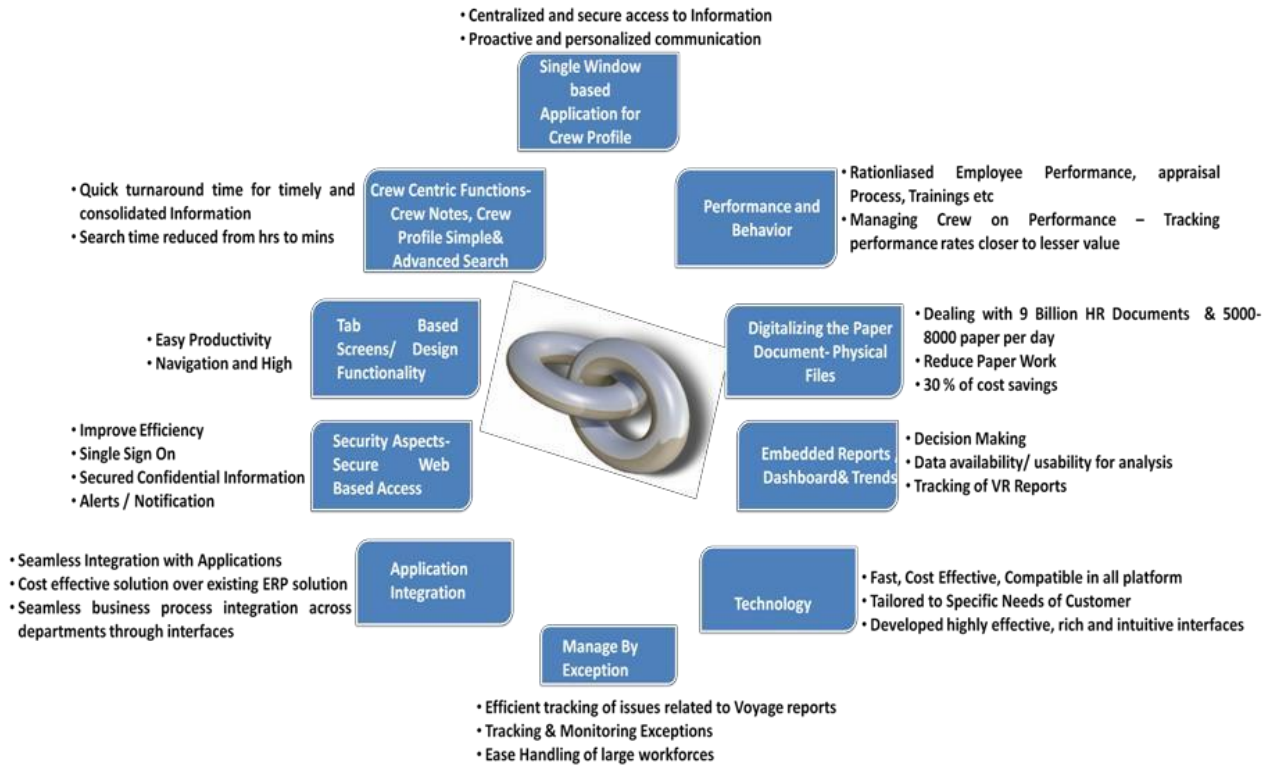
The application followed SOA pattern and comprised the following layers:

- **Presentation Layer (Web & Window):** Presentation layer consisted of set of ASPX pages / WPF forms.
- **Service Layer (WCF):** Service layer was developed using WCF and consolidated the best features of Web services, Remoting, Microsoft Message Queuing (MSMQ), System Messaging and Microsoft Enterprise Services. Its other benefits included that it was developed using managed code, and used the power and features of .NET 2.0.
- **Business Layer:** Business layer components implemented business rules and the process flow of application. Business components used basic business rules exposed by Domain Model components of the Data layer.
- **Data Access Layer:** Data Access Layer interacted with the database of application data. The Data Access block of Microsoft Enterprise Library was used in conjunction with the ODP.NET driver for interacting with the Oracle database.
- **Enterprise Integration Layer:** Enterprise integration layer includes a set of classes for communicating with external systems like Flight Operational System, Flight Schedule Service, RSA and Oracle HRMS

Tools & Technology

- **Development platform:** C#, ASP.NET 2.0, .NET framework 3.5, Visual Studio 2008, Infragistics controls.
- **Operating System:** Windows 2003 server for applications and Redhat Enterprise Linux (RHEL) for database
- **Database:** Oracle 10g

The image below depicts functional and technical aspects of the solution and highlights the business benefits:



For more information, contact info@sonata-software.com

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