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<http://www.intellias.com/projects>

## iB2C – Integrated Business to Consumer Platform

### Business Challenge

balina.joppich.at Handels GmbH, a company that retails formal evening wear offering the widest range of products on the German-speaking market, had three objectives:

- 1 To develop a Customer Relationships Management system that would allow providing their clients with information on sales, services and products
- 2 To build an information portal for individuals interested in Vienna balls and similar events. Creation of this type of community would enable the client to eventually offer its services and products to the target group
- 3 To build CRM and B2C frameworks that could be installed and customized to other businesses and target markets

### Technology Behind

At the project inception, Intellias specialists ran a technology evaluation. In particular the following platforms were analyzed:

- ▶ Microsoft .NET
- ▶ J2EE
- ▶ ColdFusion

Based on detailed analysis of the client's business requirements, Intellias software architects recommended Microsoft .NET platform as the most appropriate technical solution. Microsoft .NET platform provided all the necessary interfaces and components for a full solution to be developed. The project was started with .NET Framework 1.0,

and after official release of .NET Framework 1.1, the project migrated to the new release. MS SQL Server 2000 on MS Windows Advanced Server 2000 is used as a database backend. Use of a set of 3rd party components and libraries allowed to add more functionality to the system cutting down development costs.

### Technology Stack

- ▶ ASP.NET
- ▶ C#, C++
- ▶ MS Visual Studio 2005
- ▶ HTML/DHTML, XML
- ▶ ADO.NET
- ▶ .NET Remoting
- ▶ MS SQL Server 2000
- ▶ 3rd party components

### CASE Systems Used

- ▶ PowerDesigner DataArchitect 6
- ▶ Rational Rose 2000
- ▶ TestTrack Pro 7
- ▶ Surround SCM 3.x
- ▶ MS Visual SourceSafe
- ▶ MS Project 2000
- ▶ MS Visio 2000
- ▶ INTEMS

### Long-term Benefits to the Client

#### ▶ Reliable product development through long-term partnership with Intellias

To mitigate the risks associated with the outsourced software development, the client started the project with development of a few minor modules for his legacy system developed in DBase. Intellias has proved to be a reliable and competent partner, and the cooperation was constantly expanding, ending up with complete re-engineering of the existing software systems and development of a range of new modules and systems.

#### ▶ Additional revenue from other businesses

Being optimally designed, the system allowed the client to build several upcoming projects based on it. Few of them are Vienna Balls Calendar, Supply Chain Management system, Online Shop with cashier integration module, Aircraft Reservation System with online invoicing and flight logging modules. The client aims at getting additional revenue from customization of the iB2C platform for other businesses.

#### ▶ Costs savings by effective management of customers relationships

Intellias has built and delivered to the client a web based system using which the company effectively manages relations with its customers and runs marketing campaigns. Customers' base constantly grows as the system implements continuously increasing number of services.

#### ▶ Analytical information for business improvements

Access, events and activity statistics module allows the client to analyze customers' behavior and to make appropriate business decisions based on analytical information gathered and pre-processed by the system.

#### ▶ Mature and cost effective production support by Intellias team

After 3.5 years after the first version of iB2C went live, post-production support and maintenance run by Intellias locally and remotely, cuts down maintenance costs for the client.



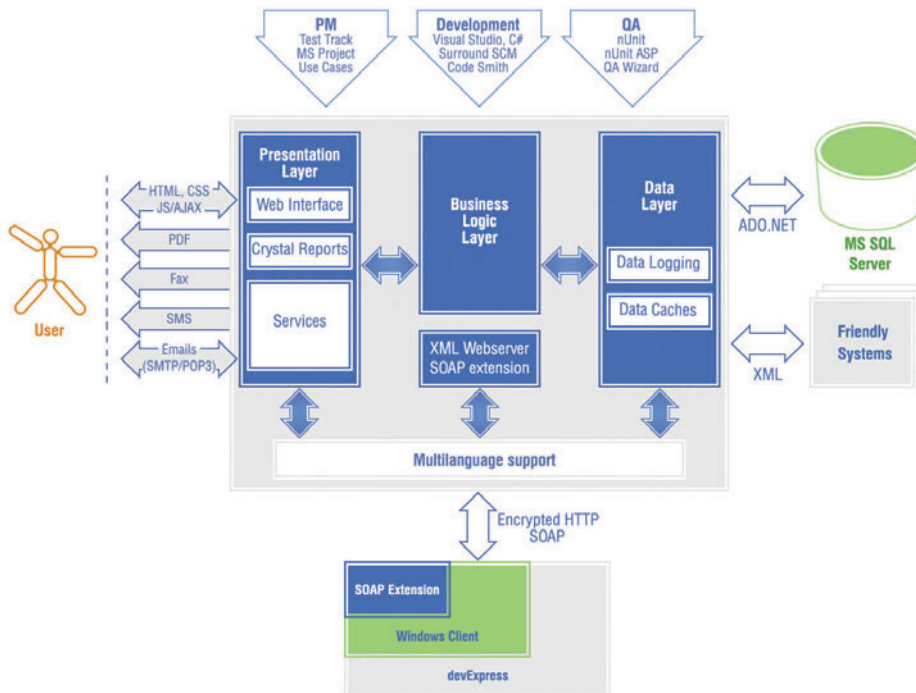
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## iB2C – Integrated Business to Consumer Platform

### High Level Project Architecture

The diagram below gives an overview of the project architecture. Because the platform was created to be distributed to other customers, it is capable of hosting several owners on a single server.



### Delivered to the Client

- █ 290,000 lines of code
- █ 1,500 classes and interfaces (OOP)
- █ 120 database tables
- █ 35,000 man-hours of project work

### Main Functions of the iB2C Framework

- █ Separation & sharing of data and functionality between several owners and servers
- █ Access permission based on roles
- █ Content management system
- █ Distributed database with online replication
- █ Data import/export in different formats
- █ Graphical database management interface
- █ Services scheduler
- █ Server synchronization via .NET Remoting
- █ Serial messaging based on message templates (E-mail/Fax/SMS)
- █ Full multi-language support
- █ Activity log

### Software Engineering Practices

The project team consisted of ten members: 1 Project Manager (scope definition, requirements elaboration, team management), 1 Project Leader (requirements specification, system architecture, technical leadership), 5 developers and 3 QA engineers. Some of the software engineering practices that were used in the project are listed below:

#### Adopted Software Development and Delivery Model

Specifically for the iB2C project, the team tailored the standard development process at Intellias. This modification optimized the client's business processes and timelines.

#### Parallel Versioning

Based on the Surround SCM version control software, the team implemented a parallel versioning system. Fixes to the live version were implemented in parallel with the new developed versions and were then appropriately merged into the single codebase.

#### Unit Testing

To make sure that any changes made to the code were safe and to simplify the re-factoring of existing code, unit tests for core functionality were developed. nUnit and nUnit.ASP were used to prepare these unit tests.

#### Remote Debugging

In some cases, a defect was difficult to reproduce in the development environment. In these cases, MS Visual Studio Remote Debugging facilities were used in order to reproduce and locate a defect on the customer's server.

#### Re-factoring of the Existing Code

The system was implemented more than 3.5 years ago and since then, a significant amount of new functionality has been added. Also, the old modules needed to be re-worked in order to be compliant with the updated architecture. The development team ran several re-factoring stages to ensure that all the code was consistent with the current architecture.

#### Automated Testing

Every midsize or large project requires regression testing to ensure that new changes to the system do not add defects to the old code. Automated testing (Seapine QA Wizard) was used to test previously developed code. The advantages of automated testing include reduction in man-hours and in overall cost of the project.

#### Remote Installation, Pre-production Server

All the updates were first deployed to a pre-production server where the customer ran acceptance testing. Once acceptance testing was successful, the update was installed on the live server. All the installations used Terminal Services to access the customer's servers.



### iB2C Online

- █ [www.ballkalender.info](http://www.ballkalender.info)
- █ [www.flighttime.at](http://www.flighttime.at)
- █ [www.bridalworld.at](http://www.bridalworld.at)
- █ [balina.joppich.at](http://balina.joppich.at)