

IT Consulting – Technologies, Methodologies, Management Challenges and Solutions

Case Studies

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Workflow Time-keeping Software, Piscataway NJ

Back Office Work Flow Application – SOEWAT for Telecom industry (6mon)

The client requested the contractor to put together an intranet web application for handling the highly time-sensitive call center environment. The challenge was to build the software in a short timeframe of a couple of months. The team included business analyst, lead developer (consultant), enterprise architect, software developer and UI designer. The consultant “rolled up the sleeves” in leading the development effort, participated in data modelling using Erwin tool and generated the relational database tables/sequences. The consultant reviewed and studied the system specifications for the application design and process flow. The consultant interacted with the enterprise architect and developers about Struts 2, Spring 2.5, and Hibernate 3.2 open source frameworks. The consultant performed iterative service-oriented architecture-based design (SOA) using Spring @Service and @Repository annotations as part of agile methodology. The consultant implemented ATG Commerce Server components for content publishing and content management of telecom content in ATG-based Wireless Content Portal. The goal was accomplished in building the software in 3 months. The consultant got good reviews from client and contractor management.

Banking E-Commerce Software, Princeton NJ

E-Commerce J2EE Platform under Web logic – Dimension (6mon)

The client requested the implementation of the E-Commerce “Dimension” platform in banking transaction processing. The challenge was to leverage the existing product interfaces with the back-end financial systems so that the software development impact and effort was minimal. The team included business analyst, 4 developers, lead developer (consultant), and technical lead. The consultant participated in use case requirements & design review meetings following a Rational Unified Process methodology. The consultant created technical specification and program design documentation for development based on use cases & architecture. The consultant participated in code reviews of peer-developed code, design and development of core components, integration testing, peer-developed module testing and releasing bug fixes for QA-testing. The consultant executed local builds using ANT scripts on Web logic domain server setup in UNIX environment. The consultant led 2 developers in modules for design direction; code reviews, estimation, mentoring. The consultant was involved in migrating single JEE enterprise application into multiple J2EE enterprise applications within Eclipse Europa using Struts and EJBs. There was extensive use

of MVC-based Struts 2, EJB-based components, CMP-based persistence. The goal was met in providing the client with an improved product. The consultant's contribution was well appreciated.

Portfolio Management Software, Princeton NJ (3mon)

Portfolio Management software in financial services start-up company

The client requested architecture and deployment services from the software architect (consultant). The client was interested in releasing an internet web application for servicing consumers in financial portfolio management into production. The consultant evaluated the current application architecture components in terms of scalability, performance and maintainability in the Tomcat/JBOSS/MySQL environment. Upon evaluation of the production-ready environment, the web application was rolled-out successfully on Red Hat Linux platform. The consultant also mentored 2 Web Developers to integrate core application framework in Struts/Tiles web app, Spring, Hibernate, .NET, Apache Axis and EJBs to improve the usability, maintainability and reusability. The consultant authored "best practices" & guidelines for use in development. This was a successful architecture review, design and mentoring finally putting into deployment assignment.

City Law Enforcement Agency, NY, NY (4mon)

Crime determination and Pattern Management System in City Government Sector

The client requested that an intranet web application and mid-tier components be created so the software architect (consultant) defined the overall application architecture using Struts/Spring/Hibernate. The consultant performed detailed design documentation required refining further use cases for other application developers/programmers. The consultant investigated and researched the possibilities of "portalizing" web application using Websphere Portlet Frameworks. The consultant documented detailed designs of "portalizing" web app. The consultant integrated the web app with MapInfo GIS & Search Engine. In all, the consultant successfully transferred the above knowledge to other architects and developers after the work was completed.

Pharmaceutical HR Management, Whitehouse Station, NJ (4mon)

Job Position Control System in Pharmaceutical Industry

The client requested the object analysis/modeling services of the systems analyst (consultant). The consultant did use case analysis using Argo UML, screen design and Struts-based navigation prototype of a web application for administration of Merck position-based HR Security. The consultant analyzed the requirements and documented using Merck Systems Life Cycle. System Life Cycle Documents were maintained in Documentum repository & source code maintained in Rational Clear Case versioning system. The web application in future would be portal-enabled for hosting within BEA WebLogic Portal. RUP Iterative Methodology of the project was adopted for future development. The consultant completed the assignment in professional manner.

Agricultural Commodities, White Plains, NY (6mon)

Commodity System and Global Positions Calculator

The client requested the lead developer (consultant) perform detailed component design and middle-tier EJB development based on use-case requirements using RUP methodology. The applications/systems that were worked on included Cash Futures Contract Management System where the consultant did a proof-of-concept of EJB Services and Hibernate O/R Framework. In Customer EJB services-oriented architecture within Customer Management System the consultant designed using Struts UI Framework and EJB services with Hibernate O/R Framework based on the proof-of-concept. In GMI Futures/Options Calculation Reporting EJB Services, the consultant led 2-3 Struts UI developers while working on the mid-tier services based on the requirements written by the business analyst executing on the project management plan. The consultant created UML models, design specifications and developed complex EJB services while assigning work to the developers to write Struts forms and POJO domain classes and build Hibernate configuration to connect the application to the database. The consultant did code review and performed integration testing before deploying the solution to the QA team. The consultant was responsible for the production rollout. The consultant analysed the data from the trade feed working with the business analyst, design and architect the calculator as a Stateless Session Bean with Domain Object Model using Java Interface and persist using Hibernate API invoked from a JSP passing criteria data as objects obtained from HTML form deployed for business analyst and users in WebSphere environment. The consultant elaborated, based on the RUP methodology, the requirements defined in use cases using J2EE Design Patterns & Session Bean EJB component design and Hibernate O/R Persistent API. The assignment was completed and the software components and services were well designed and of top quality.