Developing a Desktop Application for a legal reporting agency

Client is a leading legal reporting agency in India. It broadcasts coverage ranging from High Courts to the Supreme Court.

The Vision

Legal reporting involves extensive documentation of the legal cases, observations of judges, and decisions given by them. These legal reports are used by lawyers for analysis, study, case preparation and training purposes. The agency sought the services of e-Zest to develop a desktop-based application which would be a legal knowledge repository and allow access to legal practitioners on a subscription basis.

Application Overview

The desktop application requirements ranged across a wide range of functionalities. Along with voluminous amounts of data, security of the documents was a major aspect that the solution focused on, since the knowledge was from the legal community. The application was supposed to run on any operating system, provide the ability to work offline with updated database, and deliver user-friendly tools such as adding notes, highlights, anchors and bookmarks. An elaborate search functionality feature was also envisaged.

e-Zest was the designated technology partner because of its decade-long experience of working on such complex applications. It boasted of a skilled workforce with proven skills to apply their domain knowledge and build the end product, keeping the client's solution considerations in mind.

Technologies and Tools:

A Java-based Apache Solr server with the ability to manipulate the records in offline mode.

Desktop:

- Frontend: Java FX , FXML and HTML, JFX Flow, Google Guice
- Background Jobs: Quartz Job Engine
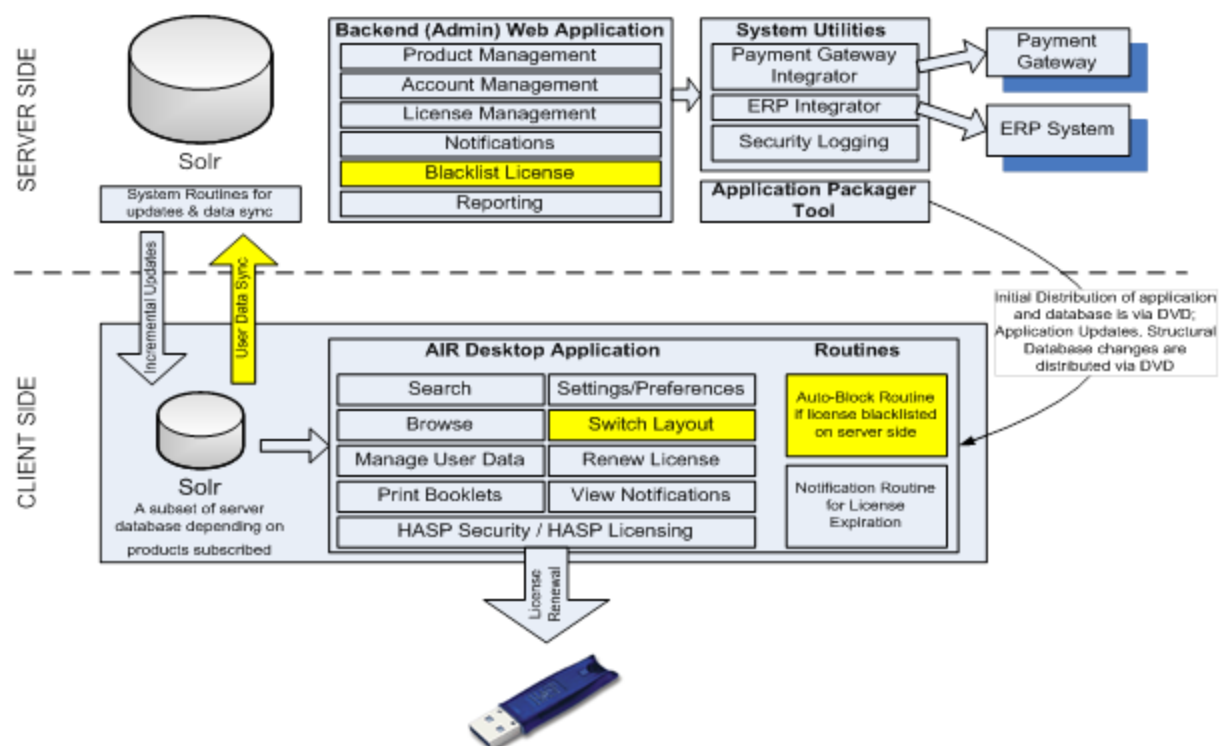
- Database: SOLR and Lucene

Web:

- Spring, JDBC, Oracle , Apache CXF Rest Services
- Middleware: Active MQ Queue

Challenges and Solutions

Taking into account all the features needed in the application, e-Zest decided on a multi-pronged approach for this app. For security, the project team relied on Sentinel HASP-based entitlement and licensing solution. Essentially, a dongle was needed to activate the application. The state-of-the-art security requirements were met very effectively using this strategy. The team used SOLR, an open-source enterprise search platform for full-text search, faceted search and data encryption. The data was stored in an encrypted format so that users could not view the data directly from other data access tools. The front-end of the application was built on Java FX since it is platform independent and takes care of multiple resolutions.

Solution Architecture

The figure below demonstrates the logical context and components used in the desktop solution:

This desktop application consists of two distinct logical components – the knowledge base (Solr database) and the desktop application that provide core knowledge base services like searching and browsing the knowledge base, managing and maintaining user data like notes, bookmarks, anchors, highlights and several ancillary functions like renewing licenses, switching to different user interface layout, managing preferences, settings etc. As a standalone desktop application, this desktop can run

offline; however it depends on server side infrastructure for latest updates to the knowledge base data, synchronizing user data with server side and renewing licenses.

Technical Breakthroughs

- At the time, Java FX was a niche-technology and the e-Zest development team was one of the few skilled resources in the world that developed a great solution using this technology.
- An important milestone for the integration phase of the project was including the utility applications in the core project. The utility applications were developed as value-add to the core solution.
- The access control features, prevention of reverse-engineering, tracking access in the application cemented a strong layer of security on the successfully delivered project.

Business Benefits

The business needs of the agency to have a fast, reliable, secure application to store and access the legal records were successfully met. The now live desktop application enhances the user experience and enables them to purchase e-books, subscribe to licenses, manage data, and search for relevant information. It offers a rich look and feel and reinforces the agency's leading position among legal data publishers. It gives the client a technology edge over competition in this space. The project has boosted the revenues of the client by approximately 18%. The client also found increased knowledge usage and technology adoption amongst their users.

Bottom Line

Employing Java FX enabled e-Zest to deliver a rich-looking, modern desktop application that was very well appreciated. The application, as desired, was compatible with the latest version of Windows and Linux. Every new requirement and challenge was met with innovative thinking by the vastly experienced team at e-Zest.