Case Histories

The value of a professional services provider shows through in the measurable benefits that they produce for their clientele.

Innovatics has helped many clients through the years with innovative solutions to real business problems. Read about how we have helped some clients in the select case studies below.

PowerBuilder to Web Application Conversion for Portfolio Management Application

Our client had an existing portfolio management that had been developed using PowerBuilder and was used as a Windows desktop application. They wanted a web based application that had the features of this proven software and we were asked to create this web application.

Our client first used a tool provided by a vendor that automatically (in theory) converts PowerBuilder application software into a web application. The client encountered several major technical problems with this approach that limited the usability of the resulting web application.

Against some skepticism from the client.s internal PowerBuilder team, we championed the idea of rewriting the PowerBuilder code base to a modern Java and Swing based platform. We identified the key to porting PowerBuilder code: a replacement for the powerful .DataWindow. feature of PowerBuilder. This replacement component served as the basis for porting much of the PowerBuilder application. This early breakthrough gave the client full confidence that the conversion process was solid and productive.

We next had the challenge of reproducing Windows-specific features in a web application with the same quality. We developed what was to later become our PDFJet programming library product, in order to support the creation of PDF reports from the new web application. PDFJet allowed us to provide precise, reliable printing from the new web portfolio management system. We also developed a Java Swing based counterpart to Windows .drag and drop. to allow report views to be customized using the mouse. And we created a custom installer / launcher for the Java Swing based applet to speed up the program launching.

In all, we successfully transformed a Windows-only, PowerBuilder application into a modern, Java based software design. And we did this without sacrificing *anything* to which customers had become accustomed.

Enabled Market Data Online Access Using SunGard's FAME

Innovatics was instrumental in providing a fast, highly usable online interface to a FAME database for a research system used by a securities house.

We first championed the selection of FAME, which is optimized for market data and historical trading databases, to the internal IT department as the best choice for the problem domain. We then eliminated performance problems related to day to day use of this database.

Our client required extremely fast read-only access over the internet to terabytes of fixed-income data that was stored in the FAME database. We teamed with another contractor to develop C++ components for the Apache web server and for database access that enabled SOAP based access to the data through Apache. The combination of these two components was an order of magnitude faster than a middleware solution proposed by the database vendor, and required one tenth of the memory. Innovatics. implementation now serves data reliably and with top speed for this client.

Another challenge resulting from the use of FAME was slow batch import of data. Our client used a slow scripted loader program to do data import to FAME. The loader was supposed to run overnight. But since the data was growing month by month, the loading process started to encroach on normal work hours in the morning. This resulted in slow system speed and dissatisfied users during normal business hours. After some study, Innovatics developed a very fast replacement loader program written in C++, which increased the speed of loading data by three-fold. The more efficient use of memory by the new loader that we developed allows our customer to scale up the process and further speed up processing as desired, simply by running more batch jobs using this new loader.

Our client now has a solid terabyte-class database for market data, using FAME and technology that we provided, and they make much better use of their existing server infrastructure as a result.

Financial Model Refactoring for Performance

One of our clients had a financial model that had been developed by a quantitative analysts' group. The model was a computer program written in C++. The model worked correctly, but was quite slow.

We were asked to assist in improving its speed. After examination, we determined that the code was of excellent quality and workmanship and that low level optimizations of the C++ code would have a very limited effect. We determined that speed could be best improved by using better algorithms for the matrix algebra used by the model. We identified an advanced math library called ATLAS for linear math operations, which we used as a replacement for the linear algebra operations in the model.

As a result, the financial model became close to 5 times faster as a result of our work. This allows our customer to process more financial data, faster, in order to respond better to fast-changing market conditions.