

Numeric Components and Data Mining: Part 3

By NAG for DStar Numeric Components and Data Mining Part 3: Lessons from PeopleSoft

What drives performance and profitability for your company? What are the real revenue sources, components of expenses, and opportunities available to optimize shareholder value?

While developing their corporate strategies, these are the types of questions that users of PeopleSoft 8 ask and find answers for using its powerful analytic tools for enterprise performance management. PeopleSoft Inc in turn asked themselves how they could best bring these new analytic tools to their users. PeopleSoft concluded that seamlessly weaving the world's most tested and proven statistical algorithms into their applications would provide compelling advantages to their company. In this article, Louis Olds, PeopleSoft's vice president of Product Management, explains how numeric components are used in their highly acclaimed tool for automated knowledge discovery.

What types of automated knowledge discovery does PeopleSoft 8 provide to its users?

PeopleSoft Enterprise Performance Management is a comprehensive integrated suite of eBusiness analytic applications designed to help companies manage their investments in employee, customer and supplier relationships.

For example, a company would be very well served by knowing whether it sells more or less via the Internet, or in stores, to particular market segments such as yuppies or seniors, and so forth. In fact, most large companies have a vast warehouse of sales data that they can plumb for answers to such questions. PeopleSoft's applications allow users to conduct mission-critical analyses such as these that can have deep impacts on profitability and performance.

How do the statistical and mathematical components in PeopleSoft's Enterprise Performance Management enhance this capability?

PeopleSoft has embedded mathematical and statistical components from NAG's C Library into PeopleSoft 8 Enterprise Performance Management products. This gives PeopleSoft users the advanced statistical tools they need to effectively analyze information. These components are seamlessly woven into our tools for asset liability management, funds transfer pricing, risk weighted capital, and analytical forecasting.

Are these tools then specifically for the financial services industry?

Many users are in fact in the financial services industry but there are many other types of companies that can and do use PeopleSoft 8's analytical tools with NAG components embedded into them. For example, companies with long-term contracts that are very much affected by customer behaviour (such as deregulated energy companies, wireless telephone companies, etc.) are also likely to find these as powerful ways to manage market risks.

Typically users are vice presidents of management accounting, corporate planning, or other executives working with company CFOs. The statistical components are embedded deeply into the applications, and users are only required to know the business rules and assumptions that drive an overall analysis. We have abstracted away as much of the technical complexity as possible. This means that the software is maintained by business analysts, not an IT Department, and this is one of the ways in which these analytical tools make a break with past practices. In the past, companies usually had sophisticated analytics in a black box written in code by their IT department, and there was no way to update how calculations were done unless they went back to the IT department in their company.

The users of the financial services applications where NAG code is embedded are often from very large institutions that need to calculate risk adjusted profitability in fine detail, often down to the individual among tens of millions of customers. In the past, such companies probably tried to use spread sheets, and calculating risk very quickly became unwieldy. Now, for example, a bank with 100 different business units worldwide can keep track of how every loan it makes contributes to the risk in its overall portfolio. They need statistical tools to make these analyses.

Was the size of PeopleSoft users' datasets important to your decision to use NAG statistical components?

Yes, it was one of the key decision points. Our financial services clientele are calculating risk adjusted profitability for many millions of customer transactions. This made high performance and scalability very important factors in our consideration of which tools could be embedded in our application.

We also knew we needed sophisticated mathematical routines that would, like PeopleSoft's analytic applications, work with a number of relational database environments, both for Unix and mainframes. PeopleSoft's eBusiness analytic applications allow our customers to leverage the investment they've made in their computing environment.

Why didn't your development staff create these mathematical routines internally?

We certainly could have developed these routines if we had wanted to take the time to do so. We have very sophisticated mathematicians on our staff but we wanted to avoid the time to reinvent the wheel by writing the lower-level mathematics ourselves. We estimate it would have taken more than two man-years to do this, which is an awful lot of time and expense.

We looked at a few different mathematical libraries and found NAG by far had the best set of routines that we needed. Their C Library was proven to be more accurate and with the highest performance. NAG has the credibility we required from a tool supplier to move forward with confidence as we built our applications.

In summary, using NAG components enabled us to get to market very quickly with fairly sophisticated analytics. None of our customers know that NAG exists in the product because it is abstracted away from those complexities and put in terms of business analytics. Nonetheless, our users get the power and flexibility of these NAG routines. We expect to reduce maintenance costs by using such reliable and proven code. This will allow us to focus on new functionality in future releases.

What advice do you have for companies considering the use of numeric components in their applications?

My advice to others seeking numeric and statistical components is to look for libraries with the breadth of algorithms you need and with well established accuracy. Also keep your eye on the efficiency of the routines, ensuring that you find the most efficient algorithms that have been developed for those functions.

ALM Communications Inc,
1454 West Glenlake Chicago,
IL 60660-1802,
773-973-2077,
alm@almcommunications.com