# Seeking a Competitive Advantage

## Matisse Provides the Platform for Next Generation Web Services—and an International Payment Network

*With far-reaching plans for expanding its international money transaction management network, Standard Transactions is developing a new XML-based web services financial application and chose Matisse to ensure a flexible, extensible, long-lived architecture.*

### Wanted: A Flexible, Extensible Web Services Platform for Growth

As a part of the Standard Group, Standard Transactions provides the core technology platform for an international financial network that extends secure instant payment services to businesses and individuals that conduct buying, selling, payroll, and other money transactions internationally. Based on pools of currencies and gold stored in secure repositories, the Standard Group issues digital currencies of its own denominations – known, for example, as "Standard U.S. Dollars." To minimize risk, the company is creating a fully audited international trust that will serve to isolate and protect customers' assets during transactions.

In the past, Standard Transactions has relied on a relational database, Microsoft's SQL Server 7.0, to track and manage transactions. But as it evaluated its options for growth and developing an XML-based web services architecture, Standard Transactions decided, for several reasons, to move to a wholly object-oriented system. For one thing, the monetary transactions and customer accounts it handles are not naturally flat, relational entities. An object-oriented database approach will allow for a more complex conceptual model in the database – and a far more effective representation of the real world of digital financial transactions. More importantly,

"pure" object technology is more flexible and thus far easier to maintain and extend.

"If we continued working with an object architecture that included a relational database, we knew we would have to contend with an additional layer of software to support O-R (object-relational) mapping," says Standard Transactions CTO Loryn Jenkins. "Some 25 to 30 percent of the new code we developed would have to be devoted to mapping. And all that code would slow performance and be liable to more defects, which would require more testing and debug time."

### Flexibility: The Competitive Edge

"Our goal," Mr. Jenkins continues, "was to build a competitive advantage through our software development activities."

That's because the Standard Transactions IT group's mandate goes beyond providing a web services platform to supporting the company's international money transaction infrastructure. In fact, Mr. Jenkins' organization also plans to build products for various enterprises in the Standard Group, its parent company, and their customers. Its next-generation system will include a suite of web-based transaction services that will integrate with corporate customers' financial management systems.

Given such a broad agenda, Mr. Jenkins knew that his team would need a seamless object-oriented architecture. With a wholly object-oriented development platform, he explains, they would not simply eliminate the unnecessary burden of mapping; they would also be able to easily modularize – and reuse – code, adding flexibility and extensibility at the same time.

"Say we develop and deploy a web service and it's working, and then we strike a deal for another web service that's different or more complex," says Mr. Jenkins. "The issue then becomes: how fast can we modify, extend, or enhance our software platform to deliver on and support that new deal?"

## Synergy Is the Solution

The Standard Transactions CTO had made a conceptual decision some time ago. For the most rapid, flexible software development and modification web services platform available – one that would simplify code and eliminate O-R mapping – he knew he would require a DBMS and a programming language that work hand in hand.

The solution is the Matisse DBMS coupled with the Eiffel programming language. Given Eiffel's powerful inheritance mechanism and Matisse's support for advanced hierarchies, the Standard Transactions engineers can fully model and represent the conceptual structure of money transactions – a task that would be difficult and cumbersome with other tools. Together, Eiffel and Matisse offer a balance of speed and flexibility in the development environment.

Indeed, the effective synergy of Eiffel and Matisse was of paramount importance to Standard Transactions. "Out of a single schema, we can generate our Eiffel application code and

our Matisse database," explains Mr. Jenkins. "And Matisse layers XML web services on top of an already feature-rich object management system. On several levels, the Matisse platform streamlines our development process.

"I like using tools that give my company a competitive advantage while allowing my developers to lead reasonable lives," he adds. "Those are key values in a company, like Standard Transactions, that's wholly mediated by software."

## A Smooth Transition

The SQL capabilities of Matisse are also important. "When you're scrapping what you have and rebuilding, as we decided to do, Matisse's SQL capabilities provide a comfort factor," notes Mr. Jenkins. "For example, it helps to be able to use industry-standard reporting tools to extract data."

Finally, the Standard Transactions CTO, his staff, and management were impressed by the caliber of service and positive attitude that the Matisse professional services staff brought to the project.

"They dedicated people and resources to this project for weeks before the deal was signed off – developing a core system and examples we can use to train our staff," says Mr. Jenkins. "They showed a lot of good faith – and a willingness to bend over backwards to make sure that we will succeed with Matisse."

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