

David Litwack



Going for Gold in Web Services

Last April, when *Novell Connection* talked to Chris Stone, Novell vice chairman in the office of the CEO, he promised that Novell would ease the task of developing applications for Novell products. He also made it clear that Novell planned to be a leader in the emerging web services market. (See “Stitching Together a Winning Company,” *Novell Connection*, Apr. 2002, pp. 6-11. You can download this article from www.ncmag.com/past.)

With the acquisition of SilverStream Software, Novell has accomplished both of these goals, making good on Stone's promises. Novell now has not only an award-winning application development environment but one that was specifically designed with web services in mind.

What does this mean for you and your company? As David A. Litwack, senior vice president of Novell web application development products, explains, you can now create web-based applications that can pull information from your existing backend systems—which were not, incidentally, built for the web—and use this information to provide dynamic services to users based on who those users are and exactly what you know about them. In fact, you reap the benefits from what appears to be the perfect union: Novell provides the identity and security technology, while SilverStream provides the integration and interaction technology.

Q How does this acquisition benefit SilverStream?

A Before I answer that, I think you need to understand the market that SilverStream serves. The company was founded six years ago with a charter to facilitate the development of advanced web applications. Of course, six years ago, there really weren't any advanced web applications. Most web sites had static content, and when people got really aggressive with their web sites, the content actually changed dynamically. Back then, people were using some pretty primitive technologies to build these web sites, things like CGI with Perl scripts, for example.

But when SilverStream was founded, we had this vision that eventually people would be using the World Wide Web and the Internet to transact business, whether inside their companies or with their suppliers, their business partners, their customers, the

general public, or whatever. For most companies, transacting business means repurposing existing information and transactional systems for the web.

As an industry, we spent the last 30 or 40 years building applications as isolated silos, intended for a specific targeted audience. These applications were not built with the intention of suddenly being able to deliver that information and use those transactions with anybody other than the originally intended audience. Now, however, the world is topsy-turvy with the Internet, and we need to get information out to large numbers of users who we haven't been able to reach electronically before.

So over the past six years, SilverStream has built technology based on Java and J2EE that can reach in to these multiple, backend systems (which are sometimes within the company and sometimes across business boundaries), pull together information, transform it into web-enabled business functions, and then deliver it up in a contextually relevant way to a variety of distributed audiences.

SilverStream is widely acknowledged to offer a best-in-class product line. For example, our eXtend product line recently won Product of the Year in the web services development space.

Now, what does Novell bring to the table? Well, a couple of things: One, when you talk about taking information that was not originally intended for an audience, delivering it to that audience, and morphing it in a contextually relevant way—that's a long-winded way of saying identity. You need to know who people are. You have to make sure they have access to the correct information, and you have to know enough about them to add context. For example, are they managers, or are they salespeople? Are they insurance agents? Are they financial analysts? Whatever their role is, the only way you can add context to them is by knowing something about them.

Novell's expertise in security and identity adds an important dimension to this market. As we look at this market from a web application development point of view, we see this as an integration-interaction problem, integration to the backend information systems and then interaction with the target audience in a relevant way.

You could add a third “i” to that, identity, which is an area where we had been relying on third parties. Now you're going to see a new class of advanced web applications—frequently described by the market as web-services-based applications or as services-oriented applications—that provide a solution to the interaction, integration, and identity problem. With Novell's

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security and identity capabilities, we now have not only the broadest solution in the marketplace, but also a solution whose components are based on standards and are best-in-class.

The second thing that Novell does for SilverStream is to provide reach. While we're sitting here with a very good product line, we didn't have a lot of market reach as a smaller company. This is especially true in the current economic climate where a lot of companies have become cautious about their IT spending and about bringing in new vendors. We're now operating in a business world where organizations are reducing their list of strategic vendors, not increasing it. Being part of a company that has been around for 22 years, is a billion-dollar-plus company, is an extremely well-capitalized company, and has lots and lots of customers gives us the opportunity to take our best-in-class technology and Novell's best-in-class technology and reach a much broader market.

Q What do you want Novell customers, IS managers in particular, to know about SilverStream?

A I think probably the single most important thing is that we are in the application-development or application-building business. For Novell customers who have had primarily a network-operation or infrastructure relationship with Novell, we're now adding an important new dimension with the ability to build sophisticated applications. With this new technology, you're not building a NetWare application or a Solaris application or a Windows NT application; you're building a Java/J2EE application, and the application can actually run independently of the platform. For example, we have customers whose applications can run on a mixed cluster. Their applications know nothing about the operating environment and can run on a cluster of machines with a mix of operating systems.

We will be delivering our whole application environment—the tool set, the J2EE application server, and our integration and interaction capabilities—on top of NetWare. Novell customers will be able to go to their managers and say, "I want to build a standards-based application with no lock-in to any

particular operating environment that can run on the operating system of your choice. Oh, by the way, it will run on NetWare and, by the way, it will run very well on NetWare."

Among other things, in the past year or so, Novell has shipped a Java Virtual Machine for NetWare that is the fastest, the highest performance Java environment on the market. We're now in a position where we can say to Novell customers, you can build an application with no lock-in to any vendor—not to

"You can build an application with no lock-in to any vendor—not to Novell, not to IBM, not to Sun, not to Microsoft—that's entirely built on standards."

Novell, not to IBM, not to Sun, not to Microsoft—that's entirely built on standards. By the way, the NetWare environment, one of the platforms it runs on, will be very fast, very stable, and very secure—as it always has been.

Q Does SilverStream now become Novell's entire development environment?

A For customers building applications?

Q Yes.

A Yes. As Chris Stone has said, Novell has flirted with application environments in the past. Long-term Novell customers remember AppWare, and certainly everybody knows about NLMs. What we're offering customers now is an environment that is, first of all, completely industry standard Java, J2EE, XML, and web services based. This development environment is also capable of running on any platform

and comes with a set of high-level tools for building applications—tools that are recognized in the industry as among the highest productivity tools available. Unlike some of Novell's efforts with application development in the past, here you have something that is standards-based, open, and very high productivity. And by the way, you're going to be seeing some of this technology bundled with the future release of NetWare.

Q How will SilverStream fit into Novell's organizational structure? Will it be set up as a wholly owned subsidiary, or will it be a department within Novell?

A I like to think of us as a business unit. The charter of my organization is to make Novell a leader in the emerging market for the development of services-oriented applications. We'll certainly work closely with some of the other Novell product groups, especially the group focused on security and identity and the group focused on network management. We'll also be working closely with Novell's worldwide consulting services, but our charter is to make Novell successful in the emerging market for services-oriented applications. I'll be reporting to Chris Stone in that capacity.

Q What are SilverStream's competitive advantages in the web services space?

A Again, you have to look at the market. As everybody knows, we're coming through a period of a lot of change and uncertainty. Some people would describe it as the dot-com boom and bust, which actually left some positives. The good news is that business people have been sensitized to the dramatic impact that technology, particularly web-based technology, can have on their business.

We might think of it as the Amazon.com phenomenon. Technology can now be used to fundamentally change the way a business relates to its suppliers, to its customers, to its business partners, in ways that are industry changing or market changing. These changes can completely put competitors out of business or put you out of business if you don't respond appropriately.

The bad news is that IT has been put under enormous pressure. If you

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look at IT organizations today, they're under pressure to respond with new applications, particularly web-based applications, in a shorter time frame than ever before. They need new skills to respond because this new class of applications is not client-server, COBOL, or Visual Basic. In addition, it all has to be standards-based at a time when new standards are seemingly being introduced daily and the standards themselves are being changed very rapidly. And oh, by the way, everybody's budget has been cut.

It's not SilverStream or any particular vendor that is driving this market. What's driving this market is the convergence of a number of technologies within the past ten years: the Internet, HTTP, the World Wide Web, XML, Java, J2EE, SOAP. All of these technologies are coming together to create a new way of building applications, and what we offer is an elegantly architected, complete, integrated environment with a tool set that makes it easier to build these applications than any other product out there.

Q How does developing web services differ from developing traditional client-server applications?

A Each paradigm shift that we have in our industry brings something new with it. Client-server brought the notion of a graphical interface and event-driven programming which, in turn, led to the adoption of object-oriented programming because event-driven programming lends itself to object-oriented programming. Because of the nature of client-server, the application was basically running on the client and accessing a bunch of information. Client-server drove a lot of people quickly to relational databases because relational databases returned an entire result set that was a more network friendly way of accessing a database than older database models provided.

When we look at the web application market, the thing that typifies it is a middle tier, or server-centric, technology. The data tier hasn't changed. In fact, in this market, most service-oriented applications that are being built are using existing information. It could be information in SAP, People-

Soft, Siebel, old mainframe systems, or CICS systems. It could be coming out of relational databases or any other database you can think of.

The middle tier, which in client-server is a relatively weak or nonexistent tier, is the center of the universe in the web services environment. It becomes, if you will, the lens through which all of the information from the backend is focused, and transformed in a relevant way so that the middle tier is looking at who the target audience is and dynamically, on-the-fly, delivering what that audience is actually interested in. As some people explain it, it's not the system forcing the hu-

“The strategic fit is extraordinarily good . . . We're finding that there's very little product overlap, and there's enormous product synergy.”

man being to adapt; it's the human being that's forcing the system to adapt. This is a completely new way of thinking about systems.

Applications are running on the server so everything is inherently multithreaded, with accompanying performance considerations. There are also significant security issues because we're suddenly opening up core backend information systems outside the firewall to what could be anything from our closely held business partners to the general public.

Another dimension is that the individual has a single relationship to the business function but may be talking to it in a variety of ways. The individual may be coming in from a browser at work; from a browser at

home; from a more intelligent, rich Java client; from a cell phone; from a Palm Pilot; or from a wireless device over the network. So the picture is totally different than it used to be. It's much more human friendly because people are seeing things as they want to see them and are communicating in the way they want to communicate.

But the ability to deliver and manage this information is much more complex. It's a completely different way of thinking about the problem than client-server or, in fact, any previous application technology.

One of the things that the combined Novell and SilverStream company brings to the table is all of the different pieces of technology you need to perform a single task or business function. It's helpful to give an example. All of us travel, so it's an easy example to understand. When we plan a trip, we, as human beings, like to think we're booking a trip. But what do we actually do? We have to go to the airline—maybe it's an airline web site, maybe it's a toll-free number—and make our plane reservations. We have to make our hotel reservations, and we have to book a rental car. Then maybe we see what's playing at the theater in the local city and make reservations at the theater. And then maybe we make a restaurant reservation.

Wouldn't it be nice to think of that as one application? The reason we don't is because each one of those functions, if you will, has its own system. We'd have to go to Hertz's or Avis' backend system. We'd have to go to the Hilton Hotel's backend system and so forth.

What happens here is that the application becomes like a traffic cop. It's able to say, “I know the function you want to do. You want to book a trip. By the way, I know stuff about you. I know you like Italian food. I know you like the theater. I know you're going to Paris in the middle of September. And I also know from the backend systems what events are occurring in Paris.” The application knows all kinds of information about you and the circumstances of the specific business function.

The application can then reach out to backend systems and make an auto reservation. It can also make recommendations for restaurants. Because

the application knows when you're going on your trip, it can even go to a weather web site and tell you what the weather will be at that time.

So, we, as human beings, get presented with something that makes sense to us and is a complete, coherent function, but the application is potentially hiding an enormous amount of complexity from us. We're seeing all of the things we need to accomplish our business function, but no more than we need to see, and all of the information is tailored to our purpose.

It's a much better environment for the user, but it's a much tougher application for the developer to build. That's exactly the problem we've set out to solve and make easier with the eXtend product line.

Q In addition to providing the web services development environment, what other strengths does SilverStream bring to the Novell table?

A Well, we live and breathe this market, and we should mention that the SilverStream business unit, if you will, has a strong organization to support the customer. We have approximately 450 people, and we do have a presence worldwide, certainly not in every country that Novell is in but in a large number of geographies. So we can not only deliver products but also support the customer and work with the Novell sales force to present our products to IS management, to do proof of concepts of our products, and all of those types of things.

I think it's important to mention that although SilverStream was not as big as Novell and we benefit tremendously from the size, critical mass, and worldwide presence of Novell, we're also not a startup company, and we're not small. We also bring to the table a lot of skill sets, and every one of our people is an expert in this new technology. I think the organization itself brings an awful lot to the table.

Q You were CEO of PowerSoft in a former life, and you went through an acquisition with Sybase. Having been through this process before, what did you learn that has helped you with this acquisition?

A Well, all acquisitions are a challenge, and they create a certain amount of

work for integration. There are two things I like a lot about this particular merger: First, in the short time we've been working with people within Novell, we have found a lot of cultural compatibility. And when I say that, I mean everyone from sales to engineering to marketing to finance. We're finding that we get along quite well, that we have very good cultural compatibility with the Novell organization. We tend to be a highly skilled technical group, and we're finding the same thing within Novell. There are a lot of smart people, which is good.

Second, the strategic fit is extraordinarily good. Novell has been approaching this problem, this services-oriented market that I keep talking about, from one direction—from the security and identity direction. We have been approaching this problem from the application development direction. Both of us have been approaching the problem using an intense focus on standards. I don't want to imply that everything magically works together. We'll have some engineering work to do, but it's far less than one would expect in a merger because both groups are so committed to standards.

A good example is that eDirectory is an LDAP-based directory, and SilverStream supports LDAP. So in terms of the products working together, it's essentially a testing effort.

We're finding that there's very little product overlap, and there's enormous product synergy. The net result is that in a short number of months, we'll be delivering a Novell branded product line that will be open standards-based and more complete than anything else on the market.

Q What challenges do you see that Novell has going forward?

A Novell, of course, has had a great history. I think Novell needs to let the marketplace know that we now have a very broad range of products. I like to think of it this way: In the 80s, Novell actually invented networking. At the time, the definition of networking was making personal computers work together so they could share files and print. That hasn't changed, except the definition and scope of what we think of

as a network today is much broader. Now the network is a ubiquitous universal network, and we have an interest not just in sharing file and print but in sharing business applications and doing transactions over the web. And that's where Novell is evolving to.

SilverStream provides a number of pieces to the puzzle; a number of other pieces to the puzzle have been under construction within Novell for the past several years. Novell has to let the marketplace know that our time has arrived, that the network has grown up, and that Novell has grown up with the network. We're not just about network operating systems anymore; we're now about making businesses work together over the network. Getting that message out and letting people know about the transformation that Novell is and has been going through is probably the key and most important challenge to the company. ●

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