



## Microsoft .NET Customer Solution Case Study

### KLA-Tencor Links Java and .NET, Saves U.S.\$1.6 Million

#### Overview

**Country or Region:** United States

**Industry:** Manufacturing

#### Customer Profile

KLA-Tencor, based in San Jose, California, is the world's leading provider of process control solutions for semiconductor manufacturers.

#### Business Situation

KLA-Tencor wanted to move from Java to Microsoft® .NET, but it had 50,000 lines of code that did not convert and would have to be rewritten at a high cost.

#### Solution

KLA-Tencor engaged Microsoft Gold Certified Partner JNBridge, which used its solution JNBridgePro to create a bridge between Java and Microsoft .NET. KLA-Tencor was able to fully implement the solution within a few weeks of purchase without converting code.

#### Benefits

- Kept Java code intact
- Cut conversion time by a year
- Saved U.S.\$1.6 million
- Strong Microsoft support

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Roy Wang, Project Manager, KLA-Tencor

KLA-Tencor, which provides process control solutions for semiconductor manufacturers, recently sought to migrate from Java to Microsoft® .NET, but it had thousands of lines of code that would have to be rewritten at a high cost. The company engaged JNBridge, a Microsoft Gold Certified Partner that offers development tools allowing interoperability among different platforms, to deploy a solution. KLA-Tencor deployed a JNBridge solution that allowed the company to access larger amounts of data across the Java and the .NET boundary, and at the same time boost its performance. This solution reduced both the development time and the risk of rewriting and converting the existing code base. It also saved the company U.S.\$1.6 million, the amount it would have cost to rewrite the code.



## Situation

KLA-Tencor, a San Jose, California-based company that develops management and process control solutions for semiconductor manufacturers, was running a multi-tiered environment using Java and Microsoft® .NET. The company's management decided it wanted to migrate to the Microsoft .NET Framework and move away from Java. However, it did not want to abandon the investment it had made in the Java tier. The company had about a million lines of Java code in use. Using the Java Language Conversion Assistant (JLCA) to convert the code worked for all but 6.5 percent, leaving 65,000 lines that would need to be rewritten by hand. The company did not consider this a practical option.

"It would have taken 12 developers at least an entire year to manually fix the 65,000 lines that JLCA marked for manual treatment, then integrate, debug, and test the entire code base," says Roy Wang, Project Manager, KLA-Tencor. "This was an unacceptable cost."

KLA-Tencor engaged Colorado-based JNBridge, a Colorado-based Microsoft Gold Certified Partner, which, since 2001, has offered developers tools to help them integrate disparate platforms. JNBridge helps organizations ranging from independent software vendors to large business enterprises in financial services, manufacturing, healthcare, and government sectors to quickly build and deploy cross-platform applications.

The company's JNBridgePro interoperability tool is easily configurable and helps customers avoid having to replace existing systems by creating a means for the platforms to communicate. Even better, customers do not have to rewrite existing code on either side of the bridge.

## Solution

The company decided that instead of replacing the Java code, it would find a way to bridge the two technologies. KLA-Tencor spent three months in early 2004 evaluating competitive products. The company chose JNBridgePro. "JNBridgePro stood out in all the areas we examined, including technological capability, feature richness, ease of use, runtime performance, and response to customer needs," says Wang.

JNBridgePro bridges Microsoft .NET with J2SE or J2EE and supports all the leading J2EE application servers. It creates this interoperability bridge by generating a set of proxies that expose the classes' application programming interfaces (APIs) and manages the communications between the .NET and Java classes. Once the proxies are generated, developers can access the underlying Java classes from .NET (or .NET classes from Java). When deployed, the .NET classes communicate with the Java classes through the previously generated proxy classes, or vice versa. The .NET code runs on a .NET Common Language Runtime (CLR); the Java code runs on any conformant Java Virtual Machine.

The flexible architecture of JNBridgePro allows organizations to build applications that run in one of four ways: on the same computer in the same process through shared memory, on the same machine but in different processes, over any network through a fast binary protocol, or over the Internet. In addition, it permits organizations to use third-party .NET or Java-based APIs on the other platform without requiring access to the source code. Organizations such as KLA-Tencor can then offer both .NET and Java runtimes for a single application with a common code base.

KLA-Tencor implemented JNBridgePro in April 2004. Over the next three months, the

company's developers tested the program against several hard drive issues. By the end of July, the application was in production. Since then, the company has moved to a more recent version of the software. The application was put into production in March 2005.

### Benefits

With the help of JNBridgePro SE, KLA-Tencor has moved from using two non-integratable platforms to using the entire system as a Microsoft .NET technology. "Now it doesn't matter if it's a Java component or .NET component because they all act like .NET components," says Wang. The interoperability helped the company avoid the time and expense it would have incurred transitioning its Java tier to the .NET Framework. "We no longer have to think about the .NET platform or the Java platform," he says. "We view them as components of the same system. For our developers, that's very powerful."

### Implemented .NET, Kept Java Code Intact

Over the years, KLA-Tencor had made a substantial investment in its Java system. JNBridgePro helped the company move toward a strictly .NET development environment without losing its Java system. "With this application, you can make use of your investment in Java," says Wang. "KLA-Tencor has invested over \$20 million in the Java platform. Now we can develop in .NET but keep using the Java code."

### Cut Conversion Time by a Year

It would have taken KLA-Tencor a year or more to first convert its Java code and then rewrite any leftover lines; however, the JNBridgePro solution was operational in a few weeks. "JNBridgePro allowed us to migrate within a limited time frame, helping us quickly move out of Java to .NET," says Wang.

### Saved \$1.6 Million

KLA-Tencor saved U.S.\$1.6 million by deploying the JNBridgePro application, because it did not have to rewrite code. "The costs of the alternatives—replacing the Java tier or converting it and writing the bits of code that wouldn't convert—were simply too high," says Wang. "JNBridgePro was the smart, cost-effective choice for us."

### Strong Microsoft Support

As a Microsoft Gold Certified Partner, JNBridge enjoys many Microsoft benefits, including technical support and marketing assistance. "Our relationship with Microsoft has been integral to our success," says Deborah Arhelger, Vice President of Operations, JNBridge. "We have good working relationships with several product groups that have helped us in creating and marketing new product versions. The partnership program has helped us directly expand and accelerate some of our marketing campaigns."

## For More Information

For more information about Microsoft products and services, call the Microsoft Sales Information Center at (800) 426-9400. In Canada, call the Microsoft Canada Information Centre at (877) 568-2495. Customers who are deaf or hard-of-hearing can reach Microsoft text telephone (TTY/TDD) services at (800) 892-5234 in the United States or (905) 568-9641 in Canada. Outside the 50 United States and Canada, please contact your local Microsoft subsidiary. To access information using the World Wide Web, go to: [www.microsoft.com](http://www.microsoft.com)

For more information about JNBridge products and services, call (303) 545-9371 or visit the Web site at: [www.jnbridge.com](http://www.jnbridge.com)

For more information about KLA-Tencor products and services, call (408) 875-3000 or visit the Web site at: [www.kla-tencor.com](http://www.kla-tencor.com)

## Microsoft .NET

Microsoft .NET is software that connects people, information, systems, and devices through the use of Web services. Web services are a combination of protocols that enable computers to work together by exchanging messages. Web services are based on the standard protocols of XML, SOAP, and WSDL, which allow them to interoperate across platforms and programming languages.

.NET is integrated across Microsoft products and services, providing the ability to quickly build, deploy, manage, and use connected, secure solutions with Web services. These solutions provide agile business integration and the promise of information anytime, anywhere, on any device.

For more information about Microsoft .NET and Web services, please visit these Web sites: [www.microsoft.com/net](http://www.microsoft.com/net)  
[msdn.microsoft.com/webservices](http://msdn.microsoft.com/webservices)

### Software and Services

- Technologies
- Microsoft .NET Framework

### Partner

- JNBridge