



## Motorola Migrates Mission Critical Oracle Database in One Day with 100 Percent Accuracy

### Overview

**Country or Region:** United States

**Industry:** Manufacturing

### Customer Profile

Motorola, headquartered in Schaumburg, Illinois, is a global leader in wireless, automotive, and broadband communications. Sales in 2004 were U.S. \$31.3 billion.

### Business Situation

A group tasked with testing Motorola cell phone and software recorded test results in an Oracle 9i database—but wanted to move to Microsoft® SQL Server™ 2000. They delayed because of the amount of time and effort involved.

### Solution

Motorola used the Microsoft SQL Server Migration Assistant to provide quick analysis, database schema conversion, data migration, and business logic conversion.

### Benefits

- One-day migration
- 80 percent reduction in migration costs
- 100 percent data accuracy
- Access to SQL Server 2005 capabilities going forward

### Situation

In the highly competitive wireless industry, time-to-market is everything. Cellular providers and mobile phone companies roll out new phone models and services at least every six months, resulting in a blistering pace for product development, testing, manufacturing, and marketing.

Motorola, of Schaumburg, Illinois, knows the tempo well. In the communications business since 1928, Motorola is today a global leader in wireless, automotive, and broadband communications. In 1994 Motorola introduced its Integrated Digital Enhanced Network (iDEN) and wireless handsets for a variety of uses, from connecting workers on manufacturing floors to making conference calls in meeting rooms. An iDEN phone is a complete communications system that combines speakerphone, voice command, phone book, voice mail, digital two-way radio, mobile Internet and e-mail, wireless modems, voice activation, and voice recordings. In short, it allows workers to recreate their offices on the road.

The software for these phones is quite complex, and testing that software is similarly complex and time-consuming. Gordan Redzic is the Automation Team Lead for the iDEN Automation Group, the Motorola group charged with testing. "For every new phone model and system software release, we run a battery of tests to ensure that calls go through under a variety of circumstances, that users have good reception from site to site, that the software interacts with the hardware properly, and so forth," Redzic says. "We run an extensive series of automated tests and record the test case data for analysis."

Until recently, Redzic's group used an Oracle 9i database for storing automated test results. However, writing stored procedures in the Oracle PL/SQL development language was so time-consuming that the team shied away from making changes to the database. In order to achieve a closer interaction between the development environment and the database, the group had adopted the Microsoft® .NET development environment in mid-2003. In addition, the Motorola-developed test management tool that the group used employed Microsoft SQL Server™ 2000 as its database, and the team wanted to work with compatible technologies in all phases of its work.

### Solution

For two years, the team had wanted to migrate its Oracle 9i database to SQL Server 2000—in preparation for a later upgrade to SQL Server 2005—but was intimidated by the complex process of transferring all the triggers, stored procedures, and sequences from one database to another. The team was stalemated until the local Microsoft representative introduced them to a new Microsoft tool called the SQL Server Migration Assistant (SSMA). "We met with a Microsoft Services consultant who ran a quick test on our database and schemas and informed us that the task would be straightforward and simple," Redzic says. "We were elated."

## For More Information

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[www.microsoft.com](http://www.microsoft.com)

For more information about Motorola products and services, visit the Web site at:

[www.motorola.com](http://www.motorola.com)

## Microsoft Windows Server System

Microsoft Windows Server System integrated server infrastructure software is designed to support end-to-end solutions built on Windows Server 2003. It creates an infrastructure based on integrated innovation, Microsoft's holistic approach to building products and solutions that are intrinsically designed to work together and interact seamlessly with other data and applications across your IT environment. This helps you reduce the costs of ongoing operations, deliver a more secure and reliable IT infrastructure, and drive valuable new capabilities for the future growth of your business.

For more information about Windows Server System, go to:

[www.microsoft.com/windowsserversystem](http://www.microsoft.com/windowsserversystem)

Microsoft used SSMA to quickly analyze the Oracle database stored procedures, functions, triggers, and business logic objects and determine if they were compatible with SQL Server 2000. Within a few minutes, Redzic learned that they were. Next, Microsoft and Motorola used SSMA to convert the database schema with a single mouse click. "This step alone would have taken our skilled DBA (database administrator) several days, but with SSMA it took just a few minutes," Redzic says.

Once the schema was produced, Microsoft used SSMA to migrate the data into the new SQL Server 2000 schema. This step took just a few hours, because SSMA automatically produced the scripts necessary to move the data. SSMA also automatically converted the business logic inside the database, and Microsoft Services performed additional manual external business logic conversion. Lastly, Motorola used SSMA to automatically test and validate the migration process.

## Benefits

- **One-day migration.** Typical database migrations can take an average of six months; the Motorola migration took just one day. "This migration would have taken our DBA at least a month to execute using traditional means, if we would have attempted it at all," Redzic says.
- **80 percent savings.** Motorola saved the cost of a DBA spending a month on database migration—approximately U.S. \$5,000–6,000.
- **100 percent data accuracy.** Moving sequences from Oracle to SQL Server 2000 was not only fast and easy but accurate. "The mapping of tables and translation of triggers and sequences were 100 percent accurate," Redzic says.
- **Access to SQL Server 2005 capabilities.** With its test database migrated to SQL Server 2000, Motorola has an easy upgrade path to SQL Server 2005, which will have greatly improved availability, scalability, analysis services, and reporting capabilities. The company will also be able to use Web services to integrate additional test applications from other Motorola groups.
- **Increase in developer productivity.** A significant benefit of the Motorola migration to SQL Server 2000 has been easier database development, contributing to faster time-to-market for new phones. With SQL Server 2005, even greater increases in productivity are expected. Developers will be able to execute .NET code from within SQL Server 2005, providing more flexibility and richer database capabilities.

## Software and Services

- Microsoft Windows Server System
  - Microsoft SQL Server 2000
- Technologies
  - Microsoft .NET Framework

- Microsoft SQL Server Migration Assistant

## Hardware

- Dell PowerEdge 6850 server

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