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## Banco Itaú Banks on Microsoft .NET Platform to Help Move Its Customers into the Future



*Banco Itaú developed and deployed a Web-based online payment solution for its customers using the Microsoft® .NET Platform and other Microsoft technology. Application development was done using Microsoft Visual Studio® .NET and the Microsoft .NET Framework. The solution was deployed using Microsoft Windows® 2000 Advanced Server, Microsoft SQL Server™ 2000, and Microsoft Host Integration Server. Developers benefited from enhanced productivity, including the ability to leverage existing skills and reuse existing code.*

### Profile

Banco Itaú is the second largest bank in Brazil with R\$7.7 billion (about US\$3.2 billion) in shareholders' equity and R\$81.7 billion in assets.

### Business Need

Platform for developing and deploying Web-based online payment system for its customers.

### Benefits:

Reusability of code, enhanced productivity, security.

### Microsoft Technologies/Products Used:

Microsoft® Windows® 2000  
Advanced Server  
Microsoft .NET Framework

- ASP.NET
- ADO.NET
- ASP.NET Web Forms
- ASP.NET XML Web services
- .NET Enterprise Services & COM+

Microsoft Visual Studio® .NET

- C#

Microsoft Internet Information Services 5.0  
Microsoft SQL Server™ 2000  
Microsoft Host Integration Server

### Hardware

Compaq servers

### **Company Overview**

Banco Itaú is the second largest bank in Brazil, with more than 10 million customers, 2 million of them already using the company's Internet banking, totaling 750,000,000 transactions a year. Banco Itaú has been recognized with a number of awards, including: "Best Domestic Bank in Brazil - Nov/2001" (Emerging Markets Investor Magazine), "Best Brazilian Bank - 2000" (Latin Finance magazine), "Best Bank in Latin America - 2001" (America Economia magazine) and "Excellence Award 2000 - Best Domestic Bank in Latin America" (Euromoney magazine).

An early adopter of electronic banking, Banco Itaú owns the largest private ATM network in Brazil. The bank prides itself in being at the forefront of international competition in banking technology, and has benefited from significant cost reductions and increased productivity as more than 70 per cent of all its customer transactions are completed through self-service.

### **Business Challenge**

Banco Itaú wanted to offer its customers the convenience of making online payments to public service provider companies for services such as telephone, water, and utilities. To meet this challenge, the bank needed the best platform for developing and deploying a Web-based solution that could integrate with its mainframe systems.

### **Solution**

Banco Itaú used Microsoft Visual Studio .NET and the Microsoft .NET Framework to create a Web-accessible version of its Public Services Payment System, and integrate it with its Web-based Internet Banking System. The solution is deployed using Microsoft Windows 2000

Advanced Server, Microsoft SQL Server 2000, Microsoft Host Integration Server, and Microsoft Internet Information Services 5.0.

Customers can now go to the Web site of a participating public service provider company, navigate to the bill they want to pay, and transparently link into the Banco Itaú system. The customer logs in with current account information and password, and makes the payment.

The solution has been a big hit with customers, and with Banco Itaú, as it continues its reputation for leading the way in deployment of great technology.

“We pride ourselves in providing industry-leading technology for our customers, and that is what we are able to do when we build our applications using Microsoft Visual Studio .Net,” said Arnaldo Pereira Pinto, Banco Itaú Internet Systems Division Manager.

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Internet Systems Division Manager  
Banco Itaú

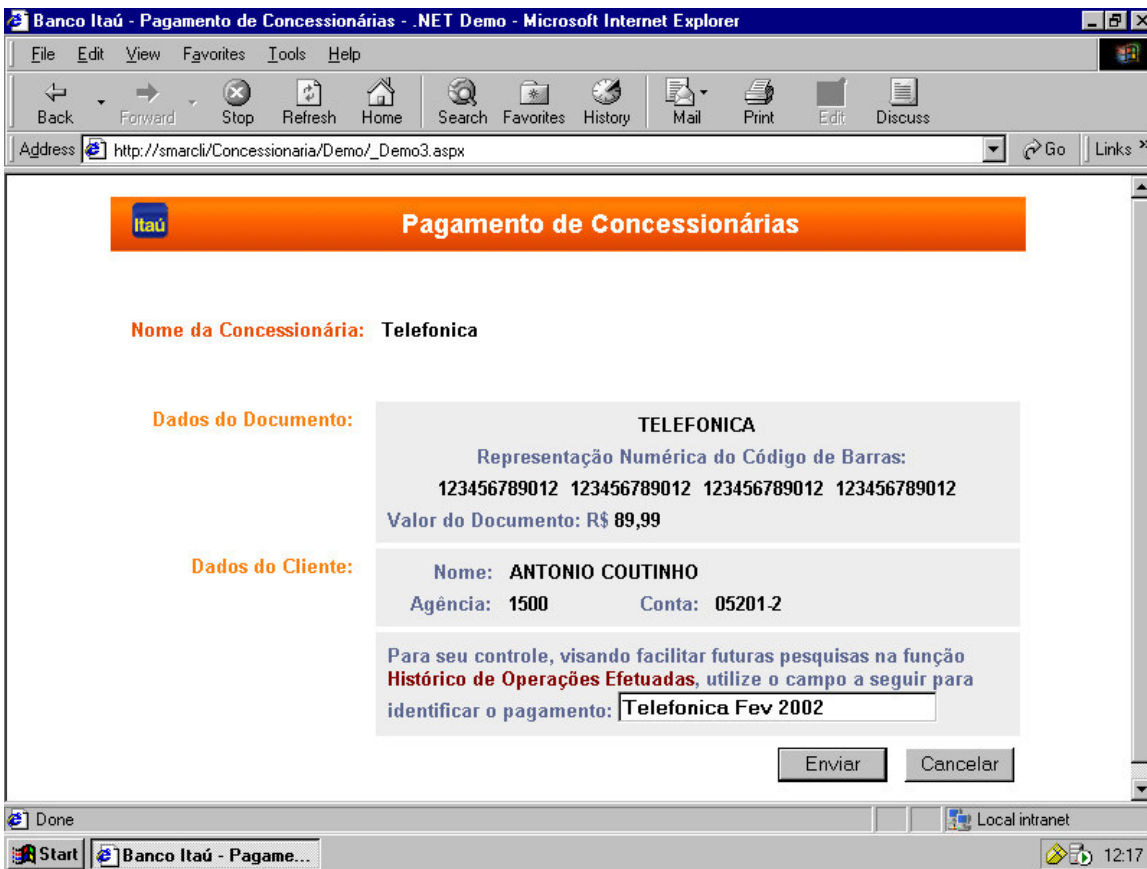


Figure 1. The Web-based Banco Itaú system makes it easy for customers to make online payments, as shown above with a telephone account.

## ***Benefits***

### ***Reusability of Code***

Visual Studio .NET and the Microsoft .NET Framework made it easy to accomplish a critical goal of the project -- reusability of the code used to communicate with the bank's mainframes, where the logic of the banking transactions resides.

"From our earlier ASP application, we had C++ components that talked to the host by way of SNA Server, exchanging the data required for each step of a transaction," said Banco Itaú's Marcelo Lima, Lead Software Design Engineer.

"We didn't want to have to rewrite the business rules," said Lima. "Our new .NET application uses COM Interop, which provides an easy, and extremely reliable way of working with COM components, no matter in which language they were built."

### ***Enhancing Productivity***

Lima said Visual Studio .NET and Microsoft IntelliSense® technology enhanced productivity.

"The Visual Studio .NET development environment is clear and well organized, with what seem to be simple but very helpful features, such as the list of opened files above the text editor, and IntelliSense which provides a concise explanation of the usage of the methods, and an HTML editor that generates clean and indented code," Lima said. "The validators made it easy to verify data entered by the customers, such as login information and transaction confirmations. This saved us coding time. We were also able to create consistency at the client level that avoided unnecessary page hits on our server. "

### ***Using XML Web services***

Banco Itaú is already working on a new release for its application that will support real-time reporting of payments. Lima says XML Web services – created using Visual Studio .NET and the Microsoft .NET Framework – will play an important role in building this new functionality.

With the new system, a provider company will be able to create a URL that the Banco Itaú application can call to notify the company that a payment has been made. To assure security, all communication would be encrypted.

"Because different provider companies have different platforms, we don't want to have to create and maintain different versions of our components," said Lima. "By creating an encryption XML Web service, we only have to update the code at one location."

The Microsoft® .NET Framework is a platform for building, deploying, and running XML Web services and applications. It provides a highly productive, standards-based, multi-language environment for integrating existing investments with next-generation applications and services as well as the agility to solve the challenges of deployment and operation of Internet-scale applications. The .NET Framework consists of two main parts: the common language runtime and a hierarchical set of unified class libraries that includes a componentized version of Active Server Pages called ASP.NET, a loosely coupled data access subsystem (ADO.NET), and an environment for building rich Windows-based applications (Windows Forms).

Microsoft® Visual Studio® .NET is the rapid application development (RAD) tool for building next-generation Web applications and XML Web services. Visual Studio .NET empowers developers to rapidly design broad-reach Web applications for any device and any platform. In addition, Visual Studio .NET is fully integrated with the .NET Framework, providing support for multiple programming languages and automatically handling many common programming tasks, freeing developers to rapidly create Web applications using their language of choice. Visual Studio .NET includes a single IDE with RAD features for building Web applications and middle-tier business logic, and RAD XML designers for working with data. More information about Visual Studio .NET can be found at <http://www.visualstudio.net/>.

## ***For More Information***

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