

Microsoft **Commerce Server 2000**

SuperPawn.com

SuperPawn.com builds agile Web infrastructure on Microsoft .NET Enterprise Servers

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Microsoft® .NET enterprise servers provided SuperPawn with the critical e-business infrastructure it needed to quickly and cost-efficiently build its new Web site. SuperPawn.com was deployed in December 2001 to offer shoppers access to the company's diverse inventory through an online product catalog, as well as convenient online ordering through order desk and help desk components. In addition to enhancing the customer experience, the Microsoft solution also gives corporate managers powerful site management tools that expand business awareness and improve employee and customer relationships.

Situation

When SuperPawn opened its doors in 1875, the foundation for business success was a storefront that offered needed products or services, backed by a solid business plan. Not so in today's Internet-savvy marketplace. An Internet presence is a minimum requirement to remain competitive—and SuperPawn.com is extending the reach of the company's 35 storefronts well beyond the traditional pawn/retail experience. The e-commerce Web site, which gives shoppers access to the company's diverse inventory, allows customers to order merchandise, as well as gather information about products and services, online. SuperPawn.com includes a product catalog, order desk, help desk, and contact management elements and is expanding SuperPawn's high standards for innovation, professionalism, and customer service to the Internet.

With a computing environment already mostly Microsoft-based, business managers determined that a solution built on Microsoft .NET enterprise servers would have the e-business infrastructure software needed to allow developers to quickly and affordably produce a manageable e-commerce Web solution that could integrate with legacy technology and leverage existing code base and expertise. In addition, Microsoft Commerce Server gave SuperPawn's decision-makers

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Solution Overview

Customer Profile

First opening its doors in Seattle, Washington in 1875, today, SuperPawn is America's best re-seller of pre-owned merchandise. In December 2001, SuperPawn launched SuperPawn.com to offer the inventory of its 35 stores on the World Wide Web.

Business Situation

To extend the reach of its retail stores, SuperPawn needed a Web site where customers could order merchandise online. With extensive code and custom applications in its existing enterprise, a comprehensive site development tool was required that could accelerate integration of applications as well as scale up rapidly as the site grows.

Solution

The e-business solution provided by Microsoft gives SuperPawn customers a view of all merchandise available for purchase online. The "out of the box" functionality saved SuperPawn 8-12 months of development time, and the solution scales quickly to meet increase site demands.

Software and Services

Microsoft® Commerce Server 2000
Microsoft Exchange 5.5
Microsoft SQL Server™ 2000
Microsoft COM+

Scenario

B2C

Hardware

5 Hewlett Packard LC2000 Servers

the management tools to analyze consumer data and translate it into valuable business intelligence so developers can modify the Web site and business pipelines accordingly.

Solution

SuperPawn's Microsoft e-business solution gives customers a consolidated view of the more than 100,000 items available for purchase from SuperPawn retail stores—the Web-based front-end creates a virtual Internet storefront for the company's 35 retail brick and mortar stores, giving customers a consolidated view of all available merchandise. The rich feature set of Commerce Server allows SuperPawn to use Microsoft SQL distributed queries and COM+ technologies to integrate and communicate with existing systems running Microsoft Windows NT® and SQL Server across the company's entire enterprise. "While the components are written in Borland Delphi, they are actually standard Commerce Server pipeline components, with the shell initially created using Microsoft Visual C++® and ATL. Staff came quickly up to speed with the Commerce Server Order Dictionary interactions and manipulated this dictionary directly within the components—essentially we followed the Microsoft component behavior as much as possible, then we actually extended the model to accomplish our objectives," explained Marco Herrera, Chief Information Officer for SuperPawn.

SuperPawn developed COM+ components in-house, as well as pipeline components to verify stock, perform credit card validation, notify stores of an Internet order, and send customer e-mail notifications. Developers created components to handle business rules for shipping and tax calculations and also wrote custom business components to handle the display of inventory images and order fulfillment.

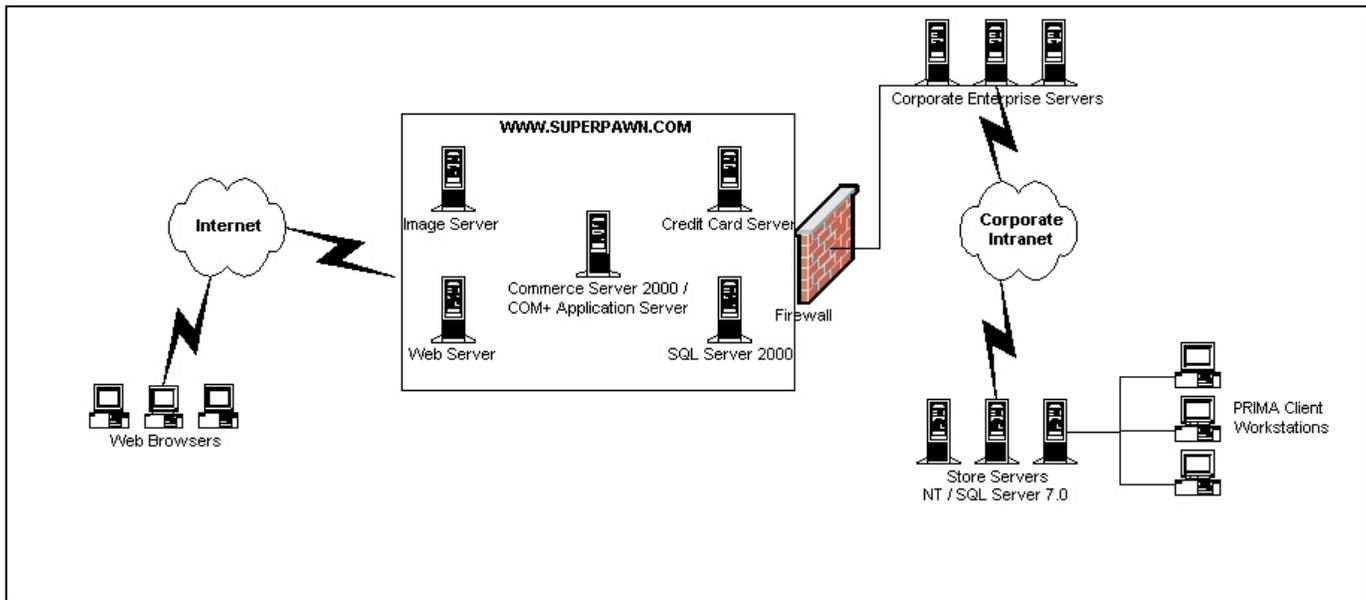
The SuperPawn.com solution is based on the three-tier logical architecture recommended for Microsoft platform-based solutions. The presentation and business logic tiers reside on a server running Windows® 2000 Advanced Server and Commerce Server 2000, with the presentation layer generated via ASP (Active Server Pages) that communicates with the COM+ business layer.

The data services tier resides on a separate server running Microsoft SQL Server 2000. The COM+ business objects access the data services tier via ADO queries. Catalog data from SuperPawn's retail stores is replicated periodically to the Commerce Server 2000 catalog schema, residing on the SQL Server 2000, to synchronize with the existing inventory from the company stores.

When an order is placed, a real-time stock check is performed to ensure item availability at each store. During checkout, a custom COM+ business object saves the order via a distributed transaction between the enterprise server running SQL Server 2000 and SuperPawn stores, which are running SQL Server 7.0. COM+ and the DTC ensure the data integrity of orders across the multiple servers. When an order is fulfilled by a store, a remote procedure call is made from the store to the Commerce Server business tier to handle the fulfillment and update the data services tier appropriately. The following system diagram illustrates the process.

"Commerce Server 2000 saved us months of proprietary development by allowing our developers to quickly and easily integrate custom components to leverage our existing systems."

Marco Herrera
Chief Information Officer
SuperPawn



SuperPawn's complete catalog integrates with Commerce Server 2000. "Through a system of proprietary data replication, we are able to maintain the Commerce Server 2000 catalog coordinated with our own catalog," noted Herrera. An API interface is used for real-time interactions between the Commerce Server and SuperPawn's in-house product, PRIMA™. With a system of real-time distributed inventory, completely integrated with the existing enterprise system and stores, an item purchased on the Web can come from any of the store locations; the availability of any unique item is verified prior to finalizing the Web transaction by remotely checking the store's inventory in real time.

To accomplish this functionality, SuperPawn began with an extensive catalog of inventory, originally based on the Association of Retail Technology Standards (ARTS) retail schema, then developed a four-level categorization schema to manage the uniqueness of its items. Items are not SKU-based. Essentially, the merchandise categorization of nearly 300,000 items is driven through an expert system approach, with items classified by Area, Department, Class, Style, and Manufacturer and Model. Pertinent data is merged with SuperPawn's Commerce Server catalog twice daily so the two catalogs remain synchronized. Transactions are handled in real time, allowing immediate inventory adjustments on sold items.

Benefits

Advanced Business Analytics

The advanced business analytics and centralized management features of Commerce Server 2000 allow SuperPawn's business managers to collect large amounts of profile data on customers as well as alter the type of data collected to meet their targeting objectives. According to Herrera, "The extensive reporting structure, as well as built-in reports, lets us design promotions and evaluate the effectiveness of our efforts." While the data collection and targeting features of Commerce Server 2000 are only partially utilized at the present time, SuperPawn anticipates developing profiling and marketing personalization to target customers for specific merchandise; for example, items that are available only to specific levels of security access (such as firearms, which can be purchased only by licensed dealers).

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Ease of Integration

Because Commerce Server 2000 offers users a less complicated and less time-consuming way to build tailored e-commerce solutions, it gave SuperPawn developers the critical components they needed to build the company's online business and quickly integrate new technologies with existing SQL Server 7.0 and SQL Server 2000 databases. Herrera described that, "With a lot of stored procedures, we needed to be able to 'plug and play' with our existing computing environment. We got just what we needed with the solution from Microsoft, especially from Commerce Server 2000's COM/COM+ integration—it worked extremely well for us."

Reduce Time-to-Market with "out of the box functionality"

One of the primary benefits of using the solution provided by Microsoft to develop SuperPawn's Web site was reduced time-to-market. "Although we started small, we wanted to jump start development—to do that, we used the Retail Solution Site included with Commerce Server 2000," said Herrera. Its built-in functionality reduced the complexity and time required to build and deploy the site, saving SuperPawn an estimated 8 to 12 months of development time. The entire SuperPawn.com site was fully functional in less than 5 months.

Because SuperPawn's internal development team was small, management originally investigated various third-party solutions, but these solutions were not only cost-prohibitive, many of the companies offering them are no longer in business. With its Microsoft e-business solution, SuperPawn was able to build its e-commerce retail site, quickly embellish it graphically, develop some pipeline components to perform business logic, and actually integrate it into the existing database environment—it was a natural fit of catalog schemas. SuperPawn accomplished its e-commerce objectives with a staff of one ASP developer, one HTML developer, and a few senior-level developers supporting the COM+ and API interfaces.

With the Commerce Server 2000 platform, developers used existing resources and code base to easily integrate the company's business logic into custom COM+ objects. Instead of being forced to write complicated distributed queries, that process was avoided using the power of COM+ and DTC. "As an example," Herrera noted, "Commerce Server 2000 allowed us to rapidly develop and deploy a discount and advertisement strategy through its rich set of features and integrated environment."

Looking Ahead

During the next six months, SuperPawn expects to add new functionality to its site to increase sales—it plans to do so by taking advantage of the Commerce Server 2000 Targeting System, which will allow managers to conduct targeted marketing campaigns. In addition, developers look forward to utilizing the personalization features of Commerce Server 2000 to dynamically customize the site based on information being gathered during customer registration. Herrera concluded by saying, "Our Microsoft e-business solution is helping us raise the bar for loan/sales/inventory processes in the pawn/retail marketplace—by the end of 2002, we expect Internet sales to exceed \$1.5 million."

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The .NET Enterprise Servers are Microsoft's comprehensive family of server applications for building, deploying and managing next generation integrated Web experiences that move beyond today's world of standalone Web sites. Designed with mission-critical performance in mind, .NET Enterprise Servers provide fast time to market as well as scalability, reliability and manageability for the global, Web-enabled enterprise. They have been built from the ground up for interoperability using open Web standards such as XML. The .NET Enterprise Servers are a key part of Microsoft's broader .NET strategy, which will enable a distributed computing model for the Internet based on Internet protocols and standards in order to revolutionize the way computers talk to one another on our behalf.

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