

Introducing IBM Store Integration Framework

Technology infrastructure for the on demand store



Overcoming changing retail **challenges**

Value. Consumers demand it. Yet it is becoming harder for retailers to deliver in the face of increasing customer expectations, shorter attention spans and wavering loyalty. Profitable operations depend on it. Process disconnects and the cost of addressing changing customer expectations present constant challenges. By now, most large retailers have introduced novel uses of technology into their service mix in attempts to create value for consumers and themselves. However, as technology continues to reshape the retail environment, it is becoming increasingly challenging for retailers to strike a balance between creating value for consumers through improved convenience and personalization, and containing the cost of implementing and supporting these customer-driven enhancements.



Compared to a decade ago, the consumer shopping experience has changed dramatically. Integrated, multi-channel retailing is becoming the norm. While the store remains the hub of the customer experience, the Web and new technology devices have empowered consumers and opened new venues for evaluating and purchasing goods around-the-clock. As consumer relationships evolve, retailers must differentiate themselves by delivering targeted incentives that motivate purchases. To develop these incentives, retailers must leverage an intimate knowledge of their customers and provide superior customer service across delivery channels. At the same time, global expansion, market saturation and the proliferation of retail “supercenters” have made it imperative for retailers to optimize all aspects of store operations—from eliminating unnecessary costs by streamlining processes to improving productivity by empowering employees with realtime information. Most important, retailers need to provide consumers with a focused shopping experience that reinvigorates loyalty and increases profits.

Moving forward, creating an on demand store environment—one that enables you to respond dynamically to customer and employee needs—will be key to aligning consumers’ evolving requirements with business imperatives. IBM believes that accomplishing this will require the development of an integrated store infrastructure that can support realtime delivery of information and services to the consumer, as well as to customer-facing store associates, at every point in the shopping experience, including pre-store, store entry, purchase decision, transaction and post-sale support.

The challenge is to rapidly migrate from single points of sale to multiple points of service using a myriad of pervasive consumer-focused systems that are enabled by wireless technology. To this end, IBM is developing the Store Integration Framework to support e-business on demand™ in the retail store environment.



The Framework in action

A grocer can use the Store Integration Framework to equip his stores’ shopping carts with an innovative personal shopping assistant device. The assistant will communicate targeted offers to shoppers while they are making purchase decisions. It will also save customers time by enabling them to preorder foods from the deli and be notified when their order is ready for pickup. Not only will this eliminate time spent standing in line, it will help save the store labor by scanning most items as the customer shops, reducing the workload at the point of sale.

Building an on demand foundation from the store up

e-business on demand represents a synthesis of business and information technology. Until now, the majority of e-business solutions for the retail environment have focused on the enterprise level, establishing a Web presence and subsequently integrating the corporate site with back-end processes.

The store is the hub of the consumer experience—and the nerve center of business operations. As a forward-thinking retailer, you need to establish store operating environments that enable you to deliver a superior customer experience through easy access to information, a choice of service styles and an empowered team. To accomplish this, your company must forge on demand operating environments that allow you to do the following:

- Run stores effectively and efficiently through expert managers
- Optimize labor and inventory management
- Improve collaboration capabilities with trading partners
- Connect and synchronize store processes with those of the head office
- Create a resilient and adaptable environment that supports around-the-clock operations.

Your move to an on demand operating environment can begin through the Store Integration Framework. The Framework will provide a customizable, comprehensive solution for creating a technology environment designed to more easily connect consumers and employees to critical information. It will also help facilitate the effortless exchange of store data with central offices.

A comprehensive technology framework for on demand store operations

The Store Integration Framework is a store-level Web services architecture that is designed to provide a complete and reliable infrastructure for overhauling business processes to better support today's demanding retail environment. It can help to deliver new consumer services by integrating information sources with mobile or fixed customer and employee touchpoints throughout the store. Based on open, industry standards, the Store Integration Framework will help provide a technological foundation for on demand store environments that allows you to easily "snap in" wireless devices and independent software vendor (ISV)

applications to speed time to value. This will not only help make it easier for you to adopt new applications and devices, it will also allow you to leverage existing investments in point-of-sale (POS) technologies by integrating them with the rest of your store environment.

From a process standpoint, the Store Integration Framework will help provide a technology-driven information conduit to facilitate realtime access to sales data and allow for quick, consumer-driven adjustments to sales tactics. For example, once customers confirm their identities, Framework-enabled store systems could automatically evaluate past purchases and present a targeted promotion based on a shopper's unique preferences.

To understand how the Store Integration Framework is working to make this possible, it is useful to compare the relationship of applications and devices in an existing retail architecture with those in the Framework.

Typical Existing Retail Architecture

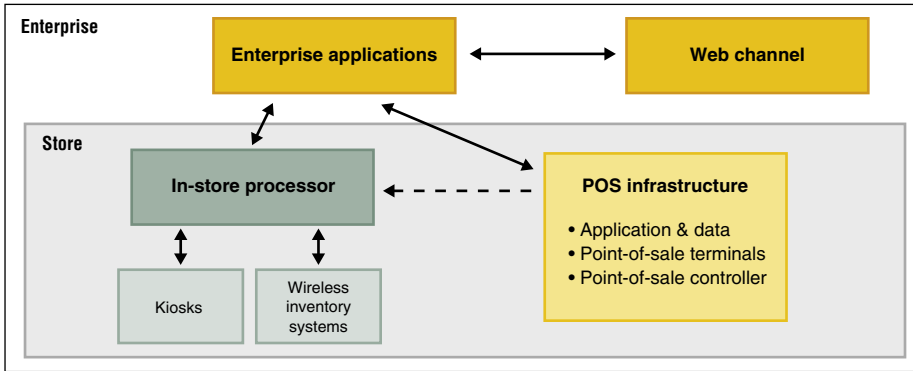


Figure 1

Figure 1, which is an example of a typical existing retail architecture, highlights the lack of continuity in business processes in today's store operations. In this environment, developing a single, coherent view of the customer is difficult, as is presenting a unified view of your business to the customer. In this environment, the Web channel, customer kiosks, POS systems and wireless inventory solutions are built as application silos, sharing little customer data and inhibiting the retailer's ability to provide targeted information and promotions at every customer touch point. It also isn't possible to monitor realtime sales performance, and it is challenging to deploy new consumer services, such as those based on wireless technology, because they add another layer of complexity to an already disjointed environment.

The On Demand Operating Environment for Retail

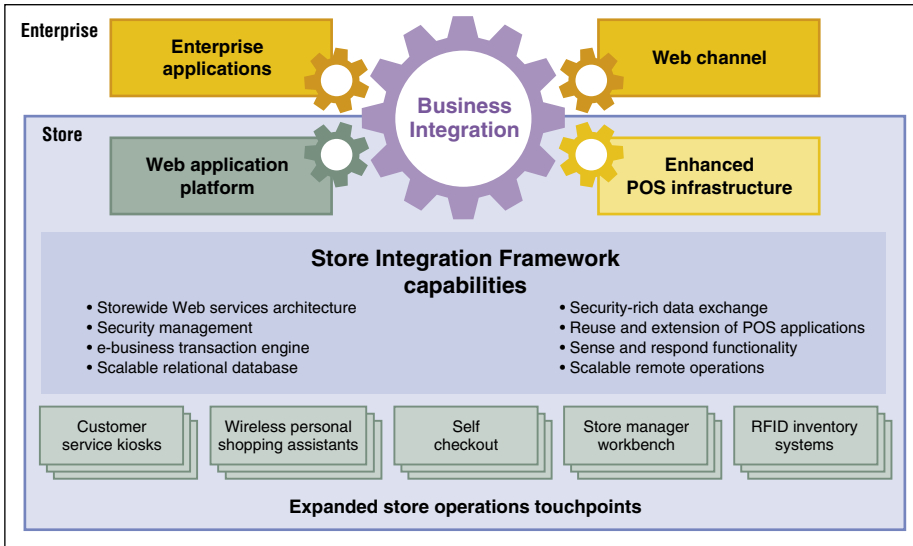
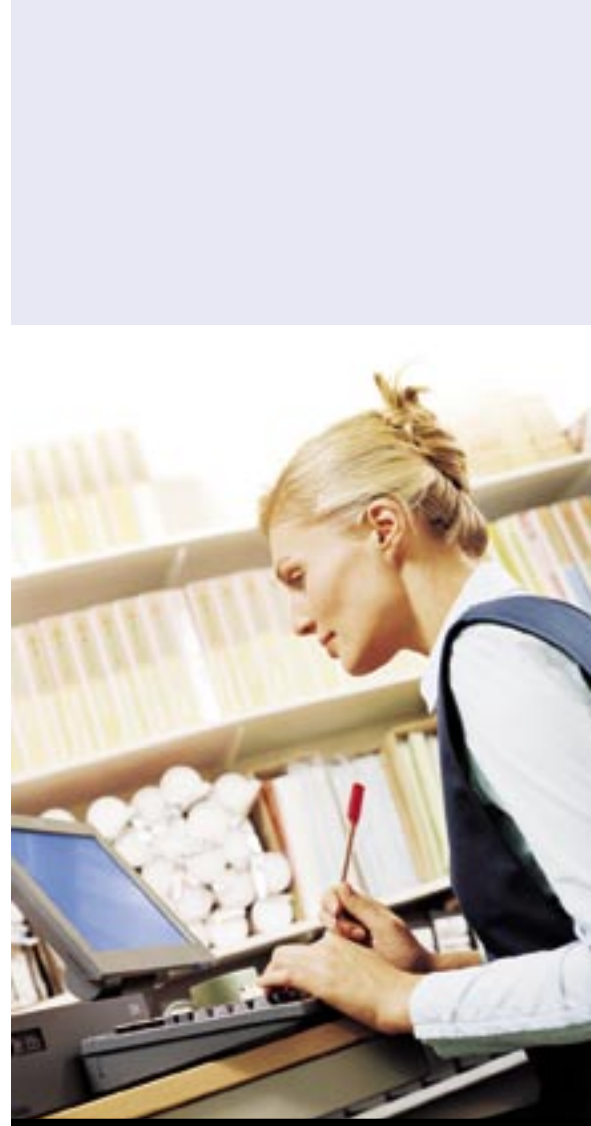


Figure 2

In contrast, Figure 2 shows how the industry-standards-based Store Integration Framework is designed to help allow you to “snap in” new leading-edge wireless devices and retail applications with existing solutions. For example, you could obtain



The Framework in action

A mass merchant retailer can take advantage of the Store Integration Framework to enable managers to view sales information in realtime and respond rapidly to requests for cashier assistance no matter where the manager is. Employee productivity can be increased and customer delays can be reduced.



The Framework in action

A fuel and convenience store can leverage the Store Integration Framework to target customers at self-service fuel stations with promotions that would encourage them to seek out additional goods and services inside the store, which would help drive profits and reinvigorate customer loyalty.

easier access to critical transaction logs or the ability to add POS functions and extend existing POS functions to the Web. And devices such as wireless handhelds, tablets and kiosks can be driven by the Framework, which will be capable of delivering individual applications to multiple types of devices. Retail executives will find that the Framework facilitates realtime monitoring of sales performance in stores and supports the deployment of new devices that enhance the consumer and associate experience.

Overall, the Store Integration Framework is designed to help revitalize your store operations by:

- Delivering a superior customer experience to reinvigorate loyalty and motivate spending. Enhance your ability to configure applications and devices that provide your customers with easier access to targeted information—through multiple channels—for a more personalized shopping experience, while responding more quickly to their demands. For example, through digital media displays on the selling floor, on shopping carts and at the POS, you can deliver compelling offers to customers as they make purchasing decisions.

- Streamlining store operations to help remove costs. Realtime access to sales data and customer and employee activities can help you reduce fraud and more efficiently manage labor and inventory processes to drive out costs. For example, managers can closely monitor sales and return data for anomalous patterns that may reveal fraudulent returns or other suspicious activities. They can also optimize labor by using up-to-the-minute sales information to deploy associates in “hot spots” to serve customers and maintain inventory.
- Empowering your people for improved productivity. Employees can become “instant experts” and provide superior customer service with the help of easy access to product and customer information, anywhere in the store. For example, a sales associate could use a wireless device to help answer a customer’s questions about a high-cost, complex electronics product, making it more likely that the associate can close the sale and keep the customer from shopping around.

Store Integration Framework solution building blocks

Although the complete Store Information Framework is built using a number of IBM components, IBM understands that retailers have unique needs when it comes to their IT infrastructures. Consequently, you have the option of configuring the Framework as an end-to-end solution or choosing a subset of components based on your imminent business needs and then adding others as your needs evolve. The IBM Store Integration Framework includes the following components:

IBM Data Integration Facility—Provides a data exchange tool that enables information sharing between POS systems and other store information systems, allowing you to quickly act on sales results and update product assortments.

IBM WebSphere® Application Server¹—Provides a high-performance, extremely scalable e-business transaction engine that is optimized for the retail market. It is J2EE™-compliant.

IBM WebSphere MQ family of solutions¹—Connects your business-critical systems with robust message delivery that is optimized for retail.

IBM DB2® software¹—Provides an industry-leading, highly scalable relational database, which supports store-level information and 24x7 operations.

IBM Tivoli® management software suite¹—Helps provide world-class security-enhanced configuration and monitoring capabilities for your in-store on demand operating environment.

The Framework in action

A general merchandise retailer can empower employees to more productively serve customers and close sales with the help of Framework-enabled wireless customer-service tools. As employees circulate on the selling floor, they could use shopper profiles to provide more personalized service. They might also access information about products for customers, including which store locations currently have an item in stock. And when the customer says, “I’ll take it,” employees will be able to complete the transaction on the spot.

Understanding Web services

An emerging open-standards-based software architecture, Web services are simplifying the task of integrating disparate sources of information and redefining inter- and intra-company collaboration. Web services can help retailers recognize customer spending patterns and better align inventory with changing demands by enabling individual stores to create realtime connections among key business processes. By building Web services into the Store Integration Framework, IBM is leveraging our leadership position to introduce this technology into the store environment.



In early 2004, IBM plans to introduce Store Integration Framework components that provide the following features and benefits:

- A Java™ 2 and Web services interface that can help you reuse and extend existing POS business logic and provide POS functions at many points throughout the store. This facilitates the use of innovative checkout strategies.
- A retail-specific extension to the Web application server that enables the integration of multiple customer-service applications with multiple customer-service devices throughout the store. This can help applications sense and respond to changing customer demands in realtime to improve the customer experience.
- A Java-based toolkit that allows you to create an easy-to-use, graphical POS user interface to improve employee productivity.

IBM: A one-stop shop for technology value

With more than 30 years of industry experience, IBM has a strong track record of working closely with retailers around the world to deliver comprehensive services and best-of-breed technology that meet their unique needs. More than 60 of the top 100 retailers worldwide use our rugged POS systems. There are over 2 million IBM POS systems installed worldwide.

And WebSphere software customers include 93 out of the top 100 Fortune companies.² Plus, all of our Retail Store Solutions offerings are developed using the careful planning and rigorous reliability standards you have come to expect from IBM.

The Store Integration Framework combines our past experience with our vision of e-business on demand to help you create open and standards-based store environments that support streamlined, customer-driven operations. By providing a technology foundation that enables the realtime exchange of customer and sales information storewide, the Framework can help you optimize customer service, employee productivity and store processes while reinvigorating customer loyalty. In other words, it can help you create value for your customers—on demand.

For more information

To learn more about the IBM Store Integration Framework and IBM Retail Store Solutions, call 1 800 IBM-CALL, (1 800 426-2255) or visit:

ibm.com/industries/retail/store



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1 IBM Software for Retail Outlets: IBM's program for extending our software technology blueprint to the Retail Store. The program includes pricing considerations for Retail deployments as well as product specific customization settings and installation guides for Retail implementations.

2 Sources: 2002 Fortune 500 and 2002 Fortune Global 500 listings; IBM WebSphere customer list, December 2002.