

## Retail Systems: No Longer Business As Usual

By Steven J. Johnson

Ask any retailer how business is going. You are not likely to hear, "business as usual." Retailers' markets are saturated with stores and merchandise, their distribution channels are clogged with inventory and their customers grow more demanding every day. Rather than let this situation take its course, smart retailers are breaking away from their current business practices and taking concerted actions that will build their strength and guarantee their survival. They know they must respond to the marketplace.

Among the most critical changes a retailer must make are those involving information and technology. A visionary, yet practical strategy can position a retailer to use technology to meet its primary objective: knowing and serving its customers. Not only can information technology help retailers listen more closely to their customers, it also can enable improved quality and customer service. Information technology often carries with it the positive image of innovative leadership. But technology must do more than look good. Above all, it must be purposeful and integrated: Each addition to a retailer's technology plan must link with its existing systems to support a meaningful strategy formulated to meet specific challenges.

### Strategic Forces

A retailer's challenges come from various fronts. In particular, retailers are investing in improved technology to rise above the forces exerted by their consumers, competitors and vendors.

Consumers. The weak economy has slowed consumer spending and resulted in flat market growth. But at the same time, consumers expect retailers to offer more convenience, greater value, improved service and increased quality. Retailers also face America's changing demographics: As the nation's "graying" population and the "baby boomers" and their children rise in spending power, their lifestyles and buying patterns influence the retail business. Furthermore,

consumers are demanding that retailers rise up to meet their environmental and wellness concerns.

Competitors. In the 1980s, retail store operations flooded America. The amount of retail space in the United States has doubled since 1970; for every U.S. citizen, we have 18 square feet of retail space. And we are witnessing an ongoing shakeout of faltering organizations that cannot compete. The industry's leaders—who focus on building market share and differentiating themselves from others—are moving far ahead of the rest.

Vendors. Retailers are beginning to establish strategic partnerships with their vendors, such as manufacturers, mills, wholesalers, distributors and carriers. As

the market becomes more global, retailers must choose their partners from a broad array of vendors around the world. Battling continued cost pressures, they are encouraging vendors to help cut costs in the retail pipeline, eliminate wasted time and improve quality.

#### Responding to New Demands

To be responsive to these market forces, retailers need information systems that enable them to accurately predict and effectively react to trends. Traditionally, retailers have focused on organizational growth and expansion to new locations. But today's sluggish market dictates that retailers focus on the consumer, not the competitor; it is imperative that they shift their attention to who their current and potential customers are and how to reach them. This shift requires retailers to become smarter about collecting and using consumer information to generate profits.

Careful examination of data may show retailers that adding new stores is often not as profitable as shifting existing resources to better target sales. The right data could help determine how a retailer should reposition for greater profits. This data should communicate not only who customers are, but also where they are, what they need and how they spend. The key is to collect this information at the point of sale and process it quickly so it can be used to support the entire retail pipeline, beginning with the buying function and ending at the selling floor.

In marketing, retailers can use systems to analyze external marketing information databases and to gather priceless data about frequent and target customers, such as customer-specific transaction information. Through a variety of new technology applications, they can improve direct marketing skills and increase their capabilities to offer customers home shopping options. Most importantly, information systems can help retailers shift their focus from "what's selling" to "who's buying," and can create a process where

consumers "pull" goods through the pipeline as they want them, rather than having merchandise pushed at them by retailers and manufacturers.

In the store, technology can expand a retailer's ability to offer customer service functions at the point of sale (POS) and at the point of decision. Stores can install customer-operated service terminals for product information, gift registry and orders, or portable POS devices enabling sales associates to take the sales function to the customer or to ease the traffic problems of peak sales seasons. Retailers might also institute a technology-driven frequent shopper program that not only offers customers benefits, but also enables the organization to capture valuable shopper information to refine marketing efforts. Technology can be used as an information tool to empower personnel to make decisions regarding merchandising and customer service. Further, smart systems and workstation-based technology can strengthen the capabilities of the store-level management team.

Retailers must also strive for efficiency by ensuring that every business process is "value-driven." The goal is to work smarter: better, faster and cheaper. One means to this end is to use technology as a productivity tool that cuts waste and improves quality and value to the customer. For example, retailers traditionally have used a variety of replenishment techniques to get items as far as the store back room, but not all the way to the shelf. Quick Response technologies can help speed products to the shelf. But the information system that supports replenishment must be "smart" enough to do this, and the retailer needs a strong communications backbone to ensure information flows through these systems effectively.

In merchandising, productive use and management of data enables retailers to perform quick response replenishment, continuous merchandise planning and flow - managed distribution. They can

implement systems to refine inventory management and restructure work to facilitate pooled clerical support. Through effective process reengineering, retailers can make buying more strategic, freeing the merchandiser's time to define the right merchandise for the market.

In logistics, information systems can help distribution centers manage the increased volumes needed to ship to every store everyday. Retailers can use advance shipment information to schedule and consolidate inbound and outbound freight and to automate material handling equipment. They can also reengineer processes to handle increased volumes of smaller transactions—a direct result of any move to Quick Response.

Retailers have begun to evolve strategic partnerships with vendors. Many retailers are implementing initial programs with first-tier vendors, and the leaders are moving toward additional, "deeper" vendor relations. All retailers expect these partnerships to improve their business and their success with customers. While these relationships typically have been driven by the retailer, retailers and vendors now must cooperate to make their partnerships mutually successful. They must work toward a shared goal: anticipating, meeting and exceeding customer expectations. To do this, both members of a partnership must:

1. Secure senior management's commitment and establish mutual trust.
2. Facilitate communication between the companies across all functional areas (including sales and marketing, production, distribution, logistics, accounting and MIS)
3. Develop a mutual understanding of each other's business and culture.
4. Focus intently on early successes.
5. Work together to reengineer merchandise flow processes.
6. Implement enabling technologies, such as electronic data interchange (EDI), universal product codes(UPC) and shipping container marking(SCM).
7. Monitor performance and make ongoing efforts to improve.

To meet all these business challenges—for consumer-driven marketing, value-driven operations and strategic partnering—retailers can use information and technology. They must apply technology strategically to every facet of their business.

#### The Ideal Technology Vision

To meet their business challenges today and tomorrow, retailers should look for opportunities to grow into the following key technology visions:

Computer systems that are as accessible as the telephone and provide users access through a variety of terminals. The location of both user and computer is becoming less and less important as an almost universal communications network bridges geographic gaps.

Natural computer interaction that mimics the user's human senses. The ultimate intuitive interface will feature multimedia communication, transmitting image, sound, full-motion video and text, employing both voice and handwriting recognition.

Smart systems that go beyond recording and reporting data to be intelligent "agents" that identify a wide array of actionable conditions. To support customer service, smart systems apply knowledge-based logic to suggest or take appropriate actions to conquer business inefficiencies.

New-age client/server architectures that can manage the proliferation of information and growing transaction volumes with a composite of scalable, open technologies.

#### Technology at All Organizational Levels

All these technology visions have direct application possibilities for retailers. Retailers must apply these technological "ideals" to systems that will help their personnel at all levels to better serve customers in the present and predict market demands to assure customer satisfaction in the future.

At the store level, retailers might apply technology in the form of wireless POS devices, a store manager's workbench, a work force scheduling system, computer-

based training for store employees or customer information systems that capture and manage data to enable better marketing and merchandising.

At the distribution center, a retailer might use systems for the center's management, work force scheduling, freight optimization or material handling automation. Distribution centers can profit from paperless and portable systems and Quick Response interfaces that enable them to move goods at the right time, in the right amounts, to the right place.

At the corporate level, retailers might adopt technology to aid in merchandise planning, quick response replenishment, vendor relationship management, market analysis or promotion planning and execution. In addition to "workbench" applications for merchandisers, buyers and planners, the corporate organization could use multimedia electronic mail to improve communication with both internal personnel and external suppliers.

#### Technologies to Watch

Several important technologies are emerging that retailers can implement to achieve their strategic goals. The following are among the technologies to watch in the retail industry:

**Management Workbenches.** At the heart of any retail organization are its management users. For example, store managers need to be equipped with information that enables them to run not just an operation, but a business that may do millions of dollars in business each year. The store manager must be all things to all people—personnel manager, customer service manager, profit manager, local marketing manager, relationship manager and merchandiser. To free their time and improve their business capabilities, retail organizations must provide their store managers with smarter systems—exception-driven systems that can scrutinize problems and recommend solutions by giving actionable options. Workbench systems could classify merchandise by profitability contribution so the store

manager can monitor a product's success, then choose from "best case" solutions for those products that do not meet expectations.

New-age architectures, artificial intelligence and knowledge-based systems are among the tools that make these workbenches possible. Store managers can use artificial intelligence to focus their operational decisions. A store manager's workbench might feature a "to do" list, as well as the ability to monitor key performance indicators and perform what-if analyses. Store managers should be able to measure the buying habits of their frequent customers. Technology may also enable them with a space management tool that analyzes the effectiveness of store and shelf layouts, then prints out a display diagram for employees to follow when stocking shelves and arranging displays.

**New-Age Systems.** New-age systems use intelligent workstations to provide solutions to business problems. They broadly encompass open systems, client/server and cooperative processing. Workstations will enable retailers to automate information gathering and delivery and to increase the flexibility and mobility of their work force. An open systems approach will link together previously incompatible hardware and software. Cooperative processing will change the way people work, letting them focus on the business rather than the underlying technology.

**POS Devices.** A variety of new POS devices are available that can not only collect information, but also help retail personnel manage information more easily and meet customer needs more quickly. For example:

A portable POS terminal scans the SKU (stock keeping unit) symbol on a product, features a credit card swipe for on-the-spot credit authorization or payment, and immediately produces a receipt. Such a device brings the checkout to the customer, eliminates checkout de-

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lay and is helpful in peak seasons and in such departments or businesses as lawn and garden and lumber.

A pen-based POS notepad helps reduce fraud by electronically capturing, recording and verifying signatures.

"Talking shelf tags" inform customers about products on display. The customer simply pushes a button to learn more about a product and make a more informed purchase decision. Not only is this technology informative, it makes shopping fun and relieves busy sales people.

A portable, pen-based notepad is used to survey customers leaving the store without a purchase. The customer answers open-ended questions such as "What do you like about our store?" and "Why didn't you buy anything today?" The system digitizes the respondent's answers, captures the information and enables the retailer to continuously improve, building the customer base by targeting unreached consumers.

Electronic Data Interchange (EDI). EDI, which enables retailers to electronically transmit orders and a wide variety of other transactions, can help eliminate non-value-added processing — a critical move when a retailer processes millions of transactions each year. Establishing a department devoted to partnering and EDI processing is a wise investment.

If EDI is working well, it is invisible. Beyond ordering and invoicing applications, retailers can use EDI to help reengineer business processes with vendors, which can help the vendor improve planning, production and logistics, as well as generally improve the retailer/vendor relationship. The mutual benefits of sound retailer/vendor partnerships bolstered by EDI include improved sales and reduced costs for both parties.

Communication Networks. Because a retailer's information must flow throughout a dispersed network of stores, distribution centers, offices and even outside parties, communication networks are key.

To present its best image to customers, a retailer needs information that is always up to date and technology that enables quick service. For example, customers asked to endure a long wait for credit card verification cause the check-out line to grow; when that line is long, people will begin to leave without purchasing.

Traditional terrestrial, or ground-based networks can support most of a retailer's basic communication requirements, such as credit and payment authorizations and EDI. But most retailers have other systems for voice, electronic mail, facsimile and image exchange. VSAT and ISDN networks, which exchange data in a variety of digital formats (data, video and voice) are taking up the increasing demands for multimedia information transmission and rapid data exchange and verification. The challenge for retailers is to implement an integrated, open communications network that supports all communication methods seamlessly, both within the retail organization and externally with vendors, carriers and financiers.

Bar Code Scanning Technology. The scanners used to collect SKU data are improving so item scanning is faster and more accurate. Once SKU data is scanned and entered into an information system, retailers can tie it to customer data to learn which products are selling to whom.

Another development in scanning technology is the two-dimensional bar code, which holds much more information than standard bar codes. A high-speed scanner reads the two-dimensional code in a zigzag pattern that covers the entire area of the code, as opposed to the one-dimensional method that simply scans once across a code. Thus, the two-dimensional bar code is essentially a portable data store that can carry much more than simple numeric identification information. It can hold data about what a product costs, where it came from, where it is going and how it should be handled en route.

Radio Frequency (RF) Networks. To capture and verify data at distributed locations, retailers traditionally have used terminals with hard-wired communications lines, or they have used stand-alone devices that offer only limited verification and storage capacity. Wireless, RF communication provides retailers with data capture devices that are portable, powerful and allow real-time verification and update. The RF network enables the retailer to use hand-held devices to:

Change prices on the selling floor or in the store back room.

Record sales at the point of decision, then hold transaction information in the system until the customer reaches the register to pay.

Access information on sales statistics, customers and other stores directly from the selling floor.

Provide effective customer service, putting information in the hands of the sales associate.

Card Technology. One of a retailer's most critical technology needs is for information systems at the point of sale to capture customer and sales information. Proprietary credit cards and frequent shopper cards can be a good source of consumer data. When one of these cards is "swiped" through an in-store POS device, the retailer can instantly capture information such as name and address and link it to the purchase decisions of the consumer. The issue of data privacy is alive and well in the minds of consumers, so retailers must be smart and thoughtful about how they use the data they gather. But the retailer can use this information to target specific marketing to each consumer.

Most of today's cards contain only static data. Transactional information must be stored at remote locations, increasing storage requirements and access time. The emerging breed of "smart" cards allows data to be stored, modified and accessed right on the card. Smart cards allow retailers to inexpensively and rapidly gain access to changing customer buying information.

**Electronic Test Marketing.** Test marketing is a traditional means of obtaining consumer feedback on merchandise, but it is expensive and time-consuming. To improve responsiveness, retailers can use information systems to design a range of products online, then share that design with customers and solicit their feedback electronically via in-store kiosk technology. In this way, before the product is even produced, the retailer can obtain consumer feedback to estimate demand for merchandise before making any commitment to vendors.

For example, a multimedia kiosk can be equipped to demonstrate product options to the customer, then invite the customer to suggest changes, rank color, style and fabric preferences and even order products on the spot.

The key to successful implementation is that the technology provide value to the customer, such as product information to make an informed purchase decision, while collecting customer data for the retailer's marketing initiatives.

**Geographic Information Systems.** A geographic information system (GIS) is another tool that can enhance retail marketing. Combined with demographic databases that sort existing customers into such categories as lifestyle and region, a GIS pulls information from the point of sale, then plots both actual and potential customers on a "map." Using smart system technologies, the GIS then can advise a user with options and initiate the user's chosen action. To back up a user's selections, a GIS can even offer profit projections and stocking requirements to expect with each alternative. Applications of the GIS include determining where to go when changing store locations, learning the customer demographics of stores not meeting expectations, fine-tuning the merchandise mix, improving sales, maximizing the profitability of each existing store and examining the success of media advertising and direct marketing efforts.

#### Future Strategies

As consumers demand more and more convenience, retailers will need to explore new avenues for business growth and improved competitiveness. One valuable strategy will be non-store retailing. Non-store retailing is growing at an average rate of 25 percent each year. While it represents less than ten percent of total sales, high sales seasons such as holidays demonstrate the popularity of home shopping. Catalogs and home shopping networks could be a great source of revenue growth for retailers in the future.

Non-store retailing is changing—moving from massive, non-interactive, non-targeted catalogs to interactive and specific media like Prodigy/, which offers a home shopping service, but limited visual appeal. Televised home shopping programs have tremendous visual appeal, but allow little consumer interaction. An alternative that combines the best of both worlds will be the answer for non-store retailing.

Way down the line is "virtual reality" technology. Virtual reality will require more bandwidth, advanced chip technology and great graphics capability, but it will enable true home shopping. With virtual reality, a customer could "try on" hundreds of suits from stores around the world in a virtual environment. Retailers and their vendors will create and immediately deliver products on customer demand. For example, a technology is now in development that will enable clothing retailers to offer made-to-order garments. This technology provides for the customer to be measured by laser and the clothing to be made to fit his or her exact specifications.

Meanwhile, in the realm of catalog retailing, direct marketers have moved to more specific catalogs that target consumers more carefully. To further improve, these marketers can use the data they collect to produce catalogs tailored to region or interest. The next step will be to tie the catalogs to customer information, tailoring each catalog to each consumer and his or her buying patterns.

#### The Evolution Process

Rather than a "big bang" approach, the key to migrating to these new technologies and systems is a phased approach that paces the changes to balance system reuse with system renewal. To get the full benefits of all changes, retailers must:

- Design their systems for desired results.

- Encourage user participation and accountability.

- Establish defined milestones and measures.

- Secure commitments early to develop a sense of urgency and momentum.

- Maintain a sustained push from management.

When changing business processes to work more effectively and efficiently, retailers should focus on quality, speed and value. Above all, they should ask "What would the customer want us to do?" With the processes properly defined, a retailer can begin to apply technology that is appropriately scaled to the business and the application. Retailers must build information systems on proven, "best of breed" technologies and encourage extensive user participation throughout development.

By strategically evolving their systems to incorporate this new information technology vision, retailers will open themselves to improved business practices. Information systems can provide them with the power and flexibility to support consumer-driven marketing, value-driven operations and strategic partnering. Most importantly, retailers that make wise technology investments will be better equipped to meet and respond to the changing marketplace.

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