You walk in to your favorite retail store and spot an item you’d like to purchase. A new app on your smart phone lets you “scan” the UPC barcode, which automatically opens up a search engine that finds the same item for less. A few finger slides and clicks on your phone and the wheels are set in motion for you to receive that item the very next day—and you didn’t even have to wait in line at the register.

Welcome to the new world of retail where mobile technology, wireless networks, and e-commerce have added a whole new dimension to the consumer’s shopping experience—and a slew of challenges for the supply chains of traditional brick and mortar stores. It’s a trend that our experts see gaining momentum, as store sales remain flat and e-commerce business with next-day service levels continue to grow.
It’s all about keeping up with today’s tech-savvy consumer. “Consumers want the ability to order anything, anytime, from anywhere,” says Albert Avalos, global vice president for system integrator, Fortna. “Through social networks, significant backlash is instantly relayed if the experience is not exceptional.”

Thus the pressure is on for supply chains to deliver—literally. “As e-commerce becomes a larger percentage of the shipping volume, it’s taking less of a back seat in terms of the design of the operation,” notes Bob Silverman, senior vice president of supply chain and logistics solutions for commercial real estate firm Jones Lang LaSalle. “More facilities will be set up handling multiple channels with separate picking operations, replenished from a common inventory.”

Kevin Hume, principal with supply chain consulting firm Tompkins International, is experiencing the retail transformation firsthand. “For awhile, everyone was talking about the death of the brick and mortar store,” says Hume. “But we now have the technology for even the stores to be able to ship e-commerce orders.” By functioning as mini-fulfillment centers (FCs) all over the country, stores are able to support next-day shipping more cost-effectively.

Over the next few pages, our three experts shed light on how traditional brick and mortar retailers are making room for e-commerce and multiple distribution channels in their organizations. They respond to key questions and offer their thoughts on how best to go about this transformation. Finally, they zoom in on how warehouse management systems (WMS) and other software solution providers are responding—from offering real-time visibility to available inventory to executing the most cost-effective method of fulfillment to service the most demanding consumer. In an increasingly competitive global retail environment, retailers may have no choice but to go with the flow.

Should you insource or outsource?
For traditional DCs servicing their own stores, adding e-commerce to the fold can be a daunting undertaking. Some may need outside help. The decision to outsource will depend on e-tail’s volumes, according to Silverman. “When volume is low, it makes sense to keep it in-house—one inventory, lower costs.” As volume increases, however, he believes that outsourcing to a third-party logistics provider (3PL) becomes more attractive.

“E-commerce picks are very different and can suffer in a system designed to support larger brick-and-mortar picks,” says Silverman. “Specialized 3PLs focused on e-commerce often have the material handling equipment, systems, experience, and expertise to more efficiently process e-commerce orders than many of their own clients can do in-house.”

As larger throughput volumes eventually magnify the costs associated with splitting the inventory with a 3PL,
it may justify consolidating and designing an operation with multiple picking options, to optimize both the bricks and the clicks’ picks. At some point, even larger volumes result in a facility getting too big. “Separate facilities may be required, and they can each be optimally located based on the different logistics considerations of the channels,” adds Silverman.

**How do we pick?**

For most multi-channel DCs, one of the primary challenges revolves around picking. Many traditional operations are not set up to efficiently accommodate a large range of orders with varying units and lines per order characteristics. “Picking labor is often the single biggest cost within the four walls, and inefficient picking systems can have a huge impact on a DC operation’s costs,” cautions Silverman.

Retail replenishment to stores is typically “pulled” based on point-of-sale (POS) information. “This is usually a pick-to-cart or pick-to-voice/light into totes process, then the totes are consolidated and packed into store shipments,” explains Fortna’s Avalos. In contrast, retail distribution in response to new store openings, specific ads, and promotions are typically “pushed” and achieved using a put-to-store strategy or pack-and-hold operation.

E-commerce orders have a different profile from store orders. “That order profile is typically 1.2 lines per order, with about 30 percent to 60 percent one-line orders,” states Tompkins’ Hume. These orders are typically processed via cart zone picking or zone batch picking. For increased productivity, the single-line or single-unit orders are typically processed differently in a batched, high-speed packing operation in a separate area of the facility.

**How do we ship from stores?**

The ability to ship e-commerce orders from brick-and-mortar stores may be the strategy that most are anticipating. Why? Because processing and shipping from the store that’s closest to the person that wants it is the most cost-effective way to support a next-day shipment.

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**OMNI-CHANNEL CASE STUDY**

**Bare Escentuals’ multichannel, multi-company DC**

Within 10 minutes on her first guest stint on the QVC network back in 1994, Bare Escentuals (BE) creator and executive chairman Leslie Blodgett sold out her entire inventory of mineral-based cosmetics—literally conquering television as her first direct-to-consumer retail channel.

Since then, the California-based cosmetics company has never looked back. It now services wholesale customers such as Macys, Sephora, Ulta, over a thousand spas salons, over 230 company-owned boutiques, and consumers directly through its website, informational, and catalogue operations.

Marketing three brands—bareMinerals, BUXOM (exclusive to Sephora) and md formulations (mostly in spas)—this retailer stands in an elite club because it services a multitude of channels from just a single 400,000-square-foot distribution center (DC) in Columbus, Ohio.

But it wasn’t always that way. In 2006, BE operated a 100,000-square-foot West Coast DC that handled a rapidly growing wholesale and spa salon business, while simultaneously supporting a small retail network of 50 boutiques. A 3PL-run DC in Plymouth, Mich., handled its direct-to-consumer business from the infomercial and the catalogue.

“As we grew, it became that much more expensive to operate a smaller facility from which we were bursting at the seams,” recalls Michael Thompson, BE’s vice president of operations, Americas. “The cost of the 3PL side grew as well. With basically the same product assortment for all channels, we had to split our inventory across multiple places, and since we were growing so fast, we were at a point where we couldn’t meet the demand.”

With a website launch pending in 2007, the company’s logistics team knew that bringing the fulfillment for all the channels into one facility would enable the retailer to make sure that they got the right product to the right people at the right time.

Partnering with supply chain consulting firm Tompkins International, Bare Escentuals planned, designed, and launched its new consolidated facility in 2007. In the operation, full-case, wholesale orders are picked by workers on lift trucks using handheld RF devices while direct-to-consumer orders are batch picked 20 orders at a time directly to shipping cartons by voice-directed pickers with carts. Retail store replenishment and spa salon orders are picked using pick-to-light technology.

Since then, the DC team has been hard at work in search of a tool that could support these two companies in a multi-channel, multi-company distribution model. In early 2012, they selected RedPrairie’s warehouse management system (WMS), going live last July. “We’re less than a year in with the WMS, but we’re already learning the power of having all that information. When you walk through this DC, you see a lot of subsystems in operation,” says Tompkins’ principal Kevin Hume. “Many of these pick-pack operations are channel-specific, leveraging operational processes and equipment designed to reflect the order profile.” In 2010, the team faced even more challenges when Bare Escentuals was acquired by the Shiseido Group in the largest cosmetics related transaction ever. “Shiseido was bursting out of its current Americas facility, so with the acquisition they decided to take advantage of the infrastructure that BE has already built, thus essentially creating a shared services model for all of the Shiseido Group brands,” says Thompson.

For BE, this consolidated model has been an excellent fit. “There’s more flexibility to meet the needs of the business,” says Thompson. He cites how during cyber Monday when the e-commerce business was processing three times the amount of orders, he was able to quickly leverage workers from the other channels. “E-commerce customers want their orders immediately. With consolidated multi-channel facility, we can support demand peaks quickly and internally, achieving that critical speed to customer.”

—Maida Napolitano, Contributing Editor
“Most of the major retailers we’re currently working with will be shipping from their stores this peak season,” says Hume. But the best way to accomplish this will vary by retailer.

According to Hume, some will select key stores that have the largest inventory—and those key stores may be defined by particular mixes of SKUs that they’ve identified as the highest volume of e-commerce items.

“They’re going to stockpile those SKUs at specific stores and make those stores forward-shipping systems, deploying full warehouse management capabilities,” explains Hume. “They may even leverage parcel manifesting technology, pushing the order down to the store where store employees can go out with a paper ticket to pick items off the store shelves and immediately prepare them for shipment.” He adds that store fulfillment can vary by store type. Low end stores may process 10 to 15 orders a day with minimal technology support and, at the other end, larger stores could have the capacity to ship hundreds of orders and require a mini-fulfillment center in the store’s backroom.

Avalos cautions that shipping from stores presents some challenges. “There might be licensing issues with putting warehouse management systems and transportation management systems [TMS] inside the stores. Plus contracts with parcel carriers may need to be modified to handle this strategy.” He also points out how some stores may not even have the space or the labor to pull it off. There also consistently needs to be real-time visibility to available store inventory.

**What systems to use where?**

One of the most critical requirements for an omni-channel retailer’s success lays in the planning and executing capabilities of its WMS and other information management systems.

First and foremost, an inventory management system that spans the entire supply chain gives managers a leg up in achieving real-time visibility—and in some cases might actually save the sale. Rather than having a customer walk away because she can’t find an item, today’s sales associate may be equipped with a handheld mobile device to help her find it in any of the other stores. Some stores have even set up kiosks for customers themselves to check inventory, purchase the items, and have it shipped directly to their homes.

Another critical component to making omni-channel’s “buy from anywhere, ship from anywhere” philosophy possible is a distributed order management (DOM) system. “DOM allows you to find all the rule sets and criteria of how you want to cost-effectively support that next-day shipment.”

—Kevin Hume, principal, Tompkins International

> "DOM allows you to find all the rule sets and criteria of how you want to cost-effectively support that next-day shipment."

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**Omni-channel advice from our experts:**

**Kevin J. Hume, principal with Tompkins International**

“Perform advance planning to determine order profiles and volumes. Once you establish your planning criteria, try to leverage existing investments and the best practices you have today to start the design process.”

“Identify what the orders look like now, but also consider how changes to SKU mix, order profile, or volume could affect your design. You’re never going to project with certainty, so you should perform a sensitivity analysis with low-end and high-end ranges. Evaluate the design to see what configuration can support the widest range of swings.”

“Understand service-levels. You’re not necessarily going to need to ship every item next day. Understand when some items really have to have that highest service level that helps to define the picking capacity and the throughput capacity that you need on a daily basis.”

**Albert Avalos, global vice president for Fortna**

“Ensure you have good visibility to total demand and total inventory.”

“Keep your rules simple. Determine what your priorities are (and make this very clear), because this drives overall DC design, slotting, available to promise and the choice of shipping DC.”

“Determine your service level promise: Will you fulfill an order from anywhere (DC, store, etc.)? Are you willing to hold demand to improve fill rate? Will you allow splitting of orders across DCs to get fill rate with multiple DC shipments?”

Robert Silverman, senior vice president, supply chain & logistics solutions for Jones Lang LaSalle

“Analyze the order characteristics for each channel, and design a system to efficiently pick the orders.”

“Break the orders into order profile categories, and determine the volume of each: for example: (1) large store orders; (2) small store orders (frequently these are replenishment orders); (3) single line, single piece e-commerce orders; (4) multi-line e-commerce orders. Often using different approaches for each order type is the key to greatly increasing picking and packing productivity.”

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**FOR THE COMPLETION OF THE CONTENT:***

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Warehouse/DC Management: WMS Update

However when inventory is scarce and the “bricks and clicks” are sharing inventory with multiple DCs, setting up your DOM becomes especially challenging, says Avalos. “Who gets priority? How do you reserve inventory for each channel? Do you send that order to the store or send it to the DC or split it across multiple DCs?”

Within the WMS, the requirements may be simpler, but just as critical. Consideration must be given to the picking and waving logic that can handle retail order profiles (larger orders) and the smaller e-commerce orders.

“It’s not just the regular pick/pack/ship logic anymore,” says Avalos. “There are more permutations: zone batch picking, multi-order picking, pick and pass, priority processing, multi-carton processing, etc.”

Good cartonization logic coupled with up-to-date weights and measures can streamline packing and manifesting while saving freight by packing orders into the least number of cartons. The TMS must be able to handle service/cost tradeoffs and to track information, not just simply ship to residences and businesses. Real time information exchanges between the WMS and the website to mobile devices is expected—it’s not an option.

“In multi-channel systems, it’s critical to push out the status information in real time,” says Avalos.

In a consolidated multi-channel facility, the warehouse control systems (WCS) may now need to control a wider assortment of material handling systems. “WMS/WCS integration becomes more critical,” says JLL’s Silverman. “The need to know exactly where in the system an order is—specifically where on the conveyor it’s sitting—is greater with short windows between dropping orders and shipment cut-off.”

“When the WMS does not have the sophistication needed, many times the WCS makes up the gap,” adds Avalos. He cites how in some DCs the WMS may be controlling the processing of store orders, while WCS controls e-commerce fulfillment where specialized picking and processes are needed. “This is not always the best option, but is usually a ‘right now’ option.”

Last words
Today we’re talking about next-day shipments for e-commerce, but the industry is buzzing with rumors of big retailers moving into same-day shipments.

“To be able to do same-day shipment you’re going to have to be as geographically close to the customer as possible,” says Hume. “In addition, you will need robust systems that look at all the different points of distribution—including one that ships from a store—and orchestrates the most cost-effective place to meet that service level.”

—Maida Napolitano is a Contributing Editor to Logistics Management

“... To Manage Our Customers’ Business.” —Calvin Coolidge

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¹ Data as of 4/30/13 ² Fiscal Year 2011 – 2012

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