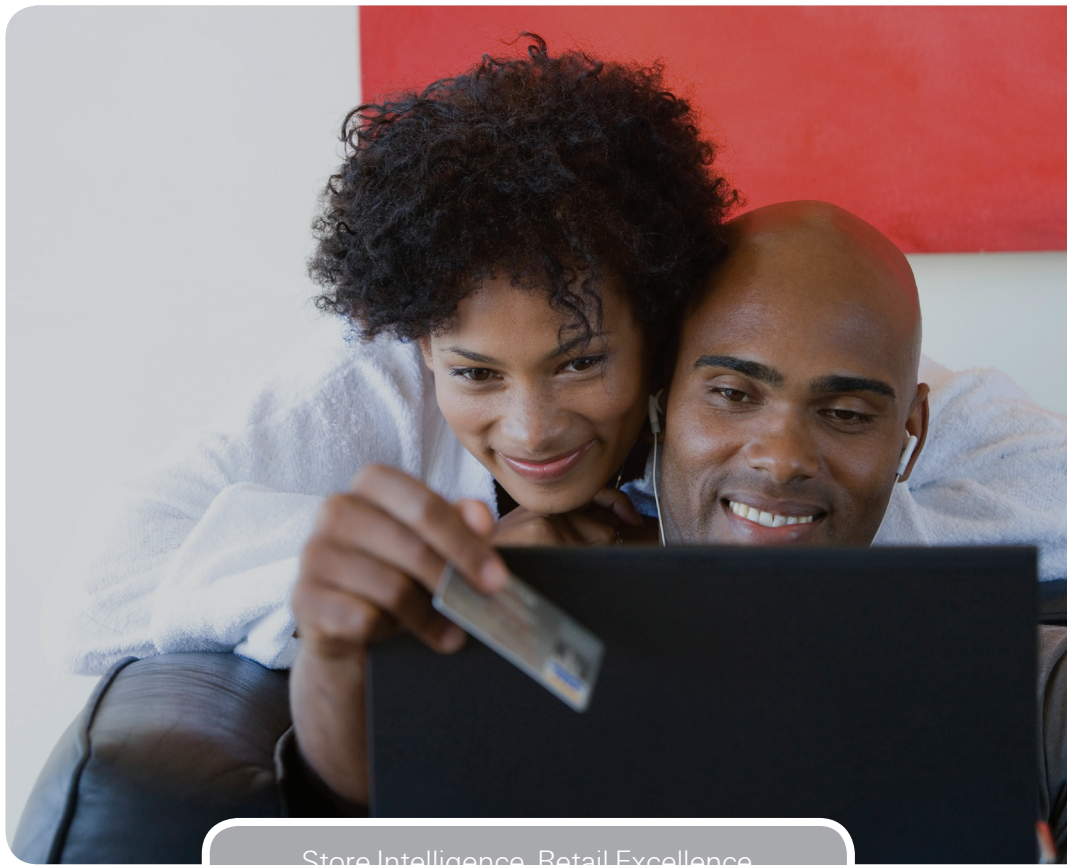# tyco

Store Intelligence. Retail Excellence

inventory intelligence

unlocking omnichannel retailing and the future of the store

"Integrated inventory intelligence is essential to deliver on the omnichannel promise."

Executive Summary

Omnichannel retailing adds the flexibility of cross-channel and mobile shopping to the unique revenue- and loyalty-building capabilities of the face-to-face retail experience. It offers opportunities to build deeper shopper relationships—or risks ending them, when availability promises go unmet.

Keeping availability promises depends not only on integrated IT systems, but on reliable inputs and outputs to those systems, across the boundaries of physical locations and technologies, covering both the short and long term. Retailers who succeed at integrating their inventory intelligence for shoppers, associates, and managers can cut costs, accelerate turns, and build revenue by driving high-fidelity information back into the supply chain, aligning it with shopper demand. Retailers who fail will subject omnichannel shoppers to a fragmented retail landscape, marked by jarring, disconnected changes and unreliable information.

Integrated inventory intelligence is essential to deliver on the omnichannel promise. But even more, it future-prepares retail by eliminating information islands, adapting quickly to new processes and technologies, and keeping cost and waste low.

Retail's future: many locations, one promise

While there is no standard terminology for retail channels, industry experts generally distinguish three types, which we'll call by these names:

- *Single-channel* retail moves, goods, orders, payments, and information to and from shoppers along a single path—in-store, catalog, or online. Physical and online stores, for example, are separate single-channel operations that share a brand.

- *Multichannel* retail dissolves single-channel barriers to offer anywhere-to-anywhere information and fulfillment, including shopping, price comparison, ordering, pickup, return, and services. Multichannel's focus is on distribution.

- *Omnichannel* retail is shopper-centric multichannel, emphasizing revenue per shopper. Omnichannel recognizes and capitalizes on the fact that shoppers use multiple channels to investigate and select items but prefer to pick them up in a store. [1,2]

For years, distribution-focused analysts presented multichannel as retail's ultimate goal. So why should retailers bother with omnichannel? The answer stems from the unique advantages of the store environment.

[1] Greg Girard. "Transparency, Localization, and Economic Premiums of the Box", in IDC Retail Insights (newsletter). (Framingham, MA: International Data Corporation,
February, 2011). Available at: http://www.idc-ri.com/contact/newsletter.jsp

[2] Brian Kilcourse. How Omni-Channel Retailing is Affecting In-Store Publishing (Summary). (Miami, FL: Retail Systems Research, May 11, 2010). http://www.retailsystemsresearch.com/_document/summary/1110.

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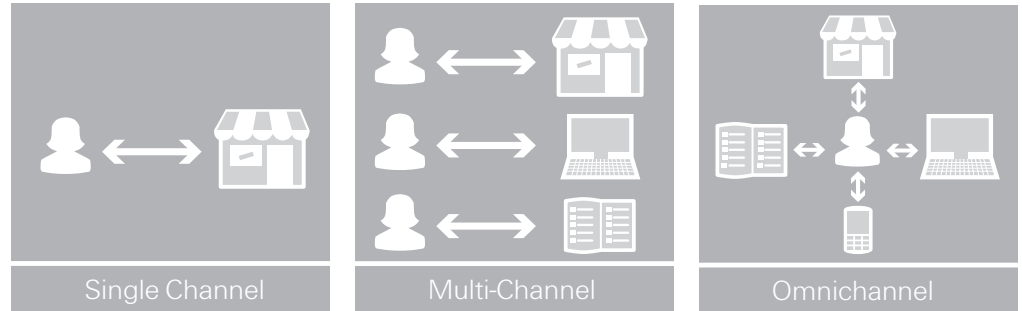| Single Channel | Multi-Channel | Omnichannel |

Figure 1: Three ways to organize retail channels. In single-channel or traditional retailing, pickups and orders occur within the same channel. Multichannel (or cross-channel) arrangements allow orders and pickups from any channel. Omnichannel retailing allows browsing and ordering from any channel, but focuses on increasing the shopper's spend—and that means bringing the shopper to the store.

Why Stores Still Matter

For shoppers, stores are an escape from their homes and offices into attractive, exciting spaces staffed by pleasant, well-informed people attentive to their needs and preferences. Stores let them browse and learn about multiple categories of merchandise, compare them by touch and smell as well as sight, assemble them into coordinated outfits or packages, and enjoy them immediately without delays or charges for shipping.

For retailers, stores are a way to engage shoppers face to face, building loyalty, trust, and revenue through expert personal service, up-selling (wool to cashmere) and cross-selling (a necklace for that sweater—and earrings?). For all the doomsday predictions, stores remain as relevant today as when Bainbridge and Le Bon Marché opened in the 1830's.

Omnichannel retailing recognizes stores' compelling physical and interpersonal advantages, and links them to the high-speed world of electronic retailing. But it places shoppers, not stores, at the center, extending traditional measurements like in-store sales to include revenue per shopper, measured across all retail channels.

"Omnichannel retailing recognizes stores' compelling physical and interpersonal advantages..."

"*Omnichannel raises shoppers' expectations with a promise of availability. Breaking that promise affects all channels and compromises the brand.*"

Mobile Challenges and Opportunities

The advent of mobile and location-based electronic commerce is about to make the retail world even more interesting. Smart phones are often seen as threats, introducing services that allow instant price comparisons with online retailers using barcodes or even snapshots of an item. But mobile devices also bring opportunities into the store, from location-based "find it" services, in-store navigation services to make browsing more efficient, and roaming smart terminals that liberate sales associates from fixed stations to bring information and transactions directly to shoppers.

Omnichannel Opportunities and Risks

Omnichannel retailing gives stores omnipresence, an advantage once claimed exclusively by online merchants. Omnipresence lets stores offer their merchandise to shoppers at the moment of interest, and sell it at the moment of decision, all without sacrificing their environmental and interpersonal distinctions and the instant gratification of in-store pickup. Omnichannel retailing helps cultivate deep consumer relationships—explicitly through cross-channel loyalty programs, and implicitly by building an experience of satisfying shopping experiences.

But the risks are serious, too. Omnichannel raises shoppers' expectations with a promise of availability. Breaking that promise affects all channels and compromises the brand. Serious errors—pre-Christmas stockouts, for example—are emotional events, and rebuilding trust is slow when it's even possible. The performance of pioneering efforts by Circuit City and others lagged expectations, with results ranging from embarrassing to disastrous.

Risks compound when retail sales associates don't trust "the system." Staff mistrust causes hesitant selling, wastes time double-checking inventory, and communicates lack of confidence to the shopper. Refunds and returns—essential to recovering trust—are often the weakest link.

Why is this still a problem?—the need for integrated intelligence

Retailers, suppliers, and software providers have been working on cross-channel technologies for more than a decade now, and made considerable progress toward integrated Information Technologies (IT)—but IT integration alone can't provide the integrated intelligence that omnichannel retail requires.

IT organizes, accelerates, and distributes information—the way Google Search does for information on the Internet. But IT alone can't assure the quality of that information,

in retail or on Google. That's why Google Maps—where errors matter more than with Search—uses old-fashioned camera trucks to make sure it delivers up-to-date information that matches the physical world.

Omnichannel retail has the same problem: quality information depends on trustworthy, up-to-date inputs and outputs, not just reprocessed information that was already in electronic form. Timely, accurate inputs and outputs, organized into actionable information, make up what we call integrated intelligence: spanning physical locations, technologies, and time. Let's take those one at a time.

Integration Across Physical Locations

Retail supply chains are vast, efficient, and—considering their complexity—very accurate. Supply-chain partners watch their inputs and outputs carefully, cross-checking orders, packing lists, manifests, receiving records, and warehouse cycle counts, while electronic systems like barcode and RFID help them align virtual records with physical reality. But even the fastest, most accurate supply chain is at the mercy of poor-quality information from retail endpoints.

And that's where information risk sneaks in, from inputs and outputs outside the "walled garden" of integrated supply chains, and especially inside the store:

- *At the back door*, inputs must document a complex array of sizes, styles, colors, and options, and outputs must reflect the same information on returned items.

- *On the items themselves*, inputs and outputs are coded in tags that must be compact, detailed, and tamper-resistant yet easy for store associates to remove.

- *At the point of sale*, systems must capture transaction, loyalty-program, gift card, and coupon data, and help detect, remove, and recirculate tags.

- *At the front door*, inputs and outputs should show real-time store traffic and intercept shoplifters without intruding on the legitimate shopper's experience.

Integration Across Technologies

On a large scale, technology integration means interoperability and data compatibility across hardware, operating-systems, and general-purpose applications like Internet browsers—the domain of IT.

> *"Timely, accurate inputs and outputs, organized into actionable information, make up what we call integrated intelligence…"*

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But integration of retail-specific technologies has been slower. The challenges may be smaller, but the pressure to drive for compatibility is also less intense. Suppliers' attempts to keep their solutions exclusive create needlessly incompatible hardware, data formats, and information models. Effective omnichannel retail needs to overcome such barriers to integrate:

- *Execution, task management*, and workflow, so a task like "enter line item" means the same thing on a POS terminal as on a smartphone.

- *User interfaces and reports*, so systems give users, the same information in the same way, even when it comes from different sources.

- *Sensors with high-fidelity data*, so inputs span sensor technologies, and offer enough detail for shoppers to make meaningful choices.

Standards organizations such as the Association for Retail Technology Standards (ARTS) support technology integration, but low IT investment by the retail industry has kept progress slow. [3]

Integration Over Time

Shoppers want item- and location-specific information right now; retail executives want to track seasonality and long-term trends by region or market segment. Integration over time requires aggregation over time periods spanning:

- Instantaneous availability, location, shipment, and order status: information that answers questions like, "Where is it?"

- Short-term aggregation to define events, track cycles, and evaluate locations, to answer manager-level questions like, "What's happening?"

- Long-term analysis to answer strategic questions like, "Where are we headed?"

Over any time period, inputs should offer end-to-end visibility across stores, distribution centers, and manufacturers as well as top-to-bottom visibility from the retail floor through regional sales and distribution centers, to the executive suite. Most important, the information collected should provide actionable intelligence—with execution support to make those actions effective.

[3] Verizon Business. The need for standards in retail IT. (New York: Verizon Communications, Inc., 2010). www.verizonbusiness.com/.../wp_need-standards-in-retail-it_en_xg.pdf

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"Inventory intelligence could be justified on a cost and efficiency basis alone. But the real prize from omnichannel retailing is revenue growth..."

Direct and Indirect Business Benefits

What can retailers expect to gain from investments in inventory intelligence? First and foremost, they will have the framework to implement omnichannel retailing with confidence—opening shopping to omnipresent online and mobile environments, while retaining focus on the store. They can also expect significant direct and indirect business benefits in the areas of cost reduction, inventory management, and revenue growth.

Workforce Management

Inventory intelligence helps improve labor utilization, productivity, and morale in stores and distribution centers through automation, accuracy, and upscaling job responsibilities. It cuts the time spent on manual entry and inventory counts, and the time wasted following—and then correcting—information that is either wrong or insufficiently detailed for its intended use. Accurate inventory, allocation, and replenishment information reduces pre-emptive buying and the inevitable markdowns and write-offs that follow from carrying too much stock. And an automated system that offers top-to-bottom visibility cuts losses from internal shrink fast.

Inventory Management

Fast processes and lean inventories improve inventory turns, and reliable tracking of items and store locations helps stores reorganize their stock to maximize floor-space utilization and sales per square foot. More accurate forecasting, ordering, allocation, and replenishment intelligence helps stores tune their product portfolios, and make better use of fixtures, displays and other capital assets. Data-based collaboration with supply-chain partners raises compliance with order cycles and delivery requirements, and opens opportunities for closed-loop end-to-end collaboration, for example in tag reclamation programs.

Revenue growth

Inventory intelligence could be justified on a cost and efficiency basis alone. But the real prize from omnichannel retailing is revenue growth, from:

- Fewer abandoned orders due to out-of-stock events.

- Higher loyalty, from more rewarding shopper-associate interactions and in-store experiences.

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- Greater merchandising potential, using clienteling and customer relationship management (CRM) information from in-store, online, and mobile channels.

High-quality inventory intelligence collected from stores in real time feeds back through the entire supply chain, harnessing its efficiencies in the service of shoppers' demand.

Avoiding Implementation Risks

After the false starts and missteps of first-generation multichannel retailing, retailers have earned the right to be skeptical. But the lessons learned from that experience can help them sidestep the errors of fragmentation, transition shocks, and immature technologies with their omnichannel initiatives.

Fragmentation

By definition, fragmentation is the enemy of integration, in retail intelligence as with anything else. In planning their transitions to the omnichannel model, retailers should take care to avoid:

- Geographic fragmentation—the global reach of retail supply chains demands inventory information continuous from the manufacturer to the point of sale. For forward logistics, that includes tagging at the source; for reverse logistics, it includes recirculating tags all the way back to the manufacturers.

- Technology fragmentation—inventory intelligence needs inputs from established Bar Code and Electronic Article Surveillance (EAS) technologies, emerging technologies like Radio Frequency Identification (RFID), transitional technologies like dual RFID/EAS, and adaptability to future technologies.

- Infrastructure and systems fragmentation—single-purpose point solutions create duplication and gaps: hardware-only solutions shift integration costs and risks to retailers. IT-centric, narrow-focus solutions can't assure reliability of inputs and outputs, leaving the fundamental problem of inventory intelligence unaddressed.

Transition shocks

Equally dangerous are abrupt, "shock and awe" transitions to any new retailing model. By selecting technologies that can be phased in gradually across product lines or regions, retailers can avoid:

"High-quality inventory intelligence collected from stores in real time, feeds back through the entire supply chain, harnessing its efficiencies in the service of shoppers' demand."

"Even solutions prepared for today's opportunities and risks can still be blindsided by rapid technological, social, and competitive changes."

- Publicity risks—News about problems in a pilot program is manageable, and may even help a retailer position itself as an innovator. System-wide problems are an entirely different kind of story—one that puts your brand on the defensive.

- Financial risks—Wholesale "rip-and-replace" upgrades of entire retail systems are not only difficult to coordinate but beyond the means of even the most established retailers.

- In-store experience risks—shoppers can tolerate short-term bugs in a pilot program, or avoid the affected stores or channels until they are resolved. But when the problem is system-wide, they have no choice but to avoid your brand.

Technology Immaturity

Implementing a new program is risky enough without using unproven technology to do it. Use processes that have already been proven in retail environments, based on mature technologies that integrate with established technologies, and offer a bridge to the future.

Future-prepared Inventory Intelligence

Even solutions prepared for today's opportunities and risks can still be blindsided by rapid technological, social, and competitive changes. Three current trends show how to keep systems and technologies future-prepared:

- Integration avoids yesterday's information islands, and supports coordinated action for quick response as changes emerge.

- Flexibility accelerates adoption of new processes and technologies, limiting risk exposure through experimentation, pilot programs, and phased deployments.

- Sustainability is a "win-win" proposition: low-impact, paperless solutions, recirculation of tags, and de-cluttering of retail environments all cut costs while meeting shoppers' expectations for environmental responsibility.

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Conclusions

Inventory intelligence is a fundamental component of modern retailing—not only to support omnichannel initiatives, but to assure availability on store shelves or to ship, building shopper satisfaction and financial performance. Inventory intelligence aligns the supply chain to demand, and helps retailers keep the promises they make to online, mobile, and in-store shoppers. It's coordinating information up and down their organizations and back along complex supply chains. Flexible solutions, properly deployed, can help retailers seize new opportunities, avoid predictable risks, and prepare themselves for a future that combines shop-from-anywhere convenience with an enhanced shopper experience centered at the retail store.

Leverage our strength and experience

Tyco Retail Solutions, a unit of Tyco International, is a leading global provider of integrated retail performance and security solutions, deployed today at more than 80 percent of the world's top 200 retailers ranging from single-store boutiques to global retail enterprises. Operating in more than 70 countries worldwide, Tyco Retail Solutions provides retailers with real-time visibility to their inventory and assets to improve operations, optimize profitability and create memorable shopper experiences.

The Tyco Retail Solutions portfolio for retailers is sold through Tyco Integrated Security and authorized business partners around the world. For more information, please visit www.tycoretailsolutions.com.

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