Enabling Seamless Retail with Mobile Data Capture

Supporting Omnichannel Engagement with Software-based Barcode Scanning

SCANDIT
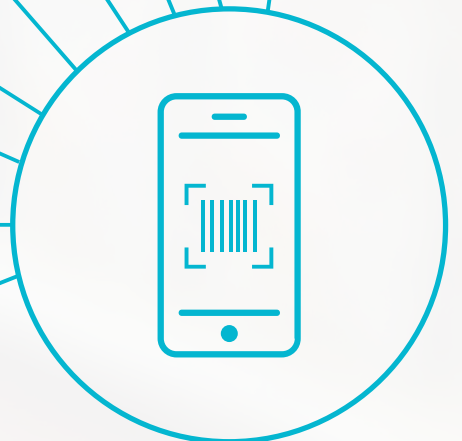
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Introduction

Retail has entered the seamless era. Today's constantly connected shoppers leverage digital technology in their physical lives on a regular basis. Consumers use mobile devices in the real world for on-demand communication, navigation and information capabilities. This has produced an expectation of convenience and immediacy in every area of shoppers' lives that would have been unimaginable less than 10 years ago.

As part of this broader shift in consumer lifestyles, retail has evolved from a push into a pull model. Shoppers expect the ability to order any item in a retailer's product catalog and have it available the next day, if not sooner. Customers may order in-store for home delivery, order at home for in-store pickup, redeem digital discounts in-store, digitally pay in advance for "click and collect" purchases, or engage in countless other combinations of physical and digital shopping.

As a result, the retail supply chain needs to become responsive to real-time shifts in demand. Retailers need total supply chain transparency that allows them to track and trace all products at all times. Back-end functions such as warehouse management must be performed with maximum efficiency and operational insight.

This new industry paradigm is called seamless retail. On the surface, seamless retail seems to be a simple and straightforward alignment of physical and digital channels. But without a solid foundation that manages all the hidden supply chain complexities, the calm customer-facing surface will only serve to mask underlying chaos.

On the front end, seamless retail involves presenting the same products at the same price across all channels. Shoppers also need to have ready access to consistent product information. Furthermore, retailers need to deliver consistent, highly targeted promotions and discounts at every customer touchpoint.

To fulfill this front-end seamless promise, retailers require real-time, back-end inventory awareness. This means having accessibility to the "same version of the truth" across all areas of the enterprise, with no internal silos. In addition, the role of the store associate is changing. Shoppers expect the same immediate expert assistance in-store that is delivered online. Associates must have instant access to detailed product and inventory data.

Store employees also must be able to perform in-depth clienteling functions. Today's customer is not willing to wait while an associate checks the back room to see if a desired item is in stock. By the time a store employee returns with a product in the shopper's desired size or color, the sale has most likely

been lost. A front-end mobile app that instantly connects associates with stock in the back room, or even other stores and distribution centers, is a vital tool for seamless customer service. And with stores increasingly serving as online fulfillment hubs, store employees must often perform picking, packing, and other unfamiliar distribution tasks.

Fortunately, mobile data capture solutions provide the unifying foundation of seamless retail. By using mobile devices to retrieve data from product barcodes, retailers can ideally blend the physical and digital worlds. Mobile data capture enables a true "bricks and clicks" retail environment where customers have one seamless experience. Furthermore, it delivers real-time analytical insight into shopper behavior and inventory movement that cannot be gleaned by any other means.

This white paper will examine in detail how mobile data capture solution deployment can enable retailers to connect every area of the enterprise and provide customers with a true seamless shopping experience no matter if they're shopping online, in-store or on the go. It will also highlight the unique advantages barcode technology provides in instantly connecting every point in the extended retail supply chain, from source to shelf, with associates and customers across all physical and digital touchpoints. Furthermore, the paper will delve into the unique analytic opportunities provided by mobile data capture, and explain the market-leading benefits offered by Scandit's mobile scanning software.

Reaching Consumers Where They Live

Mobile data capture in the customer home

The emergence of the "Internet of Things" (IoT) is a major development in seamless retail. No longer do customers need to log into a website or app to remotely place orders. A variety of connected "smart devices" are now directly linking shoppers to digital purchases.

For example, Amazon Dash buttons allow consumers to place delivery orders for select CPG items with a simple tap. The voice-activated Amazon Echo device lets shoppers automatically purchase items via vocal command. Echo also has artificial intelligence features that can leverage customer order history and even make targeted alternate suggestions for out-of-stock items.

In addition, connected appliances such as refrigerators, printers and trash cans are now able to track consumer usage of various products. The devices then notify shoppers, placing automatic replenishment orders or adding items to shopping lists when inventory runs low.

However, mobile barcode scanning offers consumers a more convenient and controlled method of automated home shopping. Dash buttons require using a separate dedicated mechanism to purchase each CPG brand. Meanwhile, smart devices and appliances are expensive, may be bulky and costly to install and maintain, and may only be useful for tracking certain goods.

In contrast, a mobile retail app with a scanning feature gives consumers a single tool for automatically selecting virtually any item in their home for purchase or review. Scanning is intuitive and only takes a fraction of a second to perform. Once scanned, items can be added to a digital shopping list, placed into a click and collect order, or requested for home delivery. Customers can also use at-home scanning for activities such as checking stock levels at local stores, obtaining targeted discounts and reviewing product data.

As a result, mobile retail apps become much more useful and easier to adopt for consumers. Providing scanning capability can help boost app engagement, leading to increased mobile customer satisfaction and purchase rates. This also increases the ROI of app development efforts. For customers, mobile scanning takes shopping to the next level by connecting the digital and physical worlds. This also provides retailers the significant benefit of having an active presence in the consumer's home. The ease of in-home scanned purchases helps ensure retention of existing customers. Considering the expense of acquiring new customers as compared to maintaining existing ones, this is a considerable advantage.

Helping Store Shoppers Help Themselves

Mobile data capture in the store – customer-facing

Self-checkout is the traditional in-store mobile data capture activity performed by customers. There is a proven long-term use case for mobile self-scanning. Consumers benefit from avoiding queues and a having quicker, more personalized checkout process. Retailers can reduce the number of cashiers they need to schedule and generate higher levels of customer satisfaction by empowering customers to scan items in their cart and pay conveniently from a mobile device.

But there is far more to customer-facing data capture in the store than self-checkout. Consumers can also scan barcodes to obtain product reviews and even videos. There is also a wide variety of product information available via mobile scan. This includes checking prices, as well as the ingredients of food items or materials used in apparel goods.

However, mobile scanning can also deliver other types of product data which are becoming increasingly important to today's more sophisticated shoppers. Food consumers may want to know if a product has been genetically modified, was locally sourced, or organically farmed. Consumers are also increasingly concerned about ethical product sourcing. A quick barcode scan can inform customers of an item's origin to help ensure it was not produced inhumanely or illegally.

In addition, shoppers can check for availability of stock across the enterprise and place orders for items not located in the store. They can also redeem individually targeted in-store discounts and loyalty offers, as well as general coupons and other saving opportunities.

Finally, mobile scanning is an ideal way to let customers efficiently add products to gift registries or wish lists as they move about the store with their personal smartphone or tablet. Providing these types of self-service scanning options through a mobile app, rather than a dedicated scanning device, offers several benefits to both customer and retailer. For the shopper, using a personal device is more familiar, convenient and secure. Meanwhile retailers avoid the substantial cost of purchasing and maintaining dedicated scanners while providing a superior customer experience.

The bottom line: mobile data capture makes the store environment function more like the e-commerce environment. This achievement lies at the heart of the seamless customer experience.

The Store as Seamless Anchor

Mobile data capture in the store – associate-facing

On some levels it may be counterintuitive, but the brick-and-mortar store is the focal point of seamless retailing. The store serves as the hub where all the back-end and front-end touchpoints of a seamless retail enterprise intersect. And mobile scanning is the perfect enabler to ensure the store hub functions smoothly.

On the associate side, mobile scanning supports a number of critical seamless retail activities. By scanning misplaced items, managers can immediately notify store associates to remediate shelving errors. Employees can scan tags on products or shelves that need replenishment. This improves vital communications between the front and back of store. Any stock-taking or inventory activity becomes quicker, easier and virtually error-free with mobile data capture.

As with customer-facing scanning, retailers can embed mobile data capture functionality into an app. Rather than having to invest in costly dedicated scanning devices, retailers can instead leverage consumer or rugged smartphones and tablets. This greatly reduces equipment overhead, and may even open the possibility of using a bring your own device (BYOD) mobile data capture strategy. The need to train employees on unfamiliar devices is also eliminated.

In addition, associates can record the location and availability of items for store-level fulfillment of online orders. This supports seamless retail operations such as click and collect or buy online, pickup in store (BOPIS). Click and collect, where shoppers purchase items online for in-store pickup, often in as little as one to two hours, is a classic example of how the store serves as a logistical center for seamless customer engagement.

However, fulfilling click and collect orders requires shifts in the typical store workflow. Associates may need to perform tasks often associated with the distribution center, such as picking and packing. They also may be required to perform other seamless fulfillment roles, such as shipping digital purchases to customer homes. Mobile data capture maximizes associate productivity by simplifying complex or unfamiliar activities that are part of the seamless customer experience.

Store associates can also perform all the same scanning functions as customers. This includes checkout, as well as obtaining product data and discounts, creating registries and looking up inventory. The store associate retains a great deal of importance in the age of seamless customer service. According to a recent analysis from Retail Week and supply chain technology provider Manhattan Associates, 55% of consumers see the store associate as important to ensuring a good shopping experience. And 38% of shoppers think checking stock and availability is the most important service provided by a store associate.

In addition, mobile data capture enables associates to more effectively manage the dressing room by scanning items customers bring in and out. Retailers can better mitigate the risk of loss and be instantly alerted to products that have been left behind.

> " *38% of shoppers think checking stock and availability is the most important service provided by a store associate.* "
>
> *- Analysis performed by Retail Week and Manhattan Associates* [1]
>
> **Source:** Technology and the Role of the Store Associate, Retail Week and Manhattan Associates 2016

Connecting the Pieces

Mobile data capture in the supply chain

Ultimately, the success of seamless retail hinges on real-time inventory awareness. A customer who is told an item is out of stock will find it at a competitor. They will also very likely tell all their friends about their negative experience, and potentially shift their loyalty.

Given the much higher comparative cost of obtaining vs. retaining a customer, "out of stock" is no longer an acceptable retail situation. Of course, no single store can carry a retailer's full inventory. Even a dedicated e-commerce fulfillment center may not contain a complete product assortment.

However, the modern omnichannel consumer has no knowledge of or interest in these distinctions. They simply expect quick fulfillment of their purchases.

Fortunately, mobile data capture is the perfect enabler of seamless inventory track and trace operations. Every time a barcode is scanned along the extended supply chain, a retailer can instantly know where inventory is located. From source to shelf, the current location of each product and its accessibility to fulfill specific customer requests is readily available.
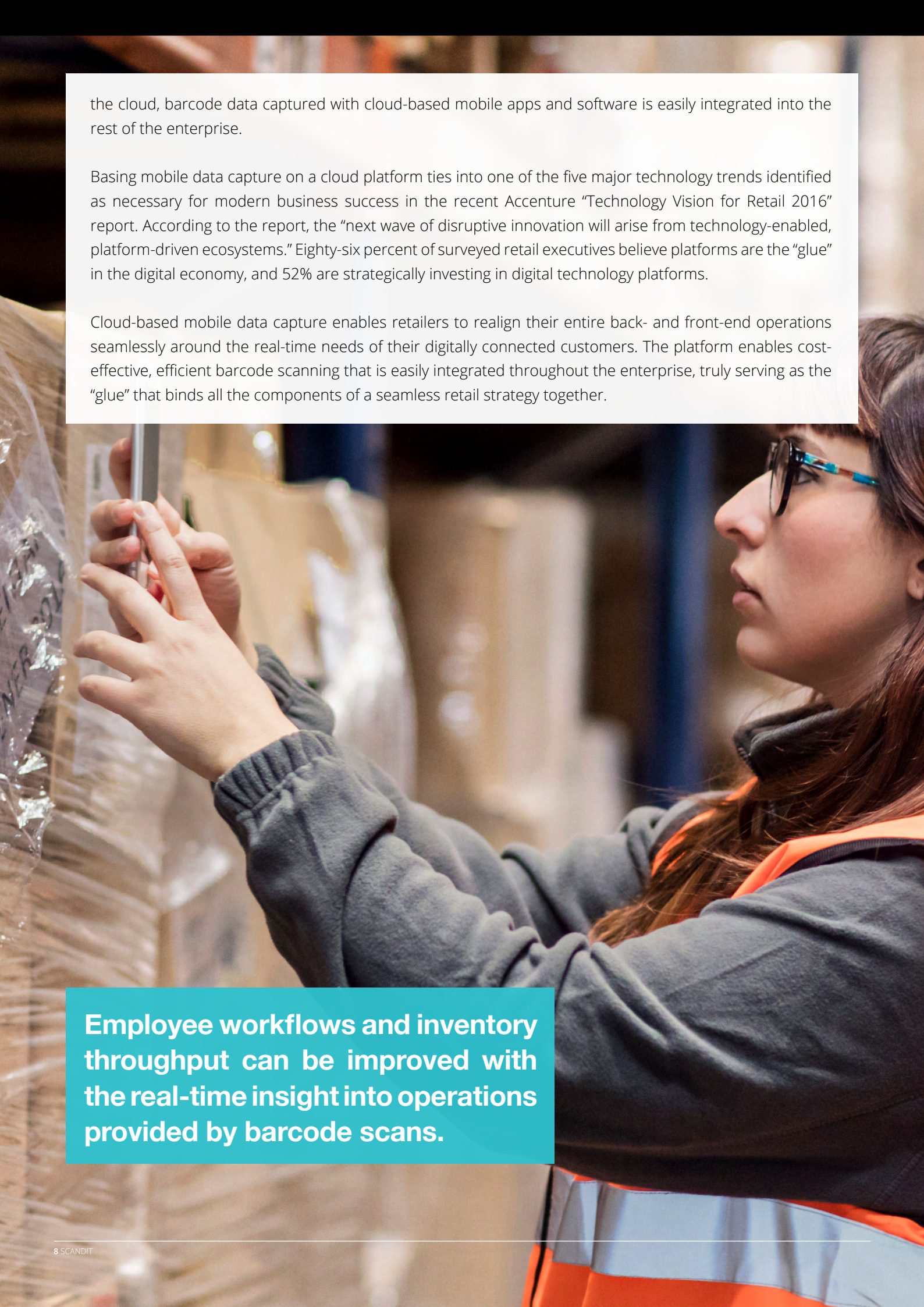
This means a customer who visits a local store and finds their desired item out of stock can be given options such as reserving the product at another nearby store or having it shipped to their home from a regional distribution center. Online purchases can be fulfilled from stores, shortening delivery times and reducing strain on fulfillment centers.

Deploying mobile data capture solutions in the supply chain also serves to minimize loss. By scanning goods before and after delivery, retailers can quickly identify and investigate shipment inconsistencies. Barcode scanning at other key intervals in the supply chain can provide further insight into potential instances of theft, damage or other loss prevention events.

Real-time inventory location data further allows retailers to fulfill customer orders at maximum profit. For example, a customer in a location experiencing a deep freeze may place a full-price online order for a cold-weather apparel item. Using a mobile data capture solution, a retailer could locate the item in a store in an unseasonably warm part of the country where it would sell at markdown. The online order could then be fulfilled from that store, avoiding a markdown and improving inventory throughput.

The effectiveness of warehouse management activities is also enhanced with mobile data capture. Employee workflows and inventory throughput can be improved with the real-time insight into operations provided by barcode scans.

By supporting mobile data capture with cloud connectivity, retailers can affordably guarantee the flow of real-time inventory information throughout the enterprise. Cloud platforms allow retailers to easily centralize the collection, storage, and analysis of barcode data. Software upgrades and customizations can be performed once and distributed to all enterprise devices. The cloud also offers retailers the ability to scale bandwidth as needed, with flexible pricing. And since retailers now typically operate most or all of their IT architecture on

the cloud, barcode data captured with cloud-based mobile apps and software is easily integrated into the rest of the enterprise.

Basing mobile data capture on a cloud platform ties into one of the five major technology trends identified as necessary for modern business success in the recent Accenture "Technology Vision for Retail 2016" report. According to the report, the "next wave of disruptive innovation will arise from technology-enabled, platform-driven ecosystems." Eighty-six percent of surveyed retail executives believe platforms are the "glue" in the digital economy, and 52% are strategically investing in digital technology platforms.

Cloud-based mobile data capture enables retailers to realign their entire back- and front-end operations seamlessly around the real-time needs of their digitally connected customers. The platform enables cost-effective, efficient barcode scanning that is easily integrated throughout the enterprise, truly serving as the "glue" that binds all the components of a seamless retail strategy together.

Employee workflows and inventory throughput can be improved with the real-time insight into operations provided by barcode scans.

Cracking The Code for Success

The advantages of barcodes vs. RFID tags

Retailers have two basic options for storing product data for mobile capture: barcodes and RFID tags. Every retailer has a unique situation with specific needs. But in most circumstances, barcodes will prove to be a more cost-efficient and viable option.

The biggest advantage of barcodes is cost. Virtually all products come pre-labeled with barcodes. On the supplier side, labeling products with barcodes is a routine cost of doing business. This means retailers do not have to ask supply chain partners to make any additional investments. In addition, retailers will not be faced with the prospect of being asked by supply chain partners to shoulder part or all of their RFID-related costs.

Retailers can also leverage existing barcode-related investments. Their supply chain, store and IT environments are built around the barcode as the central source of product information. Databases, as well as tracking and analytic solutions, are already customized to collect and drill down into data recorded from barcodes.

Despite their low individual price, the sheer number of required RFID tags creates a heavy cost for retailers operating on narrow margins. Additional back-end customization may be necessary for sorting and analyzing data. Suppliers may balk at the hefty cost of RFID-tagging products. This is especially true if their other supply chain partners do not use RFID technology.

Unlike barcodes, RFID also presents a number of potential environmental performance issues. Standard RFID tags may not work well in tracking liquid products. Metal can also disrupt the transmission of RFID signals.

RFID has been on the retail industry's radar screen since the early 2000s. In that time, more than one major retail chain has implemented an RFID mandate on its suppliers. Yet there has still never been a widespread use case for RFID in retail. Retailers have been regularly using barcodes since the 1970s. The benefits of barcodes in the retail supply chain are long proven.

Doing More with Your Data
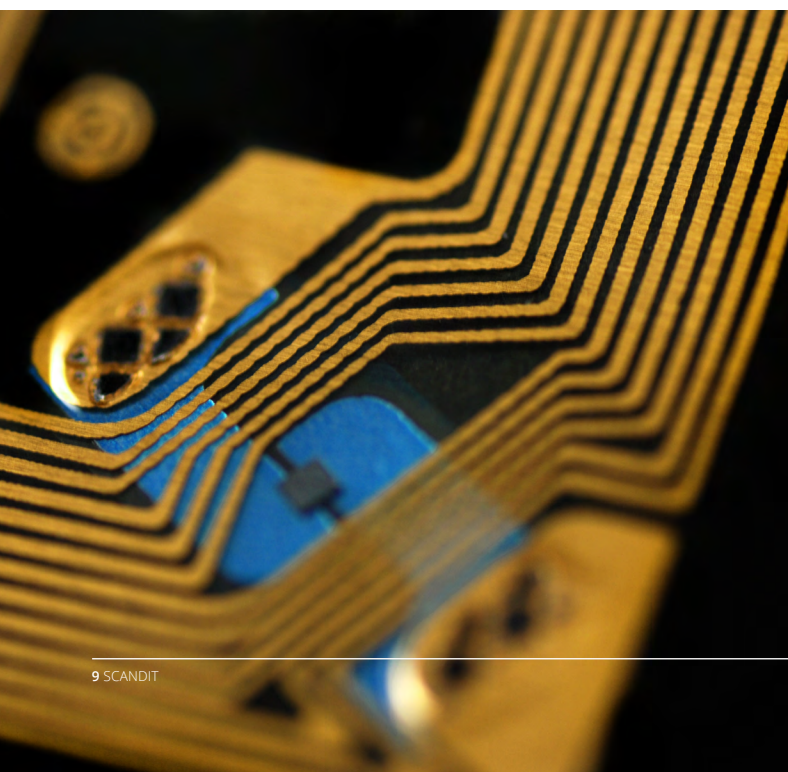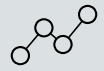
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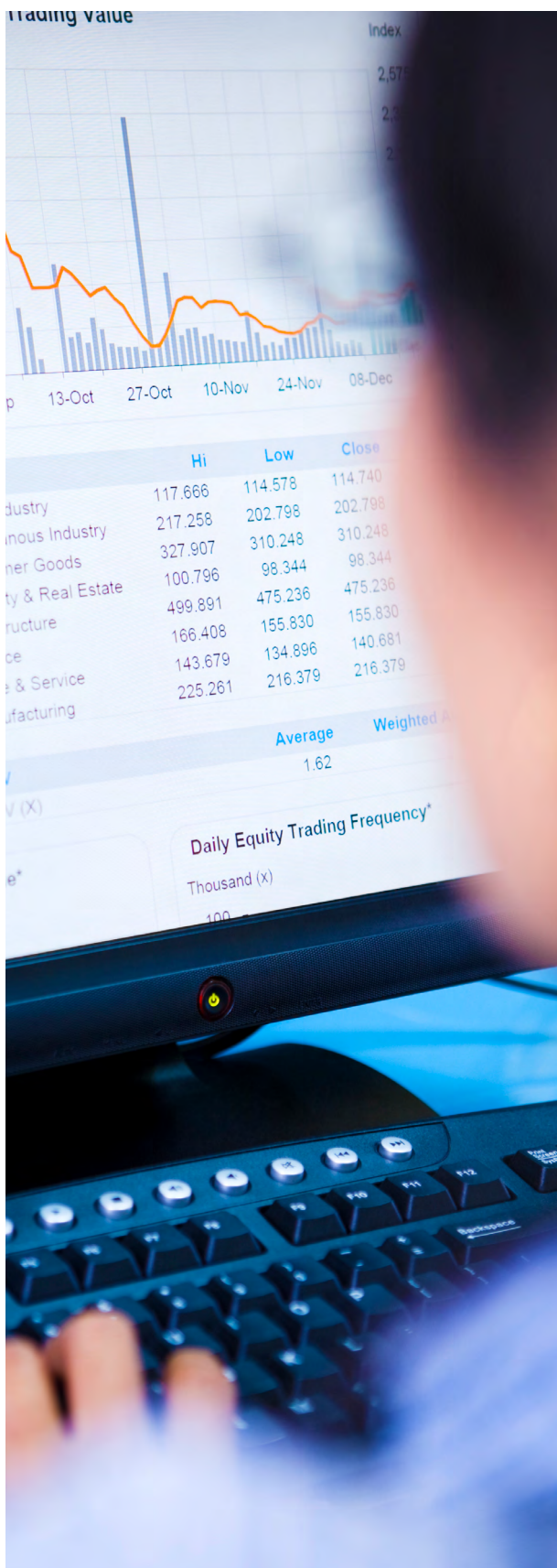
Through the deployment of mobile data capture solutions, retailers can gain a wealth of real-time operational data and insight. On the back end, barcode scans provide retailers with real-time snapshots into how products move through their supply chain. Leveraging this information, retailers can gain new understanding of what drives their unique inventory turn patterns. In addition to improving operations, this heightened supply chain awareness can create new opportunities for success.

Specific supply chain insights can include a deeper view into customer behavioral patterns. By applying predictive analytics to how inventory moves from source to end consumer, retailers become better equipped to put the right product in the right store or fulfillment center at the right time for the right customer to purchase. This maximizes sales as well as in-stock levels. Mobile data capture can also instantly reveal the positive impact of promotions and the negative effect of e-commerce site crashes and other systemic failures.

Retailers can also apply analytics to broader inventory trends and distribution patterns throughout the enterprise. With this type of insight, retailers can identify macrotrends such as varying regional product preferences and the correlation of weather to consumer demand. In addition, they can gain an inside look at inventory distribution throughout the enterprise. This allows a better understanding of how products are distributed. Furthermore, it enables merchants to identify and resolve bottlenecks in their supply chain network, improving overall performance.

So as a result of enterprise-wide supply chain transparency, retailers can streamline their seamless supply chain operations. Barcode scans provide instant data updates that are already in

a format accepted by retailer databases and analytic systems. This solid informational foundation greatly eases the task of creating the "single version of the truth" upon which omnichannel inventory and order management rests.

On the back end, retailers can easily record each and every movement of every piece of merchandise from source to shelf. As soon as an item is delivered from an original source of wholesaler, retailers can capture its presence in their enterprise. They can then scan goods every time they move thereafter, from warehouse to truck to back of store to shelf to customer purchase.

Loss prevention will become much more effective, as retailers will know in real time when an item is missing and exactly where it is missing from. Track and trace will evolve into a simple matter of collecting and reviewing barcode data. As a result, out-of-stocks and lost sales will significantly decline.

On the front end, barcode scans by both customers and employees can provide unparalleled insight into shopper behavior. In the store, retailers can obtain new instances of real-time data. By running comparisons of different data streams, they can reach a higher level of understanding product performance.For example, retailers can compare which products customers are scanning for information vs. buying, or taking into the dressing room vs. buying. This allows them to identify items that draw shopper interest but may have some flaw preventing a purchase decision.

Retailers can also gain a better, more precise understanding of what consumer touchpoints are involved in the path to purchase for specific items. And mobile data capture is an excellent source of real-time feedback on how placement in different areas of the store affects product interest and sales. Digging deeper, retailers can uncover hidden correlations between consumer purchases of disparate items.

In the consumer home, mobile data capture leads to better nurturing of customer relationships. Retailers can obtain an otherwise unobtainable view into how consumers use products once they buy them. This can include exactly how long it takes a customer to use up a specific consumable, as well as what brands are preferred as second or third choices. Armed with this knowledge, retail users can greatly improve their seamless CRM efforts.

Choosing a Provider

The Scandit Advantage

Scandit is the leading provider of cloud-based enterprise mobile data capture solutions. Offerings include the company's Barcode Scanner SDK (software development kit) and Flow mobile application development platform, and prebuilt mobile data capture solutions. In addition, the ergonomic Scandit Case accessory assists scanning. Scandit enables retailers to perform enterprise-grade barcode scanning with consumer or rugged smartphones, tablets and wearable devices. By basing its technology on a cloud platform, Scandit ensures data can be captured affordably, efficiently and easily integrated with existing IT systems.

From a TCO perspective, there are many practical reasons to use consumer-grade mobile devices in professional scanning environments. Upfront cost per unit is substantially lower than that of the typical dedicated scanning device used in retail environments. Scan performance is equivalent to a dedicated scanner with the added benefits and broader capabilities of a multipurpose device, increasing ROI.

Especially when software is delivered and maintained via the cloud, customization is an easier and quicker process than for dedicated scanning devices. When necessary, maintenance costs are generally lower. Software upgrades are also easier and less costly to perform.

However, a consumer smartphone may not provide the resiliency or ruggedness needed for certain retail environments. Distribution centers, shipping/receiving areas, and back-of-store locations are just a few environments where dust, dirt, scanning volumes, and risk of drops and falls can prove overwhelming to a standard consumer smartphone.

Fortunately, in these circumstances retailers have the option of using ruggedized smartphones. These devices offer all the same advantages of a regular consumer smartphone, but meet the same ruggedness ratings of dedicated barcode scanners. A variety of ruggedized smartphones exist, designed to withstand different environmental factors.

Retailers needing to perform scanning in harsher environments may also want to consider leveraging iOS devices using the Scandit Case. The Scandit Case provides the ergonomics of a dedicated scanning device with a lightweight form factor which protects smartphones from everyday wear and tear at a much lower

cost. The Scandit Case leverages the smartphone's existing electrical components and built-in camera while fully integrating with Scandit barcode scanning software.

For customer-facing activities, a Scandit-based mobile scanning app allows consumers to use their own devices for advanced mobile data capture. This eliminates the need to provide in-home connected devices or in-store scanners. In addition to greatly reducing overhead, Scandit solutions also allow customers to engage in a seamless shopping experience using technology they are already intimately familiar with.

Similarly, in the back end of the enterprise, Scandit technology significantly lowers the overhead associated with maintaining a deployment of dedicated supply chain scanning devices. Workers can use either more cost-effective consumer or rugged devices, or even utilize an app running on their own personal devices in a bring your own device (BYOD) environment. In addition, the need for device-specific training is minimized or eliminated, as employees are usually intimately familiar with mobile operating systems.

And Scandit technology can be integrated into the wearable devices that are becoming increasingly popular in the retail supply chain. Workers wearing connected eyewear can scan products by looking in their direction, making order picking, stock-taking and other inventory-related tasks even faster and more efficient.

The seamless operational benefits of Scandit's mobile data capture technology extend to the delivery of goods to the consumer home. Typically, couriers have to record proof of delivery with an awkward and bulky dedicated scanning device, often requiring multiple attempts. With Scandit, a courier can read a barcode of an item using a sleek, compact device on the first try. Delivery personnel can also record customer signatures, in addition to leveraging smartphone capabilities such as GPS and voice communication. Furthermore, courier apps can include features such as geotagging and geofencing that help track products and ensure the right items are delivered to the right locations.

Conclusion

Seamless retail depends on real-time, enterprise-wide inventory awareness and customer engagement. To adequately meet consumer expectations across all channels, retailers need to understand their shoppers more intimately than ever before. At every point in the omnichannel retail enterprise, from the customer home to the store to the distribution center to the initial source, retailers need ready access to accurate product data.

Mobile data capture is a cost-efficient and effective foundation for a holistic seamless retail strategy. By scanning product barcodes, customers can obtain product information, check availability and make purchases via the channel of choice. Supply chain workers can track and trace inventory, pick and pack orders, and perform stockkeeping tasks. Customer orders can be fulfilled from any channel through any channel in the most profitable and timely manner possible.

In addition, retailers can collect a wealth of real-time data about their customers and products that can be analyzed to greatly improve seamless operations. They can adjust product assortments, planograms, pricing, distribution, and marketing and CRM efforts according to current factors. Mobile data capture can further serve as the foundation for creating new opportunities for success, such as click and collect programs or targeted promotions. Scanning barcodes leverages the long-established, industry-wide investment in barcode infrastructure and creates countless new benefits for retailers.

By allowing retailers to perform enterprise barcode scanning functions with consumer-grade mobile and wearable devices, Scandit serves as the best mobile data capture technology provider in today's market. Scandit technology delivers a cloud-based, intuitive barcode scanning solution that makes capturing mobile data easy and affordable on both the company- and associate-facing sides of the enterprise.

Retailers can also significantly reduce IT costs by replacing outdated, clunky dedicated barcode scanners with modern smart communication devices that do far more than read barcodes. Seamless retail takes a lot of effort, but a foundation based on Scandit mobile scanning technology ensures a strong payoff.

Resources

White Papers and eBooks
Check out Scandit's latest content, which provides valuable information across industries to help you find the right barcode scanning solution.

Learn More ➡

Case Studies
Scandit's mobile solutions are used by some of the world's most prestigious brands. See how customers have utilized our innovative software.

Learn More ➡

Videos
Check out Scandit's video showcases to see the performance of our mobile solutions. See our innovative solutions in action.

Watch Now ➡

Demo Apps
Interested in our solutions? Download one of our demo apps for a showcase of the performance and precision Scandit can offer your business.

Download Now ➡

Customer Apps
With hundreds of clients in over 25 countries, our mobile solutions are the technology of choice for many major brands around the globe.

Learn More ➡

Frequently Asked Questions
Find the resources and answers you need to know before choosing Scandit as your mobile solution provider.

Learn More ➡

Have Questions?
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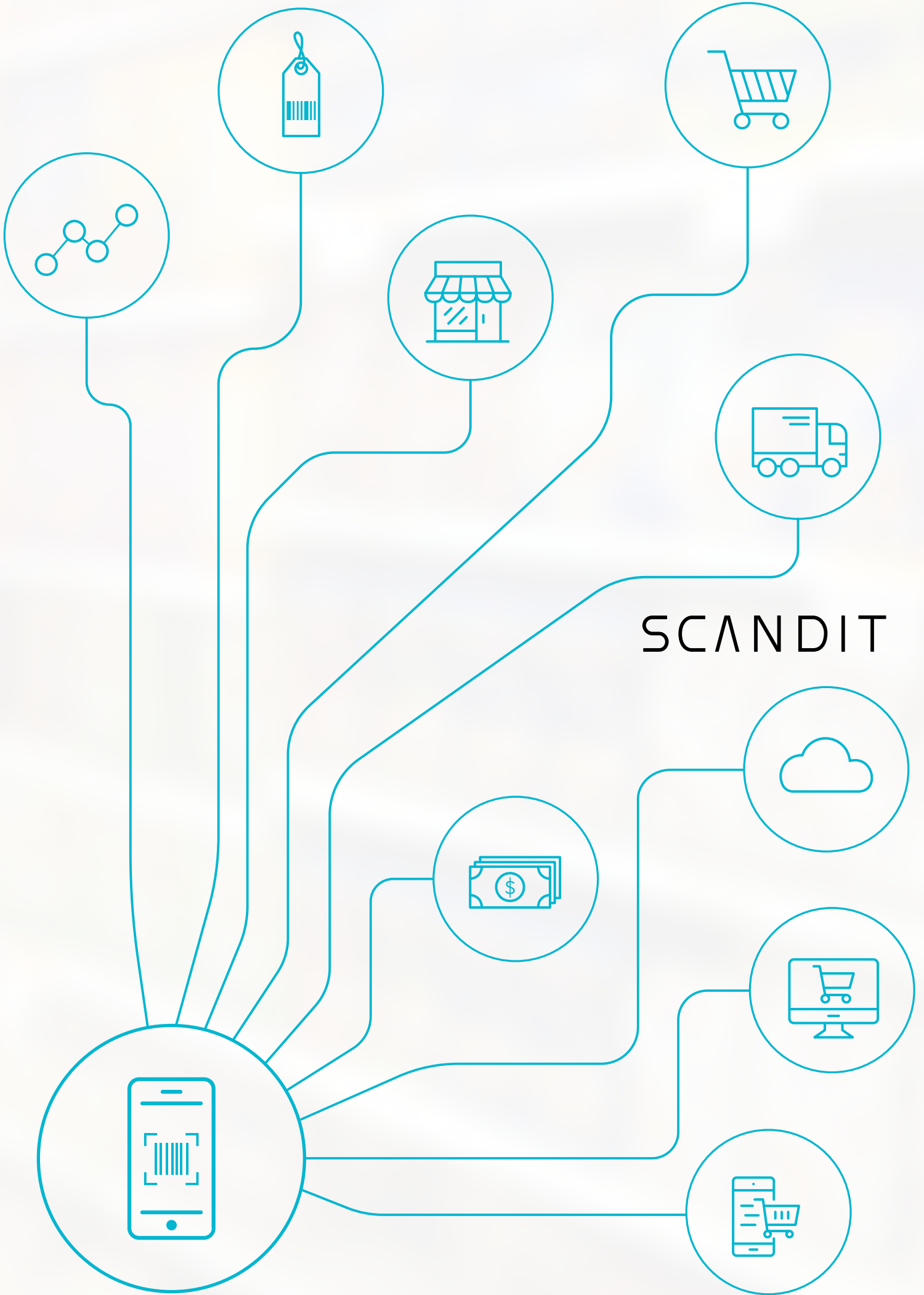
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About Scandit

Scandit is the leading enterprise mobility and data capture company, specializing in barcode scanning solutions that transform business processes across industries including healthcare, logistics, manufacturing and retail. Through its software technologies and cloud services, Scandit empowers organizations to rapidly build, deploy and manage mobile apps for smartphones, tablets and wearable devices. The resulting solutions offer a lower total cost of ownership than traditional, dedicated devices.

Scandit's solutions portfolio includes patented, software-based optical data capture technology, an innovative iPhone Case and rapidly deployable enterprise mobile apps. Built on its 'Flow' Mobile Application Development Platform (MADP) for Data Capture, the company's cloud-based mobility solutions are enabling business transformation for thousands of businesses worldwide, including top brands Cardinal Health, Coop, Louis Vuitton, The Home Depot, NASA, and Verizon Wireless.

For more information visit
www.scandit.com

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