

WIRELESS UPDATE: Moving at the speed of

Logistics professionals are certainly moving toward mobile applications to improve overall supply chain operations, but just how fast is it happening? Our technology correspondent gives us a reality check.

BY BRIDGET MCCREA, CONTRIBUTING EDITOR

With tablet computers and handheld devices maintaining their tight grip on the business world, it just makes sense that the logistics sector would continue its forward momentum toward a time when wires are a thing of the past.

Long talked about in supply chain circles, goals like “real time” and “visibility” are already coming to fruition for tech-savvy shippers that integrate wireless, RFID, and other

mobile technologies into their operations.

Over the next few pages we'll take a look at just how much traction mobile technologies have gained in today's supply chain, discuss the benefits of RFID and wireless integrations, and highlight what barriers to adoption still remain. We'll also illustrate just how close we are to real-time supply chain management and logistics visibility—and how far we have to go before we get there.

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goes through the six-month purchase approval process at his firm for wireless technology, three generations of smart phones have come and gone," says Ellis.

Credit "speed-of-light" technology advancements with creating those and other frustrations as shippers strive to implement the latest wireless and RFID technologies without breaking the bank, or falling behind. "The clock speed of innovation for mobility tools," says Ellis, "tends to be much more rapid than that of the supply chain itself."

Coming up with a business case for those speed-of-light technology options isn't always clear cut either, says Ellis. After all, it's hard to put a price tag on advantages like "better access to information" and "reductions in shipper errors." Translating those benefits into tangible business results "can be extremely tricky," says Ellis.

Despite the roadblocks, logistics professionals are pushing into the wireless world on a steady basis. In its June 2011 report entitled *Incorporating Mobility into Sales and Marketing in the Consumer Packaged Goods Industry*, for example, IDC analyzed the potential opportunities for mobility once integrated into the sales and marketing function of the CPG industry.

IDC reports that mobile applications and devices are penetrating the sales and marketing organization at a "staggering pace," and expects total worldwide smartphone shipments to reach 925.7 million units by 2015 (compared to 450 million in 2011). Computer tablets like the iPad, Motorola XOOM, and Samsung Galaxy Tab are also growing in popularity, and are on pace to reach shipments of roughly 50 million units in 2011 (up 18 million units in 2010).

Expect to see at least a portion of those mobile devices in the warehouse, where more shippers are gravitating toward wireless environments. In those logistics environments, Zimmerman says requirements for specific key sizes—and the abil-

HARNESSING THE SPEED OF LIGHT

When Simon Ellis, practice director for analyst firm IDC Manufacturing Insights, talks to logistics professionals about real-time visibility made possible by wireless technology these days, he hears a lot of grumbling about how the rapid advancements make it difficult to make good purchase decisions.

"One supply chain executive told me that by the time he

ity to withstand multiple, 6-foot drops to a concrete floor—have given way to durable devices that share the operating systems, processors, communications, batteries, and even peripheralization with their more ruggedized brethren.

“While there will continue to be a market for ruggedized applications,” says Zimmerman, “many day-to-day logistics tasks will be able to utilize durable solutions for their data collection requirements.”

Credit advancements in wireless communication infrastructures

efits. “A lot of [shippers] in the warehouse and distribution sector still have a lot of the old technology installed,” Zimmerman says, “and are looking to integrate the value and cost advantages of an 802.11n solution.”

That movement is also being driven by the fact that wireless handset providers like Motorola are rolling out 802.11n-capable devices. “That’s sending a signal to the industry that now is the time to upgrade wireless infrastructures to support those handhelds,” says Zimmerman, “and tap into the value that

percent annually among businesses, and says that number will continue to be driven by the new spectrum of network services being put in front of shippers. “Eight out of the nine firms we track in the enterprise LAN space are buying wireless companies, and the rest have strategic alliances with leading manufacturers,” Zimmerman says. “Everyone is getting their foot in the door.”

Finally, Zimmerman expects an uptick for wireless in the next 24 months to 36 months as enterprises convert their 802.11g wireless supply chain infrastructure to 802.11n. “This move will not be driven by the need for additional capacity,” says Zimmerman, “but by other factors that include the end of life of the older, 802.11g equipment, which may have been in service for up to eight years; announcements from data collection mobile client suppliers regarding the launch of new, 802.11n devices; and the introduction of new durable devices and applications being added the networks.”

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—Simon Ellis, *IDC Manufacturing Insights*

with helping to boost those numbers. According to Tim Zimmerman, research director of network infrastructure, mobility, and RFID at Gartner, the ratification of 802.11n combined with advancements in RFID capabilities, have made the wireless world more inviting for shippers. On the wireless local access network (LAN) side, for example, Zimmerman says the technology itself has stabilized over the last couple of years, thus opening the door for more data collection opportunities.

Not all shippers are reaping the rewards of these wireless advancements, although many are looking to upgrade and begin seeing those ben-

they provide.”

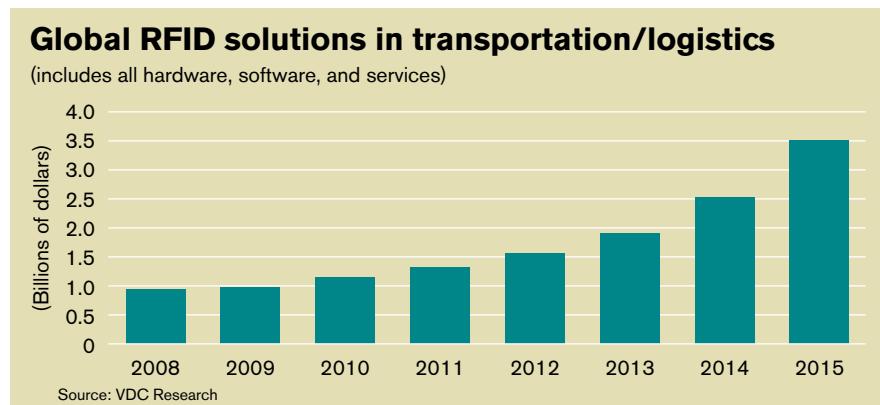
Part of the growth in wireless will come from the handheld market, where durable devices are gaining popularity among shippers that increasingly want to handle their warehouse and transportation operations without the hassle of wires. “The cost profiles and functionality of handheld devices is making their adoption more advantageous for companies,” says Zimmerman, who points out that improved Wi-Fi networks, Wi-Fi hot spots, and better cellular capabilities are all playing a role in the evolution.

Looking ahead, Zimmerman sees wireless adoption growing by about 30

RFID COMES OF AGE

When Drew Nathanson, director of research operations for VDC Research, tracks the use of RFID in the supply chain, he sees explosive growth within the retail sector, and respectable adoption rates among other users. The transportation sector as a whole, for example, comprised 28 percent of the total RFID market in 2010. “We expect that number to increase slightly in 2011,” says Nathanson, who credits the retail sector with driving much of that growth.

“We’ve seen RFID use more than double in some markets, with tag volumes reaching well into the billion-plus units right now,” says Nathanson. “It’s going really strong, with Wal-Mart as one of the biggest consumers.” The large retailer is right now equipping its stores with RFID technology that tracks men’s apparel and jeans, for example, and will soon expand that coverage into its women’s apparel and other products. “Each time Wal-Mart adds a new SKU to its RFID program,” says Nathanson,



Will RFID move into the cloud?

In a recent report titled *Managed Services: RFID's Newest Deployment Method and Business Model*, VDC Research painted a picture of an RFID market that is ripe for change. With CIOs and IT executives looking to migrate from traditional purchase-and-install software, VDC says cloud solutions and managed services deployment methods are gaining in popularity across a wide range of companies, applications, and solutions.

And believe it or not, RFID is on that list, according to VDC's Drew Nathanson. "We're starting to see traction here, namely because using RFID in the cloud mitigates risk for shippers, and it can also serve as a source of revenue," he says. "No enterprise wants to invest in RFID infrastructure, but they do want to get the benefits out of it. A cloud-based offering makes that feasible."

In the basics of a managed services model, customers are offered a number of material benefits, including reduced capital and management overhead risk and persistently up-to-date and higher performing solutions. According to VDC, the most powerful value proposition in managed services RFID may be the shift in deployment risk from customers to managed services providers (MSPs) and their technology partners.

Nathanson says the choice to move to a managed RFID application comes down to investment dollars, and

whether the firm wants to buy, integrate, and maintain the system, or outsource those functions to a third party in exchange for a monthly or annual fee. "There are many different managed services models in use, each with its own plusses and minuses," says Nathanson. "In the end, the ability to obtain RFID value without having to invest significantly in infrastructure is a major benefit, and in many cases makes the RFID investment easier to justify."

RFID managed services is a "great idea," says VDC, and it should be a growth business for a number of companies during the next three years. However, a number of barriers to adoption were cited that are clearly limiting the potential now- and near-term penetration of hosted deployment models. The top three barriers are: security, loss of control, and vendor lock-in. Limited customization options could also thwart the movement of RFID into the cloud.

Challenges aside, VDC says that the timing is right for managed services RFID solutions to become a viable option for shippers, who will gain access to "recent and refreshed technology solutions," according to Nathanson, and someone who is looking out for your best interests, and handling the time-consuming maintenance issues associated with RFID infrastructures. "That should be a big relief for shippers."

—Bridget McCrea, Contributing Editor

"you wind up with millions more tags being used annually."

One of RFID's biggest barriers to adoption—high tag costs—continues to hold shippers back from investing in the technology, although Nathanson says prices for active tags are trending downward. "Depending on the func-

tionality, active tags run \$10 to \$50 each," he says. "Passive solutions—such as those used in retail—are running 10 cents to 12 cents a tag." Even with the high costs of the tags themselves, Nathanson says that the value of the RFID solution now more than compensates for the cost. "It's not really

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—Drew Nathanson, VDC Research

the price of the tag, but the price to tag and the value that the shipper gets out of it," he adds.

Ellis concurs, and says that the benefits that shippers glean from their RFID implementations have been largely publicized, and typically revolve around inventory visibility. "It's about knowing where things are at all points in time," says Ellis, "and the ability to communicate more clearly to customers about where items are and when they're going to be delivered."

Expect more logistics organizations to explore their RFID and wireless options in the future, and more vendors to come up with innovative ways for those managers to make visibility gains and other efficiencies, especially inside the four walls. "Right now we're seeing a lot of convergence with other solutions—from bar coding to voice recognition," says Nathanson, who sees a time when hands-free, eyes-free technology is integrated into warehouse RFID systems. "That will be a perfect fit because it won't require scanning technology, wires, or hands."

Other up-and-coming wireless apps for the warehouse, DC, and moving freight include those that can sense and monitor product, particularly food, produce and high-value items. "Most recently," says Nathanson, "we've seen the introduction of passive sensors that use film to detect the build-up of gases produced by rotting fruit. That's a useful wireless application for any company shipping perishable items."

Expect to see RFID and wireless playing a significant role in the supply chain as the technology behind those solutions improve—and as more companies seek out IT-based solutions to help them work more efficiently. With technology evolving at the speed of light, it will ultimately be up to logistics managers to figure out which applications will provide the most value—and which can be overlooked in favor of future options. □

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