

# MOBILE LOGISTICS TECHNOLOGY TAKES LONG ROUTE TO CONSUMER-GRADE DEVICES

Mobility is nothing new to logistics operations in the warehouse and on the road, but finding the right place for smartphones, wearables and tablets takes careful planning.

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From smartphones to tablets to wearables to Uber-type apps, personal mobile logistics technology is having an impact on the movement of goods in the supply chain – albeit slowly.

Logistics was one of the first areas, if not the first, in business where companies deployed mobile technology to improve efficiency, according to Dwight Klappich, vice president of research at Gartner, based in Stamford, Conn., where he focuses on ERP and supply chain management technology.

It all began in the 1980s, when enterprises began adopting ruggedized mobile hand-held devices and processing information in business applications. However, despite being at the forefront of mobile tech in the past, these companies don't seem to be in a hurry to implement personal mobile

logistics technology.

There's no reason warehouse workers can't use an iPod Touch or an Android device to do everything they do on special purpose ruggedized devices from vendors such as Zebra Technologies Corp. and Honeywell International Inc.'s Intermec division, Klappich said.

"They can run the same things, but we've seen slow adoption, largely because some of the consumer-grade devices are really not designed for high-volume industrial applications," he said. "For example, you can't replace the battery in an iPhone. And if I'm in a two- or three-shift operation, I have to be able to run that thing for 24 hours, and having a replaceable battery becomes valuable."

Knowing full well the shortcomings of consumer-grade mobile

logistics technology, as well as the need for companies to improve warehouse operations, the makers of ruggedized devices are starting to deliver consumer-grade experiences.

"You can have a Zebra Android [device] that looks a lot like, maybe, a Samsung phone, but it's taking advantage of the ruggedized hand-held technology that Zebra's known for," Klappich said. "It has things like replaceable battery packs and lots of attachments, like barcode scanners, plugged into it. And you could even be adding voice technology."

Consequently, it's not that Samsung and Apple are going to replace the Honeywell and Zebra devices, but rather, that those vendors are moving toward providing some of the consumer-grade user experiences on



ruggedized devices, he added.

White-collar supervisory workers in the warehouse – for example, picking managers or warehouse managers – are also beginning to use personal mobile logistics technology to improve productivity.

While it's true the systems these managers use offer pretty rich capabilities, such as alerts, analytics and the ability to see what's going on in the warehouse, managers have only been able to take advantage of these features while tethered to their desktop computers, according to Klappich.

“Now, the big trend with some leading providers is to untether that workforce and to start delivering those capabilities on tablets,” he said.

David Wassenar, CIO of Apprise Software, a provider of ERP and supply chain management software based in Bethlehem, Pa., agreed with Klappich on this point.

Mobile logistics is giving people who previously had to be tied to their desks more flexibility to be somewhere else on the warehouse floor, Wassenar said.

“One of the best things I've seen is that mobile has allowed the

warehouse manager to leave his office,” Wassenar said. “Part of the warehouse manager's job is exception management, and mobile enables the manager to check the exceptions on his smartphone while he's moving around the warehouse accomplishing other tasks.”

### **Wearables changing the mobile logistics game**

Wassenar said there is also the potential for wearable technology, such as Google Glass, to be used to improve warehouse operations by enabling hands-free inventory management.

For instance, the camera in Google Glass can be used to scan and read barcodes on packages, which is now done by hand-held scanners, freeing up a worker's hands to do other things.

The biggest benefit of Google Glass and other augmented reality technology is increasing efficiency within the four walls of the warehouse operation, according to Regenia Sanders, vice president of supply chain and business technology at SSA & Company, a management consulting firm based in New York.

“It makes the guys who are moving the products around hands-free,

and enables them to be able to multitask,” she said. “There's some technology with the wearables that lets them just be able to look in a particular direction and it will automatically scan what they're looking at. There's a lot of reduction in error, as well, [because they're not] keying things in.”

In comparison, smartphones and tablets offer little improvement over using ruggedized handhelds because workers still have to key in the information, Sanders said. Companies are more interested in Google Glass and other wearables because they do offer a significant advantage in data entry.

Sanders offered the example of DHL International's supply chain management business, which, in 2014, conducted a successful test of smart glasses and augmented reality in a warehouse in the Netherlands.

DHL tested vision picking, replacing hand-held scanners and paper job orders with smart glasses equipped with warehouse management software. The wearable devices told workers the fastest routes to find products and scanned barcodes, reducing the time to pick items and pack them for shipping by 25%, according to



the company.

“The biggest area of the operation that benefitted the most from the wearable technology was the picking, because it reduced the pick time and helped in optimizing the route that those manual pickers needed,” Sanders said.

Since its initial test, DHL has expanded its vision picking program to locations across Europe and the U.S.

### **Mobile logistics apps bring Uber-style convenience**

Out on the road, companies are taking advantage of new, Uber-style apps for moving freight, said Steve Banker, vice president of supply chain services at ARC Advisory Group, an analyst firm based in Dedham, Mass.

With these transportation execution management systems, shippers can tender and execute their freight moves more efficiently using their smartphones, and then use their mobile devices to track the freight’s movement.

The apps are also used by brokers hoping to become the next Uber of freight, Banker said. The broker

can track the truck and make that tracking available to the shipper who is buying the load.

“If you’re a broker, and you broker [freight] out to some small trucker ... you can ask them to download your app, and then they accept the load,” he said. “Then, once they accept the load, you can track where that truck is as it goes toward its shipment.”

Additionally, new personal mobile technologies are enabling companies to better optimize routes to take into consideration real-time traffic and weather conditions, said Kevin Beasley, CIO of VAI, an ERP software vendor based in Ronkonkoma, N.Y.

VAI’s load and route management software can manage a company’s routing and scheduling needs to improve employee productivity, streamline delivery operations and cut costs, Beasley said.

“We have people using our mobile apps or some of the other [transportation management systems], like Roadnet, a spinoff of UPS,” he said. “[The interface] will take data from our ERP, from orders, from transportation

management and, in the case of the Roadnet solution, you pump in all the routing information, and it will route the appropriate routes and send the information to mobile devices – personal devices or rugged devices.”

Beasley said VAI taps into the capabilities of the devices, such as GPS, tracking and geofencing – software that uses GPS or radio frequency ID to set up virtual geographical boundaries. The software can trigger an alert when a driver’s mobile device enters or leaves a particular area.

For instance, if a truck driver doesn’t stop to record a delivery in the transportation management app on his mobile device – even though he gets the recipient’s signature and uses a camera to record proof of delivery – the geofencing feature automatically alerts the employer that the driver made the delivery, Beasley said.

These experts agreed that, to further enhance operations, improve customer service and boost the bottom line, logistics providers would do well to take advantage of what personal mobility has to offer.

