

SCANDIT

# How Mobile Computer Vision Can Help You Master the Last Mile



#ScanditLovedit

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# Covering the Last Mile Faster

Smartphones. Free shipping. Same day delivery. Targeted search ads. Social media. Product subscription services.

There are a million ways technology has changed the way we shop. Each year more shopping takes place online. As a result, global parcel volume grew to 87 billion in 2018, up from 74 billion in 2017, and is expected to reach 200 billion parcels by 2025.<sup>1</sup> With COVID-19 creating a surge in home delivery and e-commerce demand, this number could be even higher.

With 2.05 billion digital buyers<sup>2</sup> around the globe, online shopping means big business. That has supply chains scrambling to improve operations, control costs, and keep customers happy. For shippers, third-party logistics providers, and freight haulers, last mile delivery has long been recognized as a source of both opportunities and challenges when trying to meet the demands of today's economy.

That's where technology like enterprise-grade scanning and mobile computer vision on smart devices such as smartphones, tablets, and wearables can help. The more you can leverage your scanning solution to optimize the last mile delivery process, the more you can improve overall efficiency and productivity while lowering costs.

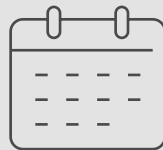
In this e-book, we look at the trends driving last mile transformations and how best-in-class organizations are using smart devices and enterprise-grade mobile barcode scanning software to digitize workflows in all three phases of the last mile delivery process: the Distribution Center, Point of Delivery, and Pickup and Dropoff (PUDO).

<sup>1</sup>Pitney Bowes, [Pitney Bowes Parcel Shipping Index Reports Continued Growth Bolstered by China and Emerging Markets](#), October 10, 2019

<sup>2</sup>Statista, [Number of digital buyers worldwide from 2014 to 2021](#)

# A Quick Look at Last Mile

Last mile organizations are faced with opportunities for rapid growth...



**50%**

Increase in demand for last mile services in the past 18 months<sup>3</sup>



**87 billion**

Parcel volume in 2018, up from 74 billion in 2017<sup>4</sup>



**\$30.2 billion**

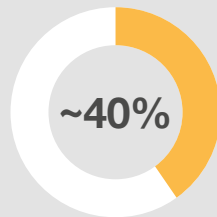
Global last mile delivery market size in 2018<sup>5</sup>

... along with equally significant challenges.



**200 billion**

Predicted parcel volume by 2025<sup>6</sup>



**~40%**  
**delivery cost**

Last mile delivery share of overall logistics cost<sup>7</sup>



**55%**

Consumers who would switch to a retailer/brand that offered a faster delivery service<sup>8</sup>

<sup>3</sup>Localz, [The Last Mile Logistics Whitepaper](#), 2018

<sup>4</sup>Pitney Bowes, [Pitney Bowes Parcel Shipping Index Reports Continued Growth Bolstered by China and Emerging Markets](#), October 10, 2019

<sup>5</sup>The Market Reports, [Global Last Mile Delivery Market Size, Status and Forecast 2019-2025](#), February 2019

<sup>6</sup>Pitney Bowes, [Pitney Bowes Parcel Shipping Index Reports Continued Growth Bolstered by China and Emerging Markets](#), October 10, 2019

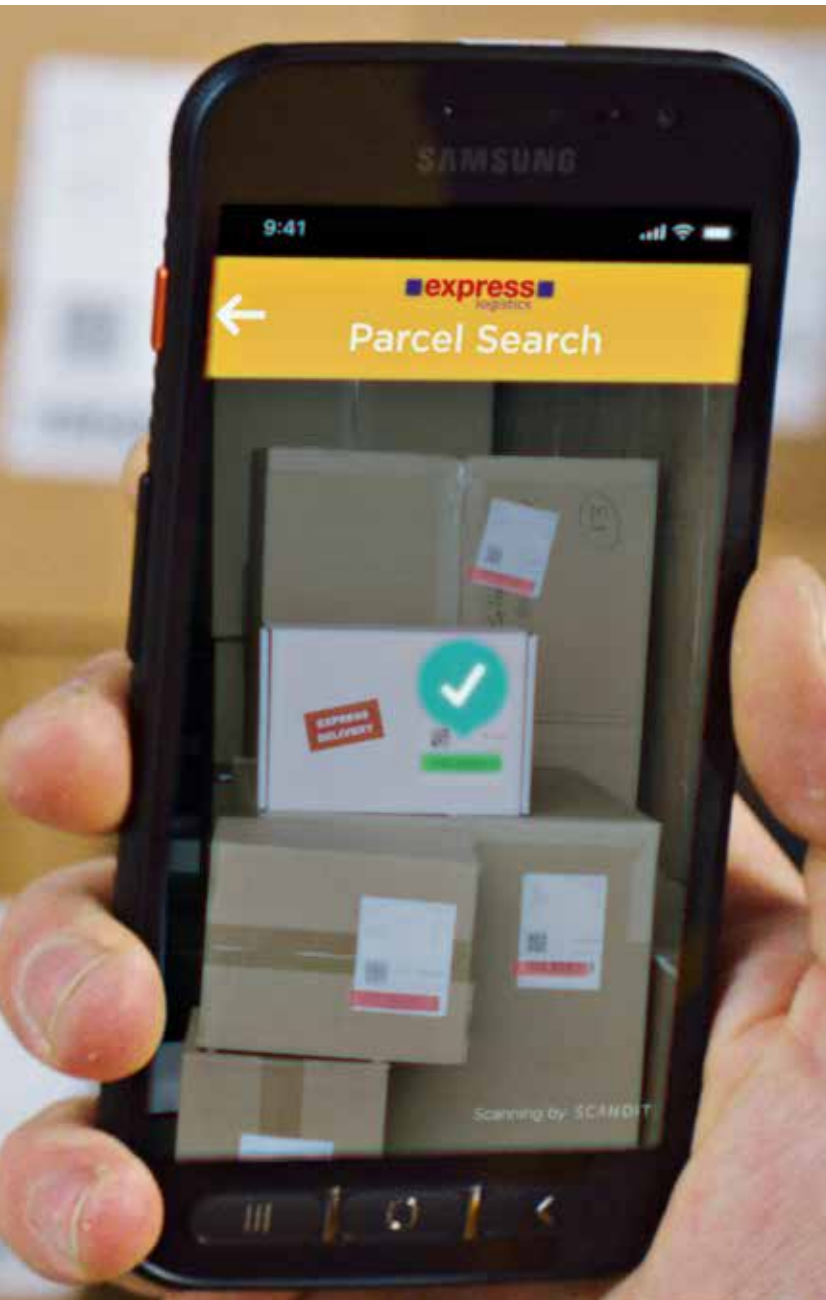
<sup>7</sup>Capgemini, [The Last-Mile Delivery Challenge](#), 2019

<sup>8</sup>Capgemini, [The Last-Mile Delivery Challenge](#), 2019



# The Role of Mobile Scanning in Last Mile

An enterprise-grade scanning solution like Scandit can help organizations use smart devices to:



Last mile organizations have traditionally relied on expensive, dedicated scanners to track and verify deliveries. However, advanced mobile data capture technology has opened up new opportunities for enterprises to increase flexibility, reduce costs, meet growing demand, and drive productivity.

Innovations in computer vision, machine learning, and augmented reality mean last mile organizations can use affordable smart devices to leverage existing product barcodes on delivery items to do things differently – cutting costs and improving efficiencies in ways that traditional dedicated scanners cannot.

Mobile computer vision-enabled barcode scanning software, such as Scandit's, delivers significant advantages compared to dedicated scanning devices. Scandit helps provide high-end, enterprise-grade performance on even low-end (yet tough-enough) smart devices, giving employees the reliable performance they need to scan under challenging conditions, such as fast-moving environments where speed is essential, torn or blurry barcodes, awkward angles, obscured labels from sun glare or raindrops, and more.

## Create Efficiencies and Reduce Human Errors

Scandit mobile computer vision software makes it possible for smartphones and camera-based scanning technologies to capture multiple barcodes in a single scan to turbocharge last mile tasks. Employees can also use Scandit-powered devices to display augmented reality overlays to more easily access and act on information that is shown directly on the device screen.

For example, a driver loading a delivery vehicle could hover their smartphone over items to see them highlighted in the most efficient order for loading. Sorting and locating parcels, as well as verifying their delivery, becomes more visual and intuitive for employees when the correct parcel in the van is highlighted at a glance, leading to greater efficiency and more timely and accurate deliveries.

## Reduce Costs

A smart device using an app powered by Scandit software requires a substantially lower upfront investment compared to dedicated scanners, while still providing an equivalent level of scanning performance.

Compared to the price of a typical dedicated barcode scanner, the average upfront cost of a smartphone is as much as three times lower. In addition, a bring your own device (BYOD) policy that allows employees to use their own smartphones can help reduce or even eliminate hardware costs.

## Future-Proof Your Last Mile Technology

Last mile organizations can future-proof their investments by taking advantage of Scandit's continuing, rapid innovations in mobile computer vision technology on everyday smart devices. For example, with Scandit's ID scanning, employees can scan a recipient's ID to verify their age, and then store the verification in your system to ensure compliance.

Organizations can also maximize their return on existing dedicated scanning infrastructure investments by gradually introducing mobile smart devices with apps powered by Scandit to cost-effectively replace dedicated devices as they reach the end of their lifespan.

# Transforming Your Last Mile Ecosystem

Scandit enables organizations to affordably and directly connect enterprises and customers with packages at every step of the last mile journey, creating a seamless logistics network across all three phases of the last mile delivery process.

## Distribution Center

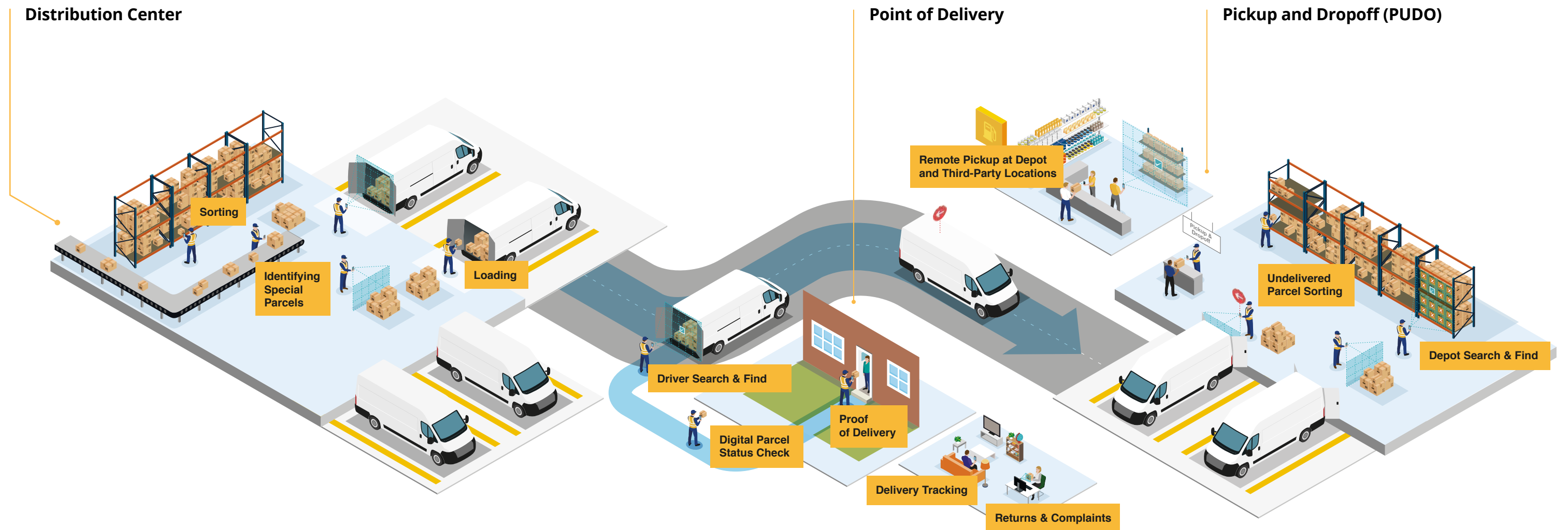
Scandit creates efficiencies where the last mile begins by helping ensure that all parcels and packages are properly accounted for, sorted correctly, and loaded for delivery in the correct vehicles.

## Point of Delivery

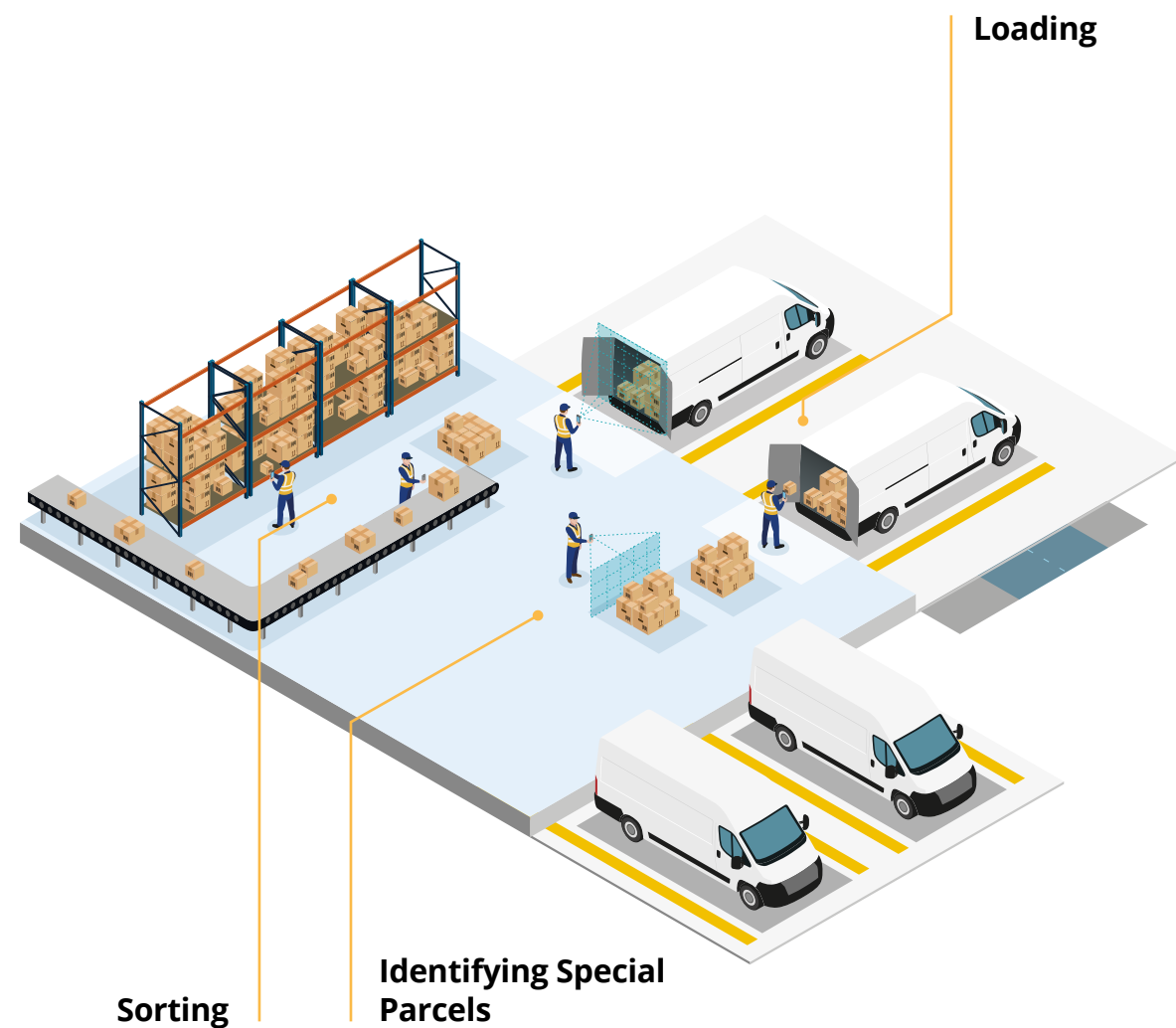
Scandit helps drivers instantly verify that parcels and packages are delivered to the right destination within the designated time frame, in full and without damage.

## Pickup and Dropoff (PUDO)

Scandit enables express delivery enterprises to control the flow of parcels to and from customer touchpoints, such as pick-up points like stores, gas stations, or parcel offices.



# Scandit in the Distribution Center



## Use Cases



### Loading

Drivers loading packages can hover their smartphone over multiple items and read them all in a single scan to check them in quickly. They can also get augmented reality feedback that shows them how to organize packages more efficiently.



### Identifying Special Parcels

Printed labels may encourage theft and are also unable to store real-time information. Scandit-powered devices featuring augmented reality can highlight bar-coded packages that are high-value, timed, have an updated delivery address, or include other special, real-time instructions.



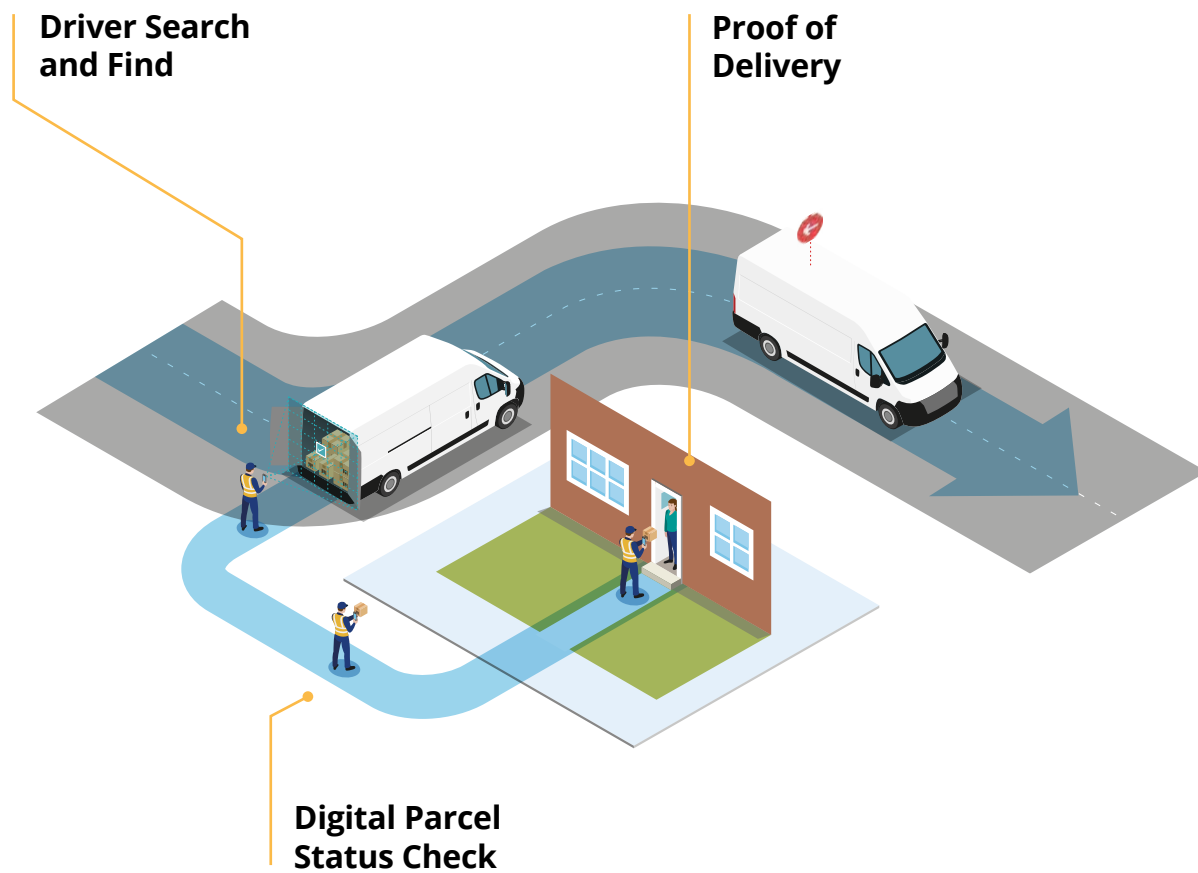
### Sorting

Employees can hover their smart device over multiple packages and get instructions on how to sort parcels using augmented reality highlighting. This feature improves sorting accuracy and saves a considerable amount of time.

# Scandit at Point of Delivery



## Use Cases



### Proof of Delivery

Drivers can use their smartphones to scan barcodes, record an electronic signature, verify an ID, or take a photo. Using a smartphone also allows drivers to take a photo of the location where a package was left, reducing the risk of theft as well as documenting its drop-off condition.



### Driver Search and Find

Drivers can more quickly locate parcels in their vehicles by hovering over packages using Scandit's augmented reality overlay. This provides real-time data, such as up-to-date delivery information, as well as the next item due to be delivered.



### Digital Parcel Status Check

Drivers can scan a package right before delivery to ensure that all special requirements have been met.

# Scandit at Pickup and Delivery (PUDO)



## Remote Pickup at Depot and Third-Party Locations

## Undelivered Parcel Sorting

## Depot Search & Find



## Use Cases



### Depot Search and Find

When a customer comes in to pick up a package, employees can locate that parcel faster by highlighting the correct package's barcode using Scandit's augmented reality-enabled overlay.



### Remote Pickup at Depot and Third-Party Locations

Third-party parcel pickup locations no longer need to be equipped with dedicated scanning hardware. Employees can simply use their own smart devices loaded with your Scandit-powered app, which will then allow them to receive parcels, search and find, and perform proof of delivery when a customer picks up a package.



### Undelivered Parcel Sorting

Returned and undelivered parcels can be processed and sorted much more quickly by an employee or temporary worker who's performing barcode scanning with a lightweight, easy-to-use smart device.



# How Mobile Scanning Impacts Emerging Last Mile Trends

Smart devices equipped with barcode scanning-enabled apps allow last mile organizations to streamline scanning, helping drivers to more easily fulfill additional deliveries per shift. These devices may also be used now or in the future to leverage existing and emerging last mile delivery trends where the ability to capture and share delivery data will be crucial:



## Crowdsourcing

Crowdsourcing services like Uber, Lyft, Postmates, and Amazon Flex are participating in last mile delivery, while online grocery service Instacart uses its own crowdsourced driver pool.



## In-car or in-home delivery

Amazon and others have experimented with providing a service that gives a delivery person access to the recipient's house or car so packages can be left inside.



## Autonomous delivery

Autonomous vehicles, robots, and drones show huge potential for reducing labor costs and removing human error in last mile delivery. Amazon has a stated goal of soon being able to use its Prime Air delivery drones to fly up to 15 miles and deliver packages less than five pounds to customers in fewer than 15 minutes.<sup>9</sup>



## Self-service lockers

Amazon, Home Depot, Walmart, and other enterprises are providing self-service lockers where customers can have goods delivered. This offers consumers the convenience of ordering online without the security risk of packages being stolen off a doorstep or from a mailbox.

<sup>9</sup>Amazon, [A drone program taking flight](#), June 5, 2019



# 6 Ways to Get Started with Mobile Scanning

One of the key benefits of smart device-enabled scanning is that you can get started without having to commit too many resources all at once and using proven, familiar smartphone technology. Here are a few ways your organization can begin using Scandit, so you can see why it's the right fit for your organization:

## 1

### Just One Device

Equip drivers with smartphones using a Scandit-enabled app so they can perform all delivery and communication tasks with just one device.

Many of our customers have already switched to using smart devices for business-critical activities instead of requiring their employees to also carry dedicated handheld scanners.

## 2

### Explore Different Use Cases

Explore how to employ smart device scanning in niche processes and single-use cases to test the technology before a large-scale deployment.

You can also explore ways to incorporate scanning where it hasn't been viable before with dedicated scanners. Low-cost smart devices can provide high-level scanning performance and are easy to deploy.

## 3

### Scale-up at Speed for Peak Times

Managing peak times with the help of temporary workers is easier with smart devices. Temporary or seasonal employees can use a scan-enabled smart device to perform all operations, including sorting, loading, and proof of delivery.

Training is seamless, thanks to a general familiarity with smart device operations as well as the ability of the app to help workers navigate through processes.

## 4

### Explore BYOD

A Scandit-powered app allows you to deploy an effective BYOD policy that lets drivers and even temp workers use their own devices loaded with your software, helping you reduce hardware costs even further.

Scandit's software delivers enterprise-grade scanning performance to even low-end devices, which means you know employees will still be able to work effectively.

## 5

### Lower Hardware Costs

Replacing inflexible infrastructure with powerful mobile software solutions reduces hardware costs immediately – with no need to provide dedicated hardware at PUDO locations.

And new levels of efficiency and productivity go straight to the bottom line.

## 6

### Innovate with Augmented Reality

Investigate the potential of multi-scanning and augmented reality scanning by running pilots to quantify the time saved in your last mile processes, such as sorting or search and find. Multi-scanning and augmented reality hold the potential to substantially increase your staff's work efficiency, reduce human errors, and enable better real-time decisions. Augmented reality also offers the fastest way for employees to get current information about parcels.

## Take the Next Step on Your Last Mile Journey

Scandit's mobile data capture technology supports a full range of use cases that enable last mile organizations to maximize operational transparency and efficiency, reduce costs, and transform every aspect of the last mile ecosystem.

Learn more about Scandit's products, capabilities, and expertise at [Scandit.com](https://www.scandit.com).



### Visit our website:

[www.scandit.com](https://www.scandit.com)

## About Scandit

At Scandit, we help enterprises harness the power of mobile computer vision to bring unrivaled scanning performance to mobile devices for their customers and employees. We bring the physical and digital worlds together by changing the way people interact with everyday objects.

Our computer vision software combines advanced barcode scanning, text, image and object recognition to deliver real-time insights through augmented reality. And what's clever is it can be deployed through enterprise-grade apps on standard smart devices, turning them into enterprise-grade scanners and powerful data-capture tools. It's giving enterprises unprecedented insights into processes and workflows and a plan of how to make them more efficient, more fulfilling and innovative. It means you can deliver exceptional levels of service through an empowered workforce – better decisions, faster delivery, lower cost and happier customers. Today, we have thousands of Scandit-powered data solutions, taking billions of scans every year for customers across the globe.

Don't just take our word for it. Many of the world's most progressive and successful companies are already reaping the rewards of Scandit's computer vision technology. As well as being the preferred mobile barcode scan technology provider of GS1, our clients include Yodel, Hermes UK, FedEx, La Poste, Deutsche Post, DHL, DPD and PostNL.

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