Part One
July 2021

Is Your Last Mile Technology Fit for Purpose?

Industry Challenges & Device Choice

What You'll Find in this Report

The last mile is always evolving. In the new, digital post pandemic reality, delivery businesses must overcome a series of challenges to protect customer satisfaction and profitability.

In the last year post, parcel and third-party logistics businesses have faced:

- Evolving COVID-19 safety requirements & processes.
- Surging e-commerce driving greater delivery volume and stressing the supply chain.
- Unplanned peaks followed by a record-breaking peak season.
- Shifting consumer demands for faster yet cheaper delivery options.

The last mile is a critical component of the delivery process. Capacity came under heavy strain as businesses struggled to keep pace, productivity and quality up, but costs down.

The vital role of drivers and devices

Delivery drivers can make or break last mile outcomes and customer satisfaction. And the devices used for essential processes, from van loading to proof of delivery, are key.

In fact, a VDC Research report found that 50% of logistics stakeholders rated 'mobile devices/apps for frontline workers' as the most critical factor in frontline workforce productivity, up from 34.1% before COVID-19 hit.

So in spring 2021, post-peak and as the pandemic shifted to a new phase, we surveyed executives at leading logistics and postal carriers across North America and Europe to find out more.

In part one of our research conducted by VDC Research and ITTS, we share key findings on businesses' last mile technology and if it's fit for purpose in the new landscape, including:

This research consists of two parts. Part two focuses on Technology Strategy, Investment & Innovation.

READ PART TWO

About this research

118

key stakeholders from postal, parcel and logistics enterprises based in 23 countries across North America and Europe.

7/10

of the largest courier businesses worldwide were surveyed.

Section 1

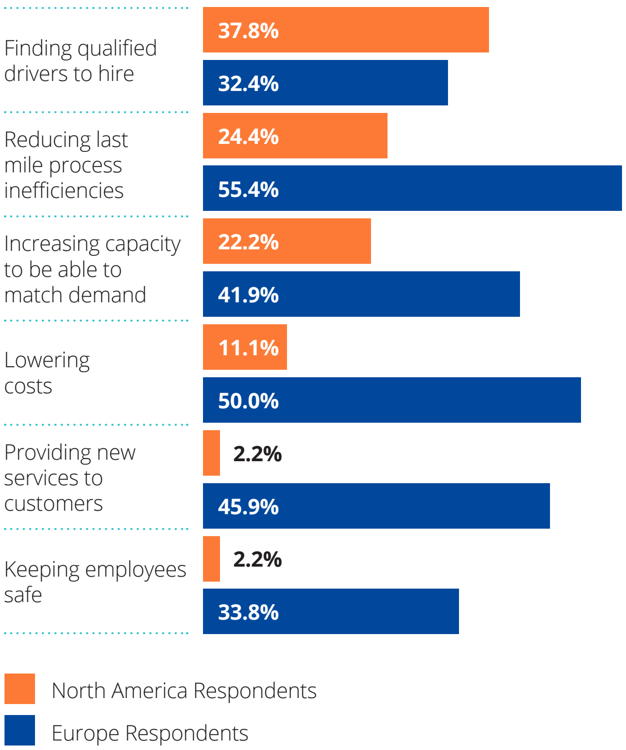
Last Mile Industry Challenges

1

What is currently your biggest challenge in last mile delivery?

The last mile creates many potential complexities. We asked survey respondents to select their biggest last mile delivery challenges at the time of asking in spring 2021. We wanted to see where their headaches were and identify any trends across different regions, business types and sizes.

Biggest last mile delivery challenge*



Biggest last mile challenges by region

North America*

37.8%
Finding qualified drivers to hire

24.4%
Reducing last mile process inefficiency

Europe*

55.4%
Reducing last mile process inefficiency

50%
Lowering costs

*Single response question for North America respondents and multi response question for Europe respondents

What is currently your biggest challenge in last mile delivery?

Key Findings

1. Short term challenges continue to dominate attention

It's clear that most respondents are still focused on overcoming short to medium term challenges in last mile delivery.

Although the record 2020 peak season is over and the pandemic is in a new phase, tackling challenges around eliminating inefficiency, lowering costs and driver shortages remain the priority.

2. People vs process challenges

Last mile businesses in North America seem to function with greater operational efficiency compared to those in Europe, but struggle with recruitment as finding qualified drivers was their biggest challenge (37.8%).

Driver shortages rank lower for European businesses (32.4%), with reducing last mile processes inefficiencies (55.4%) the pressing concern.

Better visibility but a competitive labor pool

This suggests that US operations potentially have better supply chain visibility, as is often enabled by more mature mobile computing fleets and solutions.

US respondents seem to struggle with the human element needed for the operational continuity and capacity required by COVID-19 pressures, rather than with the last mile processes or workflows themselves.

With a more competitive and limited last mile labor pool in North America, it is especially important for operations to cater to drivers with user friendly, effective mobile tools and other differentiated benefits.

3. Short term thinking may prove costly in the long run

While globally companies are largely focused on short term challenges, the longer term challenges needed to evolve the last mile – such as providing new services to customers – aren't currently being prioritized.

European companies seem more progressive in shifting their efforts into how to deliver new last mile services than their US counterparts, where most don't rank it as a challenge that needs immediate attention:

Priority of providing new services to customers

Europe

45.9%

European businesses rated it a top 3 last mile challenge

North America

2.2%

US businesses rated it as their single biggest last mile challenge

At the same time that T&L operations' top last mile challenges are reducing process inefficiencies and lowering costs, modern customer expectations demand a proliferation of supply chain touchpoints and workflows related to omni-channel fulfillment models and reverse logistics.

The new labor and process complexities introduced by these operational dynamics exacerbate last mile challenges, making it especially important for decision makers to invest in mobile technologies that will set them up for ongoing success in an evolving landscape.

Recent VDC Research reporting finds that a strong existing mobile IT infrastructure was the most important factor that enabled T&L leaders to adapt well amid the pandemic, which speaks volumes about the need to consider strong and flexible mobile technology investments today, rather than quick fix solutions, to be prepared for any disruptions tomorrow.

Pat Nolan, Senior Research Analyst at VDC Research

What is currently your biggest challenge in last mile delivery?

Key Findings (cont)

4. Last mile challenges: Size matters

When it comes to fleet size, reducing process inefficiencies is a major challenge for smaller operations across the globe:

- In the US, smaller fleets rank reducing last mile process inefficiencies joint top as their single biggest last mile challenge (33.3%).
- In Europe, almost two-thirds of smaller fleets also rank reducing last mile process inefficiencies as one of their biggest challenges (58.3%).

Capacity concerns affect operations of all sizes – but not equally

While last mile companies overall are highly focused on eliminating inefficiencies in their current operations, increasing capacity to match demand is also a focus for all – and all of the biggest challenges cited are closely linked to capacity.

Due to the differing markets, we've categorized large and small fleet sizes differently for the different regions (see below).

Fleet size key

North America

Large Fleet:
>10K
employees

Small Fleet:
<10K
employees

Europe

Large Fleet:
>2.5K
employees

Small Fleet:
<2.5K
employees

What is currently your biggest challenge in last mile delivery?

Key Findings (cont)

North America single biggest challenge by fleet size – Top 3

	Large Fleets (>10K employees)	Smaller Fleets (<10K employees)
1	47.4% Finding qualified drivers to hire.	33.3% Reducing last mile process inefficiencies.
2	21.1% Reducing last mile process inefficiencies.	27.8% Finding qualified drivers to hire.
3	15.8% Increasing capacity to be able to match demand.	22.2% Increasing capacity to be able to match demand.

Large fleets coping better with capacity concerns

For North American respondents, although increasing capacity to match demand is a top three challenge for both large and small fleets, it affects larger operations less.

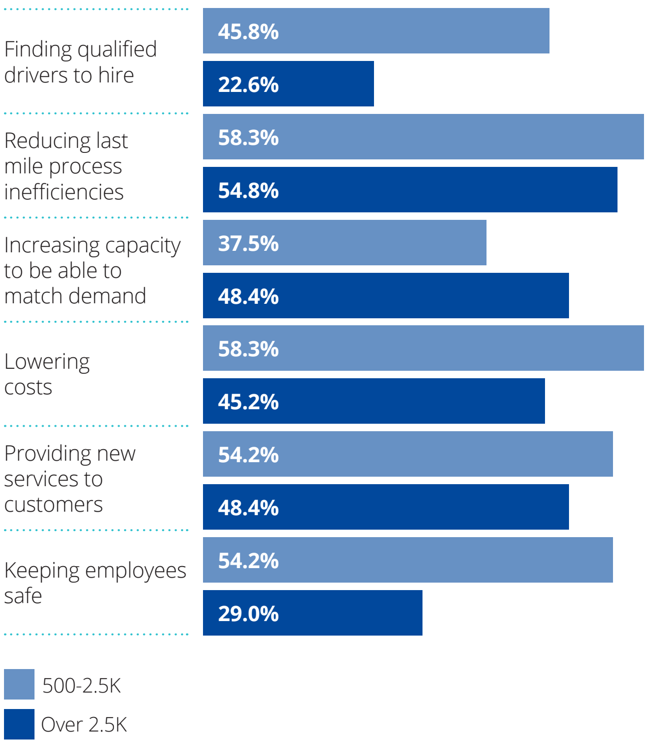
These larger operations already have substantial delivery capacity capabilities to call upon as suggested by:

- The issuing of mobile devices (dedicated scanners and smartphones) to their full-time workforce – 92.9% for larger vs. 64.7% for smaller fleets.
- A larger average percentage of drivers supporting last mile delivery – only 53.6% of larger fleets vs. 45.2% of smaller fleets.
- The ability to focus a larger share of their last mile delivery capacity on home deliveries – 31.1% for larger fleets vs. 18.1% for smaller fleets.

While capacity is a concern, respondents from larger organizations may feel that addressing driver shortages and eliminating inefficiencies from last mile delivery will create the capacity they need to handle the e-commerce boom.

What is currently your biggest challenge in last mile delivery?

Europe – biggest last mile delivery challenge by fleet size



Key Findings (cont)

Large fleets are focused on capacity

For respondents across European countries, although both small and large fleet stakeholders see reducing process inefficiencies as their biggest challenge, secondary concerns vary by size.

Small fleets are secondarily concerned with lowering costs (58.3%), while large fleets are more focused on growth – they see increasing capacity to match demand as their joint second biggest challenge (48.4%), tied with providing new services to customers (48.4%).

Full-time employees vs contractors

Potentially this disparity is due to the fact the larger the fleet of drivers is, the more likely it is to consist of permanent employees, while smaller fleets may have more flexibility with their contractor workforce.

- 80.6% of large fleets have mostly fixed drivers.
- 42.3% of small fleets have mostly fixed drivers.

However, small fleets have much higher peak season bumps (22.2%) compared to large fleets (12.8%), which seem to be able to handle increased demand with their existing fixed workforces.

Peak season scaling strains efficiency

We also observed that organizations who scale the most for peak season (>30% of their fleet size) are heavily focused on eliminating process inefficiencies (83.3%).

For those organizations who scale less and maintain more consistent workforce numbers, only 59.1% rate it as one of their biggest challenges.

Section 2

Technology & Device Choice

1 What devices do you equip your last mile drivers with to support operations?

Delivery staff and drivers are often cited as one of the biggest costs in the last mile and the technology they use to do their work is a key factor in their effectiveness. We set out to learn what technology last mile businesses deploy for their delivery drivers to complete workflows and tasks during delivery.

Global primary mobile devices used by last mile drivers*

North America

53.9%
Smartphones with mobile apps

46.1%
Dedicated scanning devices

Europe

34.2%
Smartphones with mobile apps

31.6%
Dedicated scanning devices

32.9%
Both

*North America respondents asked to select primary device and not given option to select "both".

Key Findings

1. Globally smartphones are pervasive in the last mile

Across both North America and Europe smartphones are most often the primary device of choice, displacing legacy scanning devices in the hands of last mile delivery employees.

When it comes to smartphone consideration and implementation, the two regions' fleets currently have a similar makeup in terms of their deployments of dedicated devices and smartphones.

We use our own smartphone app which provides a single process and helps operational efficiencies.

Respondent comment on smartphones with mobile apps

What devices do you equip your last mile drivers with in order to support operations?

53.9%

Use smartphones as primary device

67.1%

Use smartphones as primary device or in a mixed estate

Smartphones pre-eminent in North America

In North America, the majority of organizations issuing mobile devices to support last mile services use smartphones as the primary device (53.9%).

For smaller fleets of >10K, the number of businesses using smartphones with mobile apps jumps up to 57.1%.

Over two-thirds of European businesses use smartphones or a mixed estate

In European businesses, more organizations exclusively use smartphones as their primary last mile devices (34.2%) than those only using traditional dedicated scanners (31.6%).

Smartphones are even more pervasive when you consider 67.1% of enterprises use smartphones either exclusively or use them as part of a mixed estate with dedicated scanners.

What they said – Device choice

Smartphones ease of use essential

"Smartphones have improved the delivery of letters with faster scanning and ease of use over scanning devices."

A future-proof platform for the last mile

"I see smartphone app development as the way forward to advance competitiveness and provide greater functionality and customer services, such as contactless."

Cost effective and easy to update

"We find smartphones are reliable, easy to update and cost effective."

What devices do you equip your last mile drivers with in order to support operations?

Key Findings (cont)

2. Regional variations in device usage

When assessing device usage trends, we wanted to investigate variations across different regions within Europe. We've categorized the respondents from 21 countries into three segments:

Eastern Europe and the Nordics: ***Looking to smartphones to drive savings***

In Eastern Europe and the Nordics, the biggest regional challenges are reducing costs (46.7%) and providing new services (33.3%), both of which require flexibility and scalability to implement.

This is likely why 100% of respondents using dedicated devices stated they have or are considering moving to smartphones for the last mile.

Correspondingly the rationale for looking to adopt smartphones with mobile apps aligns to tackling those challenges.

The top reasons for considering smartphones are evenly split between:

- Adding new features and capabilities (50%)
- Lowering total cost of ownership (TCO) (50%)

Mediterranean and Southern Europe: ***Use mixed devices for a contractor-based workforce***

Mixed estates (35.8%) are the most common choice in this region and this can be explained by the make-up of their workforces, which are mostly contractors (63.3%).

Deploying smartphones with mobile apps (34%) was the second most common response.

This may also factor into the biggest challenge faced by these businesses of reducing last mile process inefficiency (87.1%) due to the diverse technology and transient workforce.

Western Europe and Britain: ***Prefer single technology estates***

In Western Europe and Britain, almost three quarters of businesses tend to commit exclusively to single technology estates ahead of leveraging a mixture, with smartphones with mobile apps being the most commonly deployed device (38.7%), ahead of dedicated scanners (32.2%).

Only 25.8% currently use mixed device estates.

With regional respondents reporting a workforce made up of mostly fixed employees (80.6%), providing a consistent employee experience might factor into the commitment to one technology.

In recent years there has been an increase in the use of smartphones for frontline employees, notably in enterprise environments such as T&L and Retail.

This surge has been enabled by OEM efforts to make these devices more trusted in terms of durability and security standards, and by organizations that have pioneered their adoption to the end of proven efficacy.

These early adopter organizations have opened the door for further smartphone adoption among their peers, especially as they speak to points of success and satisfaction around smartphones' ease-of-use and broad features/capabilities flexibility.

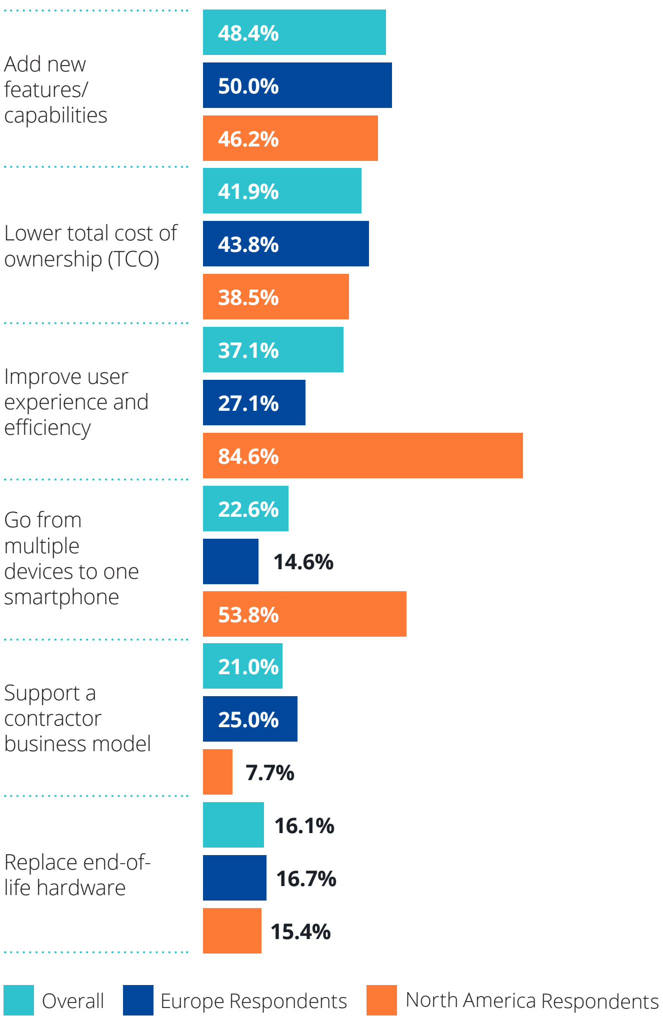
Pat Nolan, Senior Research Analyst at VDC Research

2

What are the main reasons that motivated you to move to smartphones?

For businesses who have adopted smartphones with mobile apps as their primary device or as part of a mixed estate, we wanted to understand the motivations. We also wanted to investigate how they are performing and what the main benefits are.

Global respondent's main reasons for using smartphones



Key Findings

1. Ability to add new features and lower costs driving smartphone adoption

It's clear a number of factors are driving postal and logistics businesses around the world to deploy smartphones to support last mile delivery.

When asked to select the main motivations for moving to smartphones, the top three reasons were:

48.4%
Add new features/capabilities

41.9%
Lower TCO

37.1%
Improve UX & efficiency

What are the main reasons that motivated you to move to smartphones?

Key Findings (cont)

2. Smartphone motivations vary between satisfaction and savings

The primary factors driving organizations to deploy smartphones differ by region.

Focus on UX and satisfaction in North America

In North America, improving the user experience and efficiency was by far the leading factor (84.6%), followed by leveraging the functionality of smartphones to consolidate multiple devices into one (53.8%).

This focus on employee satisfaction is potentially linked to the makeup of the workforce with a high proportion of permanent staff.

75% of respondent businesses used mostly fixed (51.1%) or only fixed (24.4%) employees.

When combined with the biggest challenge of finding qualified drivers (37.8%), it's likely that boosting employee satisfaction and reducing churn plays a role in the focus on improving the UX and eliminating the need to carry multiple devices.

Focus on reducing TCO in Europe

European companies using smartphones say they do so mostly because of the devices' ability to help add more capabilities for drivers and reduce last mile costs:

50%

Expand their mobile features and capabilities

43.3%

Lower costs

These motivations may suggest that the UX focused US organizations already implementing smartphones have a more innovative mobile technology maturity/mindset than their European peers, at least based on their rationale for using smartphones.

Mature technological operations tend to invest based on usability and features best for the end user rather than purely capital considerations.

Using BYOD (Bring Your Own Device) and our own smartphone app reduces costs and is popular with the drivers as it allows communication with the customers to confirm deliveries.

Respondent comment on device choice

3 Have you ever considered moving to smartphones for your last mile operations? [Dedicated Device Users]

For businesses currently using dedicated scanners as their primary device to support the last mile, we were interested in whether they had or were considering switching to smartphones or not.

48.9%

Have considered moving to smartphones

51.1%

Have not considered moving to smartphones

Key Findings

1. More businesses are looking to switch to smartphones

Overall, close to half of respondents (48.9%) who currently deploy dedicated scanners are open to switching to smartphones. This jumps to over half in Europe (53.8%) from the businesses using dedicated devices (31.6%).

With legacy dedicated scanning devices having been around for many years and previously been considered the de facto choice for last mile drivers, the significant shift towards smartphones looks set to continue as more businesses reconsider their last mile device choice.

With around a third of European businesses (32.9%) maintaining a hybrid estate with both smartphones and scanners, it suggests this could be a good first stepping stone towards undertaking wholesale device replacement.

2. TCO reductions motivating European respondents to switch

European decision makers' consideration of smartphones is rooted in lowering TCO (55.6%) as a primary driver.

- Smartphone consideration is higher amongst larger European operations (<2.5K) at 76.9% with TCO the key reason (57.1%).
- 62.5% of European organizations with a workforce of mostly fixed employees have considered switching to smartphones.
- The key factors behind this are the need to reduce TCO (57.1%) and replace end-of-life hardware (42.9%).

Have you ever considered moving to smartphones for your last mile operations?

Key Findings (cont)

3. New capabilities and device consolidation key consideration for North America

In North America, overwhelmingly the ability to add new features and capabilities (100%) was listed as a top three rationale for considering smartphones.

The top factors driving smartphone consideration:

100%
Add new features and capabilities

75%
Replace end-of-life hardware

50%
Go from multiple devices to one smartphone

25%
Lower TCO

Respondent's interest is primarily based on smartphones capabilities, but also the need to move on from end-of-life hardware and consolidate the number of devices drivers use.

The size and scale of North American respondent's enterprises (46.7% over 10,001+ employees) may influence why they lag behind Europe here. Wholesale device replacement at scale can be perceived as a complex undertaking, and not prioritized until the next hardware refresh cycle or when legacy devices reach end-of-life.

There is also a potential link here back to the challenges of sourcing qualified drivers, as providing a single, modern device with new features and capabilities can deliver a better employee experience and reduce churn.

What they said – smartphones vs. scanners

A platform for innovation

"Moving to iPhones has proved reliable and allowed for the roll out of new services, including Proof of Delivery and seamlessly updating the database on our customers."

Cost a key factor in switching

"We use smartphones and BYOD for both Android and iOS. The use of smartphones is driven by reducing cost for last mile delivery in a very price competitive market in Scandinavia."

Digitalizing processes is a focus

"90% of our drivers use smartphones and the remaining 10% dedicated devices. We use an app for services such as package marking and delivery tracking, have digitized the proof of delivery and we're currently implementing geolocation."

Section 3

Technology Performance

1

Has the performance of smartphones in your last mile deployments delivered the benefits you were expecting?

We asked last mile businesses using smartphones to support driver operations whether they were meeting performance expectations – and what specific benefits they were delivering.

Smartphone satisfaction in last mile deployments globally.

Yes

79.1%

Are satisfied with smartphone benefits

No

20.9%

Are not satisfied with smartphone benefits

Key Findings

1. Overwhelmingly smartphones are delivering last mile benefits

Overall, a large majority of businesses who use smartphones (79.1%) are satisfied and believe the performance of smartphones in last mile operations has delivered the benefits they expected.

Almost three in four (73.3%) North America respondents using smartphones believe the solution is delivering the benefits they expected.

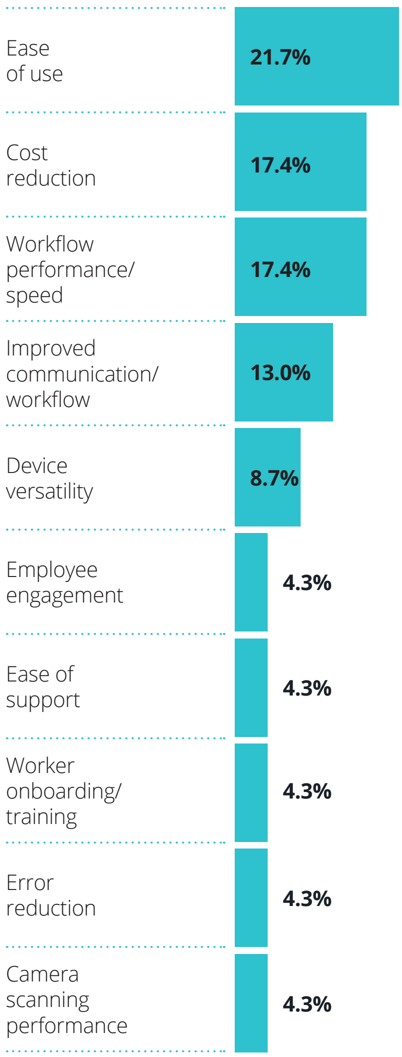
In Europe, this is slightly higher with 80.8% stating satisfaction with the performance and outcomes of smartphones.

We mainly use Samsung smartphones and some scanners which are being replaced with smartphones. Smartphones are reliable and it is easier to update the Android App than the hardware scanners.

Respondent comment on device reliability

Has the performance of smartphones in your last mile deployments delivered benefits?

Primary reason for satisfaction with smartphones?



Key Findings (cont)

2. Smartphones ease of use is crucial to satisfaction levels

When asked for more details on why smartphones were delivering the benefits they expected, a number of different factors were listed.

The leading factors contributing to smartphone satisfaction:

- **21.7%** Ease of use
- **17.4%** Cost reduction
- **17.4%** Workflow performance/speed

The combination of user friendliness, the ability to help drivers complete last mile tasks more quickly and overarching cost savings means smartphones are proving their worth.

This is especially true in an increasingly driver-centric landscape, providing a vital tool to help efficiency in one of the most complex and costly parts of the delivery process.

Has the performance of smartphones in your last mile deployments delivered benefits?

Cite Process Inefficiency as a Challenge

North America

50%
Dedicated device users

26.7%
Smartphone users

Europe

65.2%
Dedicated scanning devices

36%
Smartphones with mobile apps

Key Findings (cont)

3. The challenges of using dedicated devices vs smartphones

Respondents using dedicated devices were almost twice as likely to believe process inefficiency is a major challenge compared to smartphone users (results left).

Focus on innovation

Businesses deploying smartphones are more focused on innovation than those with primarily dedicated devices – with new features and capabilities a major priority for both US (46.2%) and European (50%) respondents.

What they said – smartphone scanning & ruggedness

Easy to use yet rugged

"We switched from scanning devices to smartphones about 18 months ago. It is proving successful as they are easy to use, provide faster processing and less breakages than expected."

Scanning performance

"Smartphones have improved the delivery of letters with faster scanning and ease of use over scanning devices."

Conclusion

We hope you found this report and insights from other delivery organizations a useful snapshot of the challenges and technology choice in the last mile following an eventful 2020.

It's clear that the last mile is dealing with a host of challenges and one way to tackle them is to deploy the best fit technology that allows businesses to satisfy employees, meet demand variations, while increasing operational efficiency.

We identified clear trends that are reshaping last mile technology:

- Businesses still feel they can sharpen up and reduce process inefficiencies, which will help with other key challenges of reducing costs, freeing up capacity and tackling driver shortages.
- Smartphones are displacing legacy handheld scanning devices and satisfaction with their performance means this trend will likely accelerate.
- The dual ability of smartphones to help businesses add new features and capabilities and lower total cost of ownership is an attractive reason for adoption over dedicated devices.
- With the ability to add new features, device consolidation and replacing end-of-life hardware all cited as reasons for considering switching, the shift towards smartphones will help businesses support the next steps in their technology roadmap.

Scandit has helped many of the world's largest post and parcel organizations successfully deploy enterprise-grade scanning and augmented reality capabilities into mobile apps to transform driver operations and outcomes.

LEARN HOW

Part Two Available Now

The second part of our research looks into priority areas of investment in last mile technology, attitudes to different deployment strategies and attitudes to new innovations like augmented reality.

READ IT HERE

Research Methodology & Demographics

This research was conducted by independent agencies, ITTS and VDC Research, on behalf of Scandit via telephone interviews, supplemented by online surveys.

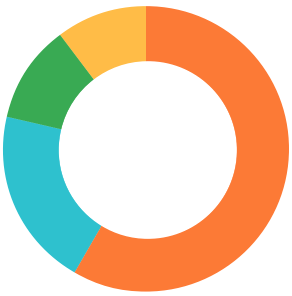
Research respondents agreed to share their views and experiences under the condition of anonymity.

North America Respondents

45

Respondents – USA & Canada

Job Role



- **57.8%** Operations Executive or a member of the Operations Department
- **20%** IT Executive or member of IT Department
- **11.1%** Executive Management Team
- **10%** Executive or member in another Department (HR/Sales/Finance/Other)

Fleet Size

- **31.1%** Fewer than 1000
- **11.1%** 1000 - 2000
- **26.7%** 2,001 - 5000
- **8.9%** 5,001 - 10,000
- **6.7%** 10,000 to 20,000
- **15.6%** 20,000+

Total Number of Employees

- **17.8%** Fewer than 2,000
- **22.2%** 2,001 - 5,000
- **13.3%** 5,001 - 10,000
- **20%** 10,001 - 20,000
- **26.7%** Over 20,000

Last Mile Employee Types

- **24.4%** Only full-time employees
- **51.1%** Mostly fixed/full-time employees
- **17.8%** Mostly contractors
- **6.7%** Only contractors

Research Methodology & Demographics

Europe Respondents

73
Respondents

21
Countries

Job Role

- **27%** Operations Executive or Operations Department
- **37%** IT Executive or member of IT Department
- **18%** Executive Management Team
- **17%** Executive or member in another Department (HR/Sales/Finance/Other)

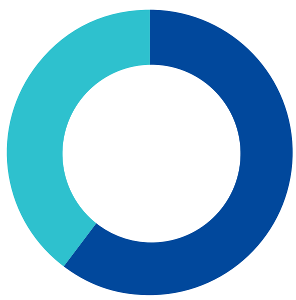
Fleet Size

- **32.1%** Fewer than 500
- **31%** 500 to 2,500
- **22.6%** 2,501 to 9,999
- **14.3%** 10,000 or more

Regions

- **39.3%** Mediterranean/ Southern Europe
- **39.3%** Western Europe/ British Isles
- **21.4%** Nordics & Eastern Europe

Last Mile Employee Types



- **60.3%** Mostly fixed/full-time employees
- **39.7%** Mostly contractors

Post or Non-post

- **31.1%** Post
- **67.9%** Non-post

Scandit helps post, parcel and express businesses take cost and time out of end-to-end delivery processes by turning everyday smart devices into enterprise-grade mobile barcode scanners.

From the depot to the last mile, regular tasks like loading, identifying, sorting, searching, tracking and proof of delivery can be streamlined using mobile apps powered by our computer vision, ID scanning and augmented reality (AR) software. Scandit provides unrivaled scanning speed and accuracy.

Software scanning has typically 3x lower costs than dedicated scanners. And the use of BYOD (bring your own device) policies provides further cost-reduction and workforce flexibility. Scandit supports hundreds of companies doing billions of scans on over 100 million devices.

SCANDIT

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