



Right package...
Wrong vehicle...
Why load errors
cost millions

How are parcel carriers using technology in their last-mile facilities to reduce loading errors?

217 billion packages are expected to be shipped in 2025. Most will arrive as planned. Load errors occur when a package doesn't reach its intended recipient the first time because it has been sent out at some stage on the wrong vehicle. This small handling error causes a cascade of actual and hidden costs for the carrier business.

There are three ways load errors negatively impact the carrier business:

- 1. Poor Customer Experience** – When packages don't arrive as expected it can lead to frustration and mistrust for the shipper and the recipient.
- 2. Operational costs** – This includes answering customer service enquiries from shippers and recipients, and interruptions to the following delivery process where loading errors need to be included. Packages sent out in the wrong vehicle need to return to the facility and be manually re-processed, or drivers arrange to meet mid route to pass over parcels.
- 3. Environmental costs** – All additional vehicle journeys double or potentially triple the carbon footprint of each load error.

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Several factors influence load error costs. These include the scale of the carrier—whether it is an integrator operating at the global level or a smaller regional carrier—as well as network design principles and transportation methods employed. The specific type of loading error, the stage at which it is identified, and the efficiency of the recovery process all play a significant role in determining the overall cost. Parcels with guaranteed delivery, international consignments, and mistakes during peak season may further complicate and drive up the costs of correcting the error. Loading mistakes result in substantial direct costs—in our experience, up to EUR 40, –(45 USD) per load error—and indirect costs such as customer dissatisfaction, potential business loss, driver retention challenges, processing of claims and complaints, and administrative overhead.’

Solutions Consultant,
Avery Dennison

How do load errors happen? Human error.

At many last-mile facilities, the delivery vehicles are loaded early in the morning. Staff manually scan the barcode on each package before placing it in the correct zone for the assigned delivery vehicle. Depending on the volume of packages, staff may need to scan thousands of packages per hour. Some carriers try to prevent mistakes using supervisors to perform random checks in outbound zones, scanning a selection of packages to catch load errors before they enter the vehicle. Even with these controls in place, one in every two delivery vehicles has a wrong parcel

The Intelligent package tells you it's in the right place

What if a package could inform staff it is in the right or wrong vehicle, without needing to be individually scanned? Carriers are now applying intelligent labels to packages that can be read by sensors without line of sight. These intelligent labels, using RFID technology, enable precise and efficient verification and locating.

How does this work in practice? Once an RFID portal is installed, or a reader is built into the van, any package entering the wrong vehicle is immediately flagged as an error. Supervisors can now quickly locate the mistake and place it in the correct vehicle.

Intelligent packages in the last mile are realizing three significant efficiency improvements:

1

60%

Reducing error loads by over 60%, protecting the customer experience, the operational efficiency, and the environmental performance of the business.

2

1000_s of hours

Significantly optimizing the workforce at last mile facilities by removing manual scanning tasks. Extrapolated across an entire carrier operation, this saves thousands of hours of unnecessary scanning tasks every day.

3

15_{minutes}

Reducing the time parcels spend 'under the roof', getting drivers out on delivery routes an average of 15 minutes earlier

How do barcoded packages compare to intelligent packages?

If we extrapolate data obtained from operational activities of the carriers that have implemented or piloted the technology, onto a carrier with an annual volume of 500 million parcels, we will achieve the following results:

| | Intelligent Package |
|---------------------------------------------|-------------------------------|
| Time saved on replacing 1 barcode scan | 170-250 K man hours per year* |
| Reduction in driver's "under the roof" time | 5-25 minutes* |
| Error loads improvement | 30-80% / 750K - 25M per year |

*Depending on the existing process and RFID solution being implemented

What is the ROI for intelligent packages in the last mile for carriers?

Our experts understand every carrier has its own process for the last mile, and these can vary across regions. Would you like to hear how intelligent logistics solutions can adapt to local needs?

Schedule a call with our Solutions Consultants: Rob Pick (+44 0115 9896765) or Jason Ivy (+1 859 420 4891) to share the challenge you have in your facility.

The solution is here already!



The last mile – the solution is here already

[Download the full report here](#)



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