FarEye

WHITEPAPER

Last-Mile Delivery Excellence

Perfecting the Customer Delivery Experience to Boost Top- and Bottom-Line Performance

Promises are meaningless without delivery.

Bringing a single product from conception to production to delivery at the customer's doorstep requires the combined efforts of hundreds to thousands of workers. What a waste it is if all that effort by all those people is undone by a single slipup in the very last step—the last-mile delivery of that product to the customer's door.

Last-Mile Delivery Excellence: Key Pillar of Success for Retailers, and 3PLs

Last-mile delivery is more important than ever. Customers' expectations for delivery excellence continue to climb for faster error-free delivery, more granular visibility, more convenience, and increased flexibility. With inflation and the rising cost of inputs and labor constraining the ability for retailers and brands to compete on product price alone, service and delivery become ever more critical elements of success. Here we look at three pillars of achieving last-mile delivery excellence:

1. **Perfecting the Customer's Experience**
2. **Reducing Logistics Complexity**
3. **Maximizing the Bottom Line**

> "Last-mile is an integral part of the consumer journey as 85% of consumers won't buy from a brand again if they have a negative last-mile experience."
>
> **Jorge A. Lopera**
>
> Vice President, LATAM & Industry · FarEye

Perfecting the Customer's Experience

First and foremost, last-mile delivery excellence is about satisfying and delighting the customer. This requires consistent, damage-free, on-time deliveries, excellent transparency and visibility throughout the process, and providing choice and control to the customer.

Timeliness and Reliability

Surveys and research have shown that customer expectations, as well as the average actual time it takes to deliver an order, have gotten progressively shorter, from an average 8-day delivery time 20 years ago, to 5.5 days a decade ago, to now slightly over two days from order to delivery. Continuous reduction in delivery time expectations and competition is driving retailers and 3PLs to make many changes such as:

Micro-fulfillment centers and hyperlocal delivery—stocking items in locations in close proximity to the consumer, such as fulfilling from retail stores and small-scale urban warehouses, is a key strategy for shortening delivery times. These locations can be quite expensive, so some companies are partnering with existing retailers or third parties to increase the number of hyperlocal stocking locations.

Adaptable workflows, systems, and processes—Disruptive events such as the pandemic, extreme weather events, regulatory changes, and competitors' actions often drive the need to suddenly shift delivery methods and processes. For example, many retailers had to suddenly and massively start or ramp-up their curb-side pickup operations during the pandemic. Businesses that invested in systems that can be rapidly adjusted to accommodate new workflows and processes have been better able to maintain timely and reliable delivery in the face of new and varied disruptions.

Cross-domain optimization—Leading companies have systems that can optimize logistics across different modes, timeframes, tiers, and types of delivery. This allows for smarter decisions about whether an order should be delivered via private fleet, courier, parcel, or crowdsourced delivery service. This can add capacity and lower costs while maintaining or improving the percent of orders delivered within the promised delivery window.

> "We should expect big developments in micro-fulfillment, as the market nears a value of $10 billion. Hyperlocal delivery networks are valuable assets, particularly in urbanized areas."
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Dynamic dispatch and routing—On-time delivery rates can be improved by dynamic dispatching and routing capabilities—i.e., the ability to change routes and plans in response to changes in traffic, delivery and installation delays, and other factors. Amazon is able to reroute their drivers in real time based on changing conditions. Retailers and 3PLs seeking to keep up with Amazon are obtaining similar capabilities.

Dwell-time reduction/elimination—Dwell times at distribution centers can be reduced or eliminated altogether through methods such as cross-docking and/or dropship, as described further in the section on Streamlining Delivery Flows below.

Transparency and Visibility

Some orders are critical, where a whole project, production line, or someone's health is dependent upon the timely delivery of a specific part, machine, or substance. In other cases, a consumer may have an intense emotional anticipation of receiving a particular fashion apparel item, technological device, food, or crafted item. Sometimes onsite preparation is needed to receive the delivery, such as at a construction site, where someone may need to clear an area, set out traffic cones, direct the delivery vehicle to the unloading area, and/or supervise the unloading process. In these types of cases, customers really want ongoing visibility and transparency about the precise, up-to-date status of their order and its delivery. Thus, lastmile delivery excellence requires elements such as:

Real-time visibility—The ability to track in real-time the location and precise ETA (estimated time of arrival) for an order can be critical for both the customer and the shipper. This requires integration of many sources and types of data, such as shipment updates from carriers, ELD/GPS location data, weather, traffic, and more. It requires software that can calculate precise ETA, based on factors such as traffic, weather, port congestion, and other factors impacting transport and delivery times. FarEye's Intelligent Delivery Visibility is a good example of a visibility solution.

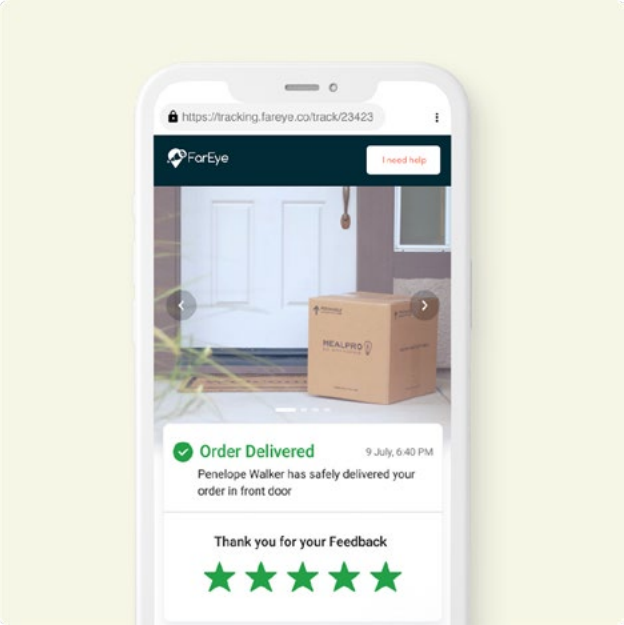
Real-World Example

A global pizza chain reduced delivery time by 27% using technology from FarEye, including real-time tracking, address geo-fencing, and machine learning to automate task allocation.

[1] Sources for these statistics include McKinsey: Retail's need for speed (September 2021), University of Washington: America's Addiction to Absurdly Fast Shipping has a Hidden Cost (July, 2019), and Clutch Research: How Consumer Hunger for Two-Day Delivery Impacts Businesses (September, 2019).

[2] Amazon partners with retailers and service providers to offer their Amazon Hub Counter and Amazon Hub Locker services. Various 3PLs are starting to offer micro-fulfillment center services as well, such as Fabric, Warehouse Anywhere, and others.

Configurable alerts, early warning, and reminders—The customer and shipper both want the earliest possible warning when a delivery is running late. Early warning provides more chances for customers to adapt and change plans, such as altering their production sequence because delivery of an input part or material is delayed. Logistics personnel can be more proactive about notifying their customers about any delays as soon as possible and then making the appropriate adjustments to their route plans to minimize delays of other deliveries. Many customers like to receive reminders about important deliveries. All of this should be configurable so that customers and shippers are able to receive the amount and type of information they want, in their preferred manner and medium, without being overloaded.



Proof-of-Delivery—For critical deliveries, the appropriate proof-of-delivery (PoD) is needed, typically some combination of a recipient signature and/or photos of the packages dropped off at the point of delivery. The PoD should be integrated into the alerting/status system and indicate the number of packages, order number with a link to more order details, signature, delivery address, and additional location information as needed (e.g., 'side door' 'at front desk concierge,' GPS coordinates on a large campus). If the customer knows the package has arrived, they are more likely to bring it into their house or office in a timely manner, thereby reducing the chances of theft. Images may also provide some degree of evidence that the exterior of packages were undamaged when delivered. The system should minimize the amount of extra time spent by drivers creating these PoDs, such as auto-filling the data, algorithms that determine when it is or is not necessary to take a picture, and automatic attachment of the image or signature to the PoD for the shipment being currently delivered.

Damage reporting, return status, feedback—It should be made as easy as possible for customers to report damage, check on the status of returned items, and provide both positive and critical feedback. This provides 'reverse transparency,' from customer to provider. This includes providing multiple opportunities and methods (e.g., via phone, packing slip form/check boxes, email, website, etc.) for customers to provide feedback or report on damage. For important deliveries (e.g., high-value, over-the-threshold, installed deliveries) and important customers, feedback should be actively solicited via automated phone- or email-based survey/outreach.

Choice and Control

In addition to timely delivery and visibility, customers expect to have a range of choices and degree of control over their delivery experience, such as:

Range of delivery windows, timeframes, and costs—For deliveries that require the customer to be home, customers want the ability to specify narrow windows of delivery, such as a specific hour. Most customers understand they may need to pay extra for a narrow delivery window or ultra-rapid delivery.

Range of delivery locations and options—Customers expect a wide range of choices in the manner and location of delivery, such as at home, in office, curbside, kiosk, and at pickup lockers that may be at an apartment or partners' locations. Some retailers can deliver unattended (i.e., when no one is home) into the home or attached garage or into the trunk of the customer's car anywhere it is parked, provided that the customer has the appropriate technology. A last-mile delivery system that can deliver from anywhere to anywhere is required to provide this sort of flexibility.

'Green' delivery—A growing segment of consumers is concerned about climate change and seeking ways to reduce their carbon footprint. This demographic appreciates the chance to select delivery slots that are greener, i.e., that have a lower carbon footprint. This can be enabled by continuous route optimization software that can identify delivery slots that minimize the amount of extra driving required. Effective capabilities for sustainable delivery can be found from FarEye.

Last-minute scheduling and rescheduling—Customers are getting used to being able to order items at

Real-World Example

A leading furniture retailer increased on-time deliveries by 24% and ETA accuracy by 97% using technology from FarEye. This included enhanced consumer scheduling (enhanced delivery window options, rescheduling, flexibility), inbound orchestration (technology-enabled orchestration of first- and mid-miles which facilitated more efficient last-mile delivery), and routing and navigation software in the last mile.

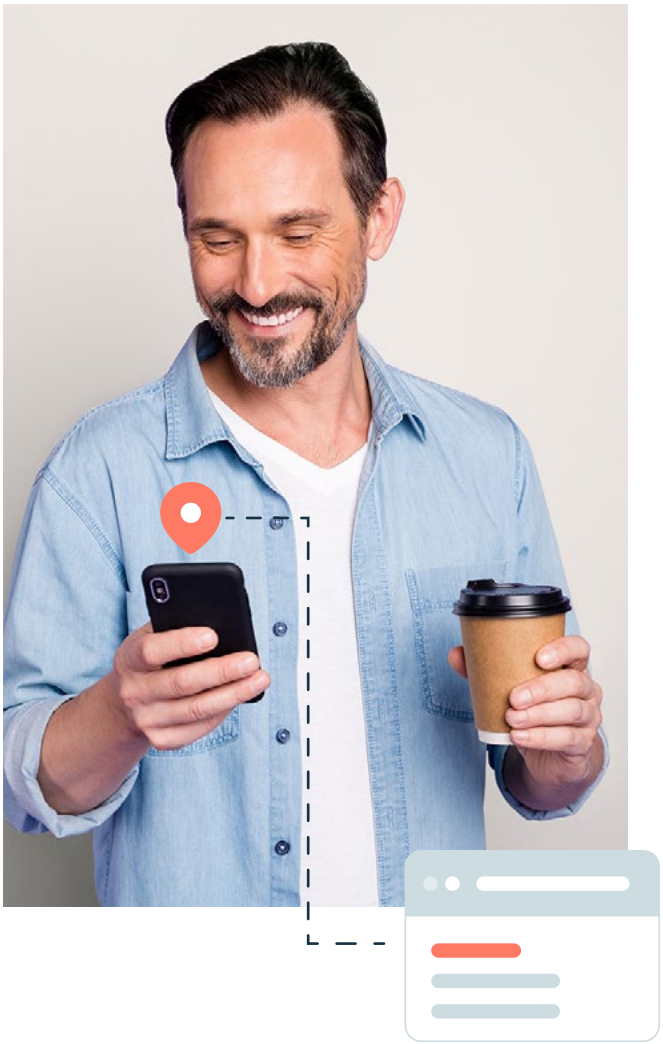
[3] ELD = Electronic Logging Device

[4] A Bill of Lading signed by the recipient may also serve as the proof-of-delivery.

the last minute or change their order at any time. This should include showing the customer what kind of changes to their delivery slot are feasible, including changes on the day of delivery. This requires a system that can do dynamic dispatching, routing, and re-routing.

Customer feedback and response mechanisms—Most customers want a chance to express their frustrations when service expectations are not met. It is much better to have them express that frustration directly to the seller/service provider, rather than posting a rant on social media. Conversely, some customers like to show appreciation for an employee who goes above and beyond. Others want to share their ideas for how a service or product can be improved. At each step throughout the buying and delivery process, customers should be presented with opportunities to easily and instantly provide feedback—particularly at those key moments they are most likely to be ready to provide feedback, such as just after ordering and just after receiving the product.

- For high touch services, such as white glove delivery and installation, some service providers automatically survey their customers about their experience, either via phone, text, or email as preferred by the customer.
- The company should immediately acknowledge receipt of any feedback and a real person should respond in a timely manner. This not only lets the customer know you care, but also potentially allows for a real dialog to gain further insights.
- A process for digesting and incorporating this feedback into a continual improvement program can be powerful. Implementing these feedback follow-up processes may seem expensivebut that expense can be more than offset by the savings enabled by reducing mistakes and returns, and by the incremental revenue and profit generated by increasing customer satisfaction and loyalty.



Reducing Logistics Complexity, Increasing Efficiency

Perfecting the customer experience, as described above, requires companies to take steps to reduce logistics complexity and increase efficiency. This includes things like streamlining delivery flows, enabling mode flexibility, increasing automation, optimizing routes, and simplifying driver workflows.

Streamlining Delivery Flows

Reducing dwell times, product handling, and the number of legs in the end-to-end journey can all contribute to reducing complexity and delivery times, as well as making ETAs more predictable and reliable. Shifting from traditional warehouse (putaway/pick-pack) to crossdocking/flow-through models reduces end-to-end delivery times for items that are not stocked locally. Hybrid warehouses can accommodate mixed flows (putaway for some items, flow-through for others). Store replenishment cross-docking can be enabled by having suppliers or a central DC build store-specific rainbow pallets. Drop shipping from suppliers directly to the customer further reduces steps in the end-to-end flow and reduces the amount of inventory needed in distribution centers and stores. Drop-ship programs require close coordination and quality control with suppliers and may not work for orders requiring ultra-fast delivery (e.g., same-day, 1-hour, or 2-hour delivery).

Mode Flexibility

Cross-domain optimization (described above in the section on Timeliness and Reliability) requires underlying mode flexibility—the ability to utilize the most optimal mode for last-mile delivery. This requires not only the resources (e.g., private fleet vehicles) and commercial relationships (e.g., parcel contracts) for each of those modes, but also an optimization system that has the flexibility to handle any mode, including emerging crowdsourced delivery services. This enables the ability to handle peak loads cost-effectively by onboarding freelance drivers and other delivery services on demand.

Automation and AI

Automation and AI can help last-mile delivery planners, dispatchers, and drivers make smarter, faster decisions. These technologies can automate mundane, redundant, low-value tasks and filter out low-priority exceptions, drawing attention to and providing the data for people

[6] In contrast to single-SKU pallets, rainbow pallets (aka multi-SKU pallets) contain a mix of products in the unique quantities required by each specific store for the replenishment period being delivered. This requires close coordination of the personnel and processes executing store-level planning with the logistics processes at the retailer's or supplier's DC that is building the rainbow pallets.

to focus on higher-level decisions requiring human judgment. Human planners can focus on making business judgment calls such as considering tradeoffs for different route optimization alternatives. Dispatchers can spend less time monitoring every little detail of who is running on vs. behind schedule and more time solving problems that arise when there are delays. The system gathers relevant data to help them solve those problems. Automation of drivers' administrative tasks lets the drivers focus more on making the delivery and providing great customer service.

Dynamic Route Optimization

Dynamic dispatching and routing capabilities (as described above in the Timeliness and Reliability section) require systems and processes that can continually adjust and make optimal changes on the fly. This includes things like the ability to transfer products between trucks in field, mixing of same-day and next-day deliveries, dynamically updating network-wide optimization based on unexpected changes to traffic conditions (including having less congestion than expected in certain periods and areas), and reoptimizing or adjusting plans to account for unexpected service times (longer or shorter than planned).

Driver Workflow Simplification

Drivers are at the core of last-mile delivery services. They are the face of your company to the customer, representing your brand. As such, tools and methods that make drivers' work simpler, less prone to mistakes, and that free up their attention to focus on ensuring top quality customer service are of high value. This includes technology-enabled processes such as simplified semi-automated checklists for vehicle inspection, state-of-the-art navigation software, site-specific delivery instructions and visuals, and systems and processes to automatically double-check that the correct package is being delivered. For example, the Intelligent Customer Experience solution from FarEye provides these kinds of simplifying and safety-enhancing capabilities for drivers, as well as improving customer experience in other ways such as flexible slot booking, order trace and track, and proof-of-delivery. Besides implementing technology, driver workflow simplification should include process improvements, such as improving how parcels are loaded into trucks, to enable better optimized, more error-free deliveries.

Maximizing the Bottom Line

When perfecting the customer experience, costs need to be controlled simultaneously to maintain and improve profitability. Many of the above capabilities can help to reduce costs and maximize profit, such as:

Dynamic route optimization—increases vehicle utilization, driver productivity (deliveries per hour), while reducing fuel consumption.

Automated, customizable, workflows—helps businesses automate their unique processes, reduce service variation and errors, while institutionalizing best practices.

Reverse logistics integration—Integrating returns and reverse logistics into order delivery can improve vehicle and driver utilization.

Visibility and transparency—Providing better visibility, transparency, and customer communications helps maximize first attempt delivery rates (FADR), reduces customer disputes and chargebacks, and enables clean and final invoices to be issued as soon as items are delivered, thereby accelerating receivables collections.

Mode Flexibility—The ability to optimize across modes lowers overall delivery costs, reduces capital expenses (by right-sizing private fleets), and maximizes surge capabilities to meet peak demand without additional hiring.

Carrier and Driver Continual Improvement Programs

Initiatives to continually improve driver and carrier performance can be built on the capabilities described above. Improvements can be driven by a scorecard of KPIs for drivers and carriers, such as measuring on-time delivery rates, FADR, damage rates, and so forth. Organization-wide, regional, and individual goals for improvement should be established and monitored as part of continual improvement programs, with regular reporting to management. Improvements can be measured for specific initiatives such as driver training and providing drivers with tools to improve efficiency.

Other metrics can be used to measure the effectiveness of adding new capabilities, such as what effect implementation of a dynamic route optimization system has on utilization, delivery rates, fuel consumption, and other metrics. Conversely, specific goals, such as reducing fuel consumption, can be tracked to see the impact of various programs and actions, such as training

[7] The delivery driver's mobile delivery app should make it very easy for them to add notes about a specific site or customer, such as how to navigate the property, and/or unique aspects of the customer's receiving processes, such as security check-in requirements. This might include the ability for the driver to do voice entry of the notation while they are walking, thereby taking no extra time to add the note. The app may also include things like single-click checklists and the ability to snap a photo and have it automatically associated with that location.

drivers not to do hard acceleration and braking, or using equipment inspection to ensure properly inflated tires and a well-maintained fleet. Similarly, safety programs should include tracking traffic violations and incidents/ accidents. More granular data from ELDs can be used to identify drivers who have dangerous driving habits and should receive additional training and guidance. Programs to reduce damages and claims can identify carriers and drivers with above normal damage rates to focus improvement efforts on those individuals. Programs to proactively solicit customer feedback can be invaluable in identifying which service improvements are needed and guide efforts to increase customer satisfaction.

Achieving Near-term Benefits and Long-term Progress

By combining the elements described above, businesses can survive and thrive in the face of disruptions that require them to pivot and adjust. Retailers and third-party logistics companies can achieve last-mile delivery excellence in a way that pays for itself. Some elements provide rapid payback, such as implementing dynamic route optimization. These can be implemented first and used to fund further improvements to make progress over the long term. FarEye's last-mile delivery solution is a good example of the type of platform that can help provide these benefits. Over the long run, investments in new systems and processes to achieve last-mile delivery excellence can create a culture of excellence and growth that helps a company achieve success for years and decades to come.

> "Technology allows retailers to create a holistic brand experience through consistent touch points, end-to-end visibility, and consumer influence, via real-time delivery instructions."
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