



E-Guide

The ultimate guide to

Boosting e-grocery efficiency with time slot booking

Dynamic time slot capacity optimization helps grocery retailers improve delivery reliability, protect margins, and give customers better control over their order experience.

In this guide

Learn how time slot booking works, why static delivery windows limit growth, and how ORTEC helps retailers connect customer promises with decisions regarding capacity, routing, labor, fulfillment, and execution.

Introduction

Convenience has become a defining factor in online grocery retail. Customers want delivery options that fit their lives, while retailers must balance service expectations with the realities of capacity, labor availability, and transportation costs.

As delivery networks become more complex, managing delivery windows effectively is becoming a key operational capability. When delivery windows are aligned with operational constraints, retailers can improve customer satisfaction while making better use of delivery resources. When they are not, service levels, costs, and profitability can quickly come under pressure.

In this guide, I'll explore how dynamic Time Slot Booking helps e-grocery retailers improve delivery efficiency, offer more reliable delivery choices, and create a stronger connection between the customer experience and daily delivery operations.

George Ninikas
SVP Sales & Accounts, ORTEC

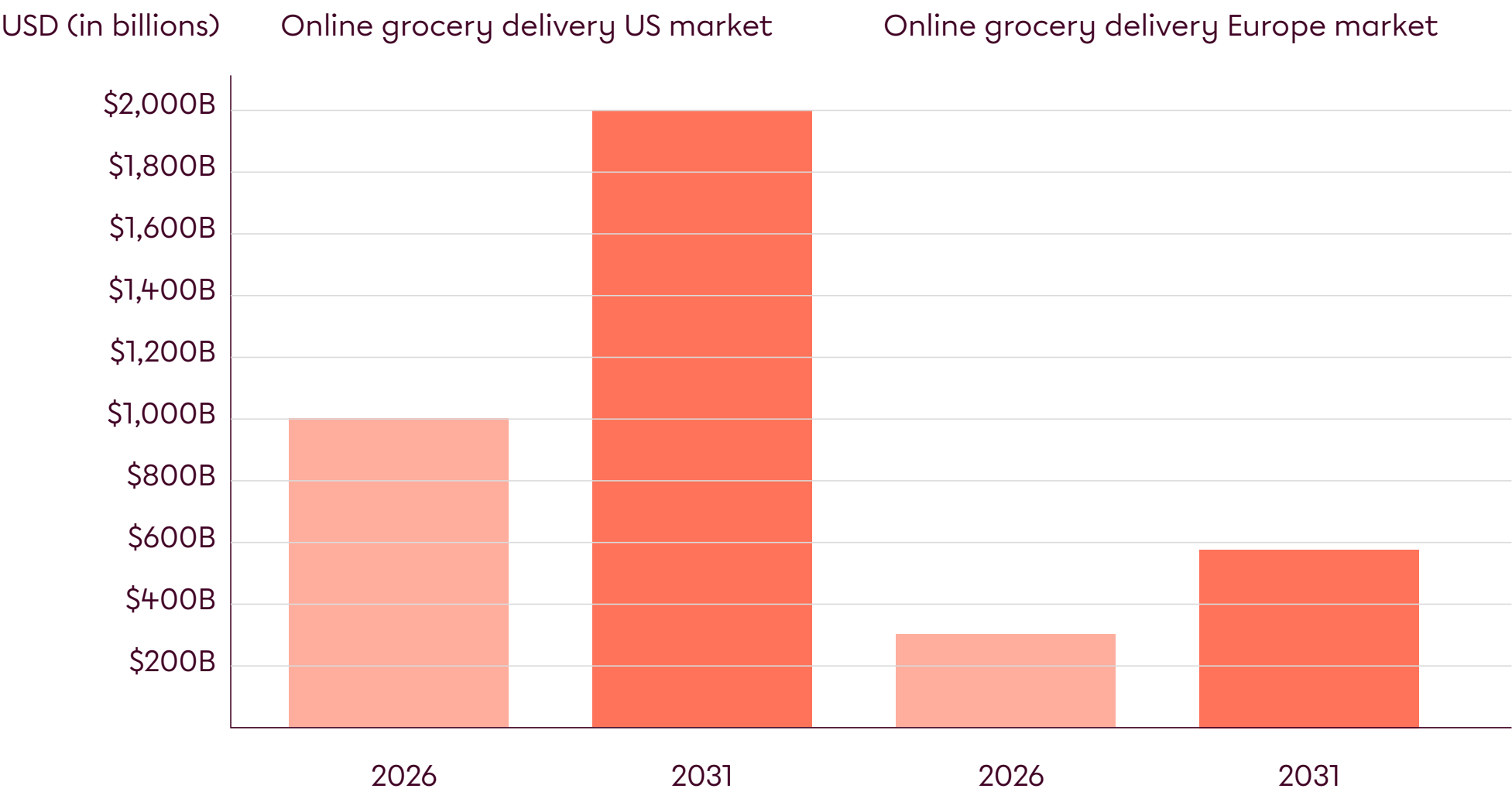


Global demand for grocery delivery continues to grow

The rise of e-commerce has changed how people shop for food. Home delivery is now a routine part of the grocery experience, and expectations continue to rise around freshness, accuracy, availability, and delivery precision.

According to recent market forecasts, global online grocery delivery surpassed USD 1 trillion in annual revenue in 2026 and is projected to exceed USD 2 trillion by 2031, reflecting sustained double-digit growth across major regions. In Europe, the online grocery delivery market is estimated at approximately EUR 295 billion in 2026 and is expected to more than double by the early 2030s, driven by omnichannel fulfillment models and rising consumer adoption. At the same time, average revenue per user in grocery delivery has increased to around USD 550 per year, as shoppers place larger and more frequent digital orders.

Growth creates opportunity, but it also raises the operating bar. Retailers need to offer customers more choice without opening delivery windows that are too costly, too difficult to execute, or too fragile when demand changes throughout the day.



The customer promise depends on operational control. E-grocery delivery is not only about offering a convenient window at checkout. The window must be feasible for the route, source location, available labor, fleet, and service level promised to that customer.

A common customer question before checkout is simple: When will my order arrive? The answer matters because convenience is one of the main reasons customers order groceries online. They want a delivery option that fits their schedule, not a broad window that forces them to wait, reschedule, or worry about missed deliveries.

Why delivery windows are becoming a strategic decision

Time slot booking, also called time slotting, gives customers the ability to choose a specific delivery or pickup window. For the retailer, however, each slot is an operational decision. Every available option affects routing, capacity, labor, sourcing, cost, service quality, and customer satisfaction.

Static time slots often rely on a fixed number of available orders per slot. This approach is simple, but it can leave capacity unused, push customers into inefficient windows, or make the operation more expensive than necessary. Dynamic time slot booking uses optimization to assess what is feasible and cost-efficient as new orders arrive.



E-Grocery pressure	What dynamic time slot booking helps retailers do
Tight delivery windows	Offer windows that are feasible based on existing routes, capacity, and service commitments.
Rising transportation costs	Guide demand toward delivery options that improve route density and reduce avoidable miles.
Volatile order demand	Update slot availability as orders, labor, fleet capacity, and operational conditions change.
Different customer groups and service levels	Manage delivery propositions for B2C, B2B, loyalty, and priority customer groups with different service level agreements.
Operational disruptions	Support real-time decisions when delays, new orders, road restrictions, or capacity issues affect the plan.

How time slot booking works

A time slot booking system evaluates which delivery or pickup windows can be offered to a customer at checkout. A dynamic approach goes further: it continuously checks each new booking request against the current plan, the forecasted workload, delivery capacity, sourcing options, and routing constraints.

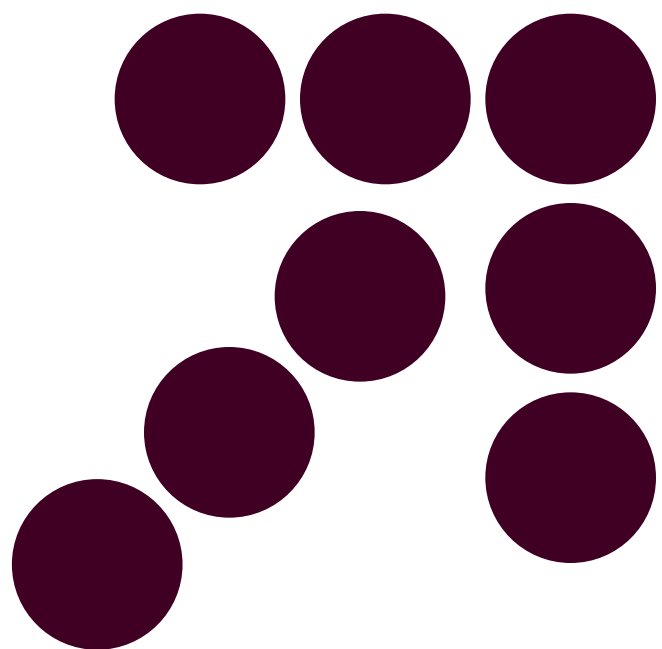
When a customer requests delivery options, the optimizer reviews feasible insertion points in existing and forecasted routes. It calculates the effect of each slot on cost, capacity, service windows, and route quality. The customer sees options that are available and realistic, while the retailer protects the operational plan behind the scenes.



1. The customer enters an address, basket, preferred delivery method, and order details.
2. The software checks available fulfillment sources, delivery areas, fleet and gig resources, driver schedules, and capacity constraints.
3. The optimizer evaluates feasible time slots and the operational cost of each option.
4. The retailer can display the most efficient slots, apply incentives, hold capacity for priority groups, or limit options that would create avoidable cost or risk.
5. Once the customer books, the promise flows into routing, dispatching, monitoring, customer communication, and proof of delivery or collection.

This approach connects the customer-facing checkout experience with the planning decisions that determine whether the promise can be delivered efficiently.

Benefits for customers and retailers



For customer s:

more control and greater confidence

Time slot booking gives customers clearer control over when their groceries arrive or when an order is available for pickup. That control reduces waiting, helps customers plan their day, and improves confidence that fresh or temperature-sensitive items will arrive at the right time.

The experience becomes stronger when the delivery promise is connected to execution. ETA tracking, proactive delay notifications, and on-time arrival within the committed window help customers understand what is happening after checkout, not just what they selected during checkout.

For retailers:

better use of capacity, labor, and routes

For retailers, time slot booking helps turn customer demand into a more manageable operational plan. By shaping demand toward feasible windows, retailers can raise fleet and labor utilization, improve deliveries per hour, reduce avoidable miles, and protect the customer experience during peak periods.

Dynamic slot capacity optimization also gives retailers a more precise way to allocate delivery and pickup promises across customer groups, store locations, fleet resources, gig delivery partners, and fulfillment capacity. That matters as more retailers shift toward store-based fulfillment and need to manage picking capacity at the store level while still offering attractive time slots online.

Why this matters

The best delivery window is one the customer values and the operation can execute. Dynamic time slot booking helps retailers balance both sides of that decision in real time.

How dynamic time slot capacity optimization supports growth

Dynamic time slot capacity optimization helps retailers decide which slots to offer, which to encourage, which to reserve, and which to close. Instead of treating every window as equally valuable, the retailer can shape demand toward options that improve service reliability, delivery density, and cost performance.

Steer demand without limiting customer choice

Retailers can use customer nudging to guide shoppers toward more efficient slots through pricing, incentives, green labels, or slot placement. For example, a retailer may highlight a delivery window that fits better with existing route density or produces fewer logistics miles. Customers still choose, but the choices are designed to support both convenience and operational efficiency.

Manage different customer segments and service levels

Area and time slots management allows retailers to create different delivery propositions for B2C, B2B, loyalty, and priority customer groups.

This can help protect access to delivery capacity for high-priority customers, even when certain windows are no longer available to standard customer groups.

Keep plans reliable as conditions change

E-grocery operations change quickly. New orders arrive, traffic patterns shift, road restrictions affect routes, stores face picking constraints, and customer demand moves between delivery and pickup. Continuous re-optimization helps teams respond to those changes without rebuilding plans manually from scratch.

Use learning to improve future plans

Machine learning can improve time slot and routing decisions by learning from historical and operational data, such as stop times, driving times, service durations, capacity assumptions, and on-time delivery performance. Over time, this helps plans become more robust under changing operating conditions.

Support more sustainable delivery choices

Dynamic time slot booking can also support sustainability goals. Green labels can steer customers toward windows that reduce miles, fuel consumption, or emissions. For retailers using electric vehicles, route-level energy predictions can inform vehicle assignment and help identify battery-related exceptions before they disrupt execution.

What to look for in a time slot booking approach

A practical time slot booking approach should do more than publish available windows. It should help the retailer make better decisions before, during, and after each customer promise.

Capability	Why it matters	Business outcome
Dynamic slot capacity optimization	Evaluates feasible delivery and pickup windows as demand changes.	More available slots with better cost control.
Area and time slots management	Aligns delivery propositions to regions, channels, and customer segments.	Better service differentiation and protected capacity for priority customers.
Routing and allocation optimization	Connects slot options to fleet, gig resources, sourcing, and routes.	Higher utilization and stronger delivery reliability.
Store picking capacity management	Accounts for store-level fulfillment limits when offering pickup or delivery windows.	Fewer promises that strain store operations.
Traffic and road network intelligence	Reflects real operating conditions, including traffic patterns, restrictions, and closures.	More practical routes and fewer execution surprises.
Customer communication and proof of delivery	Keeps customers informed and closes the loop after execution.	Higher confidence, better transparency, and fewer failed deliveries.
Learning from operational history	Improves planning assumptions using past performance data.	More resilient plans over time.

Conclusion

Time slot booking is a practical way to improve the e-grocery customer experience, but its value depends on the decisions behind each available window. When slot availability is connected to capacity, routing, sourcing, labor, and execution, retailers can offer customers more useful choices while keeping delivery plans cost-efficient and reliable.

ORTEC helps retailers use optimization, forecasting, and decision support to align delivery promises with real operational constraints. The result is a stronger balance between customer convenience and operational performance: more reliable time slots, better use of resources, lower delivery costs, and more confidence in daily execution.





Customer Case

Peapod Digital Labs and Ahold Delhaize USA

Peapod Digital Labs wanted to optimize delivery results in a single environment and upgrade routing for a high-volume e-grocery operation. With more than 85,000 delivery stops per day, the company needed a more effective way to manage routing performance, customer service, and execution at scale.

The collaboration with ORTEC helped Peapod Digital Labs improve delivery efficiency and service performance. Reported outcomes included exceeding anticipated savings, increasing orders per hour, decreasing miles per order and carbon emissions, improving customer service through faster execution and on-time deliveries, boosting driver satisfaction with better routes, and reaching a 75% same-day delivery rate.



Customer Case

Albert Heijn Online

Albert Heijn eCommerce manages a complex logistics network with fulfillment centers, cross-dock hubs, and more than 1,500 vehicles serving online grocery customers across much of the Netherlands. The operation requires efficient route calculations within the limited time between order cut-off and the start of deliveries.

Albert Heijn relies on ORTEC cloud-based routing to calculate optimal routing plans for upcoming weeks based on real-time order entry. The routing engine’s results are also used to compute personalized time slots for customers as they visit the website, helping steer customers toward efficient and sustainable delivery options.



About George Ninikas

As SVP, Sales and Accounts at ORTEC, George Ninikas has a passion for solving Retail and Wholesale supply chain challenges, and plays a pivotal role in shaping the company’s strategy and market presence in the sector.

By harnessing cutting-edge technology with AI-powered possibilities and

advanced analytics, he aims to improve the efficiency, profitability, and customer experience of ORTEC’s clients.

His primary objective is to translate technical solutions into a language that customers in the market can understand, promoting the company’s expertise and expanding its reach. Alongside his career, George has pursued his academic interests by completing a Ph.D. in Operations Research and teaching for several years at the University of Aegean.



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