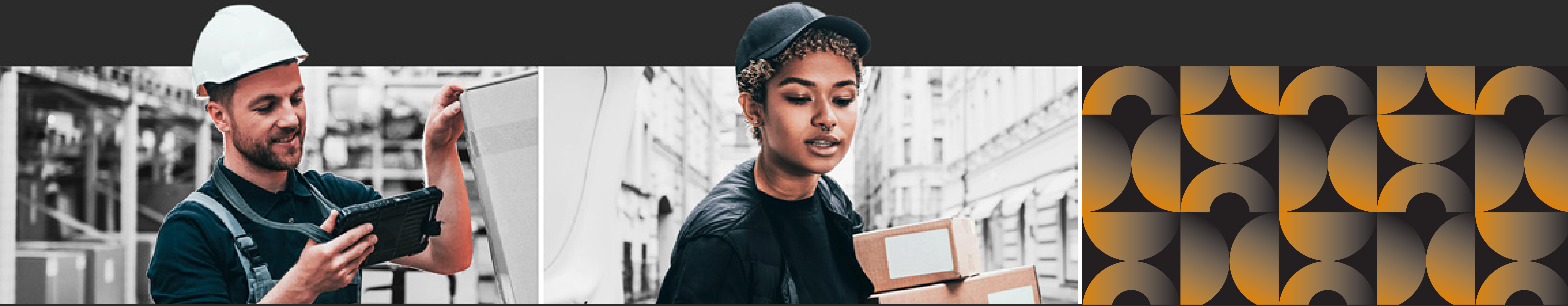


Fail-proof peak season: Practical delivery management insights to navigate complexity and risk

A report designed for professionals leading e-commerce, logistics, and supply chain operations.

nShift

Executive summary

The peak season imperative: From coping to performance

Across Europe, the UK, and the Nordics, Q4 peaks. Black Friday, Cyber Weekend, and Christmas place exceptional demands on retail operations. As ecommerce volumes rise and customers expect reliable, flexible, and fast delivery, strong logistics execution can be a meaningful differentiator.

This report provides practical guidance to help retailers prepare for high-pressure periods and manage delivery, returns, and cross-border operations more effectively. It is intended to support teams in moving from reactive problem-solving to disciplined peak-season planning and performance.

Key takeaways

These are the levers that will move your Q4 outcomes:

1. Win the checkout process

by addressing the top reasons shoppers abandon their carts: unexpected extra costs (which cause 39% of abandonments) and slow delivery times (21%). Achieve this by showing customers accurate estimated delivery dates (EDDs) and the full total cost, including all taxes and fees, early in their purchase journey.

2. Shift volume to OOH

Default to out-of-home (OOH) options (lockers/PUDO) in adoption markets; Europe's networks are six-figure in scale, and the Nordics show high usage (Finland: lockers are #1 at ~50%), making OOH the pre-selected option where preferred.

3. Engineer resilience

Orchestrate multiple carriers, monitor estimated delivery date (EDD) accuracy and first-attempt delivery success in real time, and run weekly fallback tests along with quarterly chaos drills. Leverage expanding delivery infrastructure, including nationwide locker networks and diverse carrier partnerships, to maintain reliability and capacity during peak periods.

4. Keep cross-border moving

Capture Harmonized System (HS) codes and clear item descriptions at checkout, auto-file Import Control System 2 (ICS2) pre-arrival Entry Summary Declarations (ENS) and use the Import One-Stop Shop (IOSS) and One-Stop Shop (OSS) for consignments ≤ €150. The Commission reports over €33 billion declared via OSS in 2024.

5. Design for PPWR now

The Packaging and Packaging Waste Regulation (PPWR) regulation (EU) 2025/40 is in force; from 1 Jan 2030 (or three years after the Commission's methodology, whichever is later) the empty-space ratio ≤ 50% for grouped, transport and e-commerce packaging, with exemptions (e.g., reusable packaging and sales packaging used as e-commerce packaging).

6. Leverage AI where it compounds

Use machine learning (ML) to forecast demand spikes, predict exceptions, and automatically route shipments through dynamic carrier and service selection. Combine this with AI-driven observability tools to enable teams to identify and resolve issues before they escalate.

Chapter 1

The state of e-commerce

The new market reality: Dynamics in Europe, the UK, and the Nordics

Cross-border is now a major share of European online sales, 36% in 2024 (≈€275.6 bn), so international demand is core to Q4, not fringe. In 2025, 59% of global online shoppers buy from abroad, and 35% do so monthly, raising the bar for trust, delivery, and returns. At that scale, pre-arrival customs data (ICS2) and pre-paid VAT via IOSS/OSS become practical necessities to avoid peak-season holds, surcharges, and poor CX; note that IOSS applies to consignments ≤ €150, while ICS2 requires Entry Summary Declarations before arrival.[1 2 3]

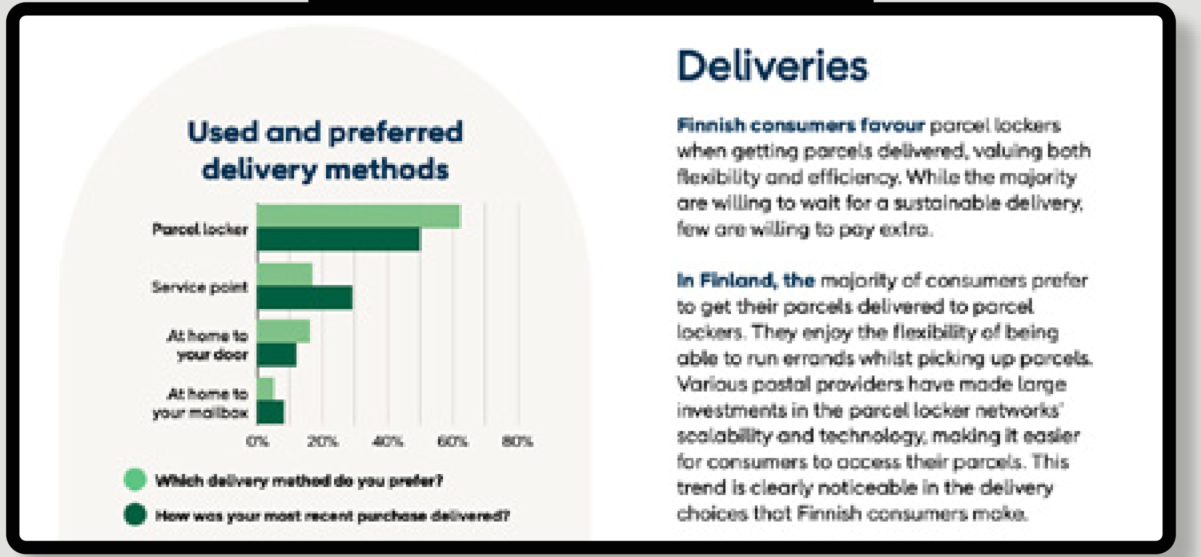
Q4, including Black Friday and the Christmas period, drives a disproportionate share of annual volume as shoppers anticipate promotions and gifting. Nordic markets lead in OOH (lockers/PUDO) adoption and continue to innovate on convenient delivery; the UK and wider European hubs are expanding OOH infrastructure as well.[4]

The pandemic-era surge has stabilised, but Europe's digital baseline remains high: around 77% of EU internet users purchased online in 2024, with near-saturation in markets like Ireland and the Netherlands and faster growth in parts of Southern and Eastern Europe.[5]

Finland now reports parcel lockers as the most common delivery method, illustrating the region's OOH leadership.[6]

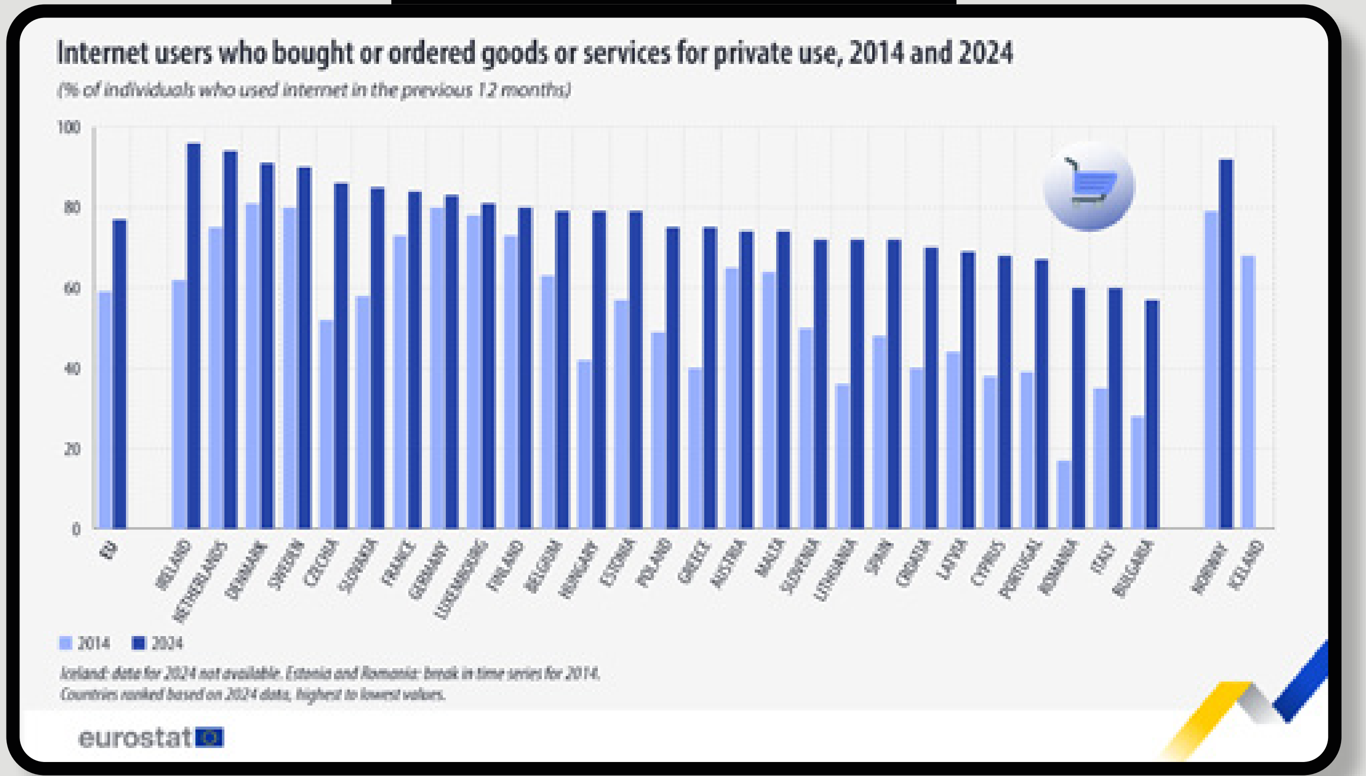
In Finland, the majority of consumers prefer to get their parcels delivered to parcel lockers.

Source: Postnord, E-Commerce 2024, autumn



Various postal providers have made large investments in the parcel locker networks' scalability and technology, making it easier for consumers to access their parcels.

Source: Eurostat



Online shopping in the EU continues to grow

Internet users who bought online, 2014 vs 2024

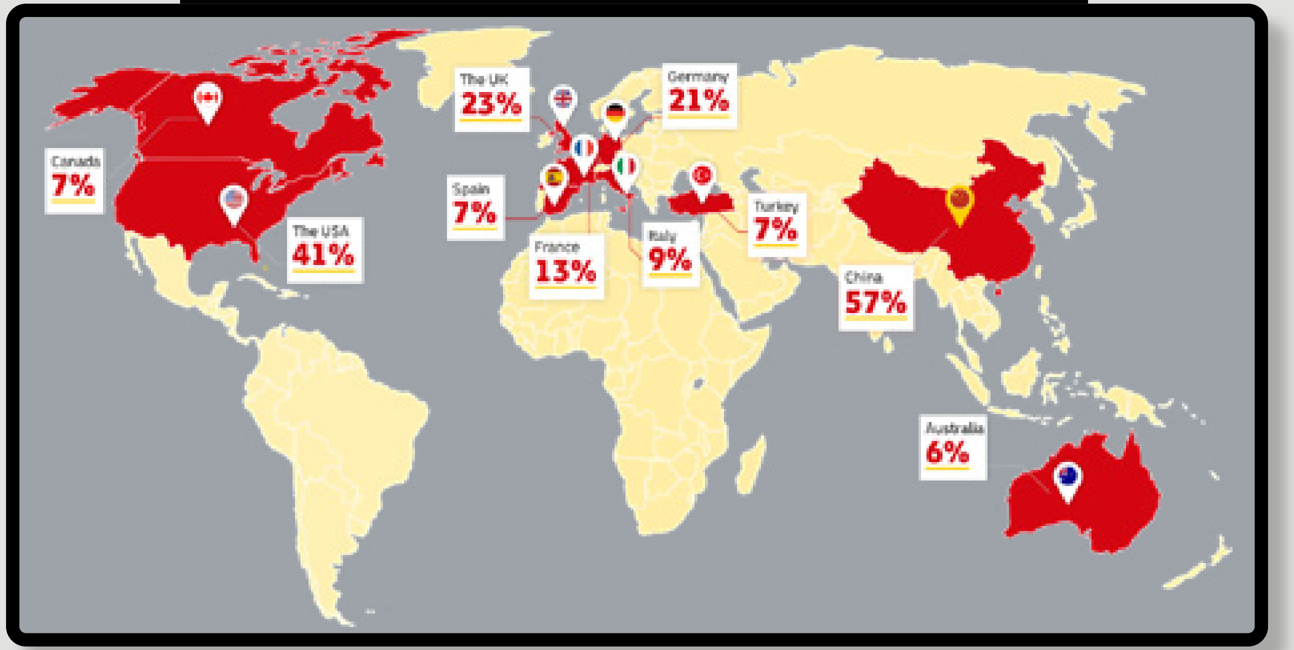
Shifting consumer behavior:

The demand for flawless fulfillment

Consumers show increasingly sophisticated expectations in peak periods; trusting retailers that offer transparent, reliable delivery promises; flexible, convenient delivery and returns options, and clear pricing without surprises. Mobile shopping and digital wallets continue to gain ground, reflecting a mobile-first and frictionless mindset. The rise of livestream commerce adds a new dimension of engagement and immediacy, influencing buying decisions, especially among younger demographics.

Same-day delivery has evolved into an expectation for online shoppers. Customers demand rapid fulfillment and continuous, real-time visibility into the exact location of their packages.

Source: DHL https://www.dhl.com/global-en/microsites/ec/ecommerce-insights/insights/e-commerce-logistics/2025-cross-border-trends.html



Cross-border now accounts for over a third of Europe's online sales, 36% in 2024 (≈ €275.6 bn), so international demand is core to Q4, not fringe. In 2025, shopper behavior reinforces the trend: 59% of global online shoppers buy from abroad, and 35% do so monthly. At that scale, pre-arrival customs data (ICS2) and pre-paid VAT via IOSS/OSS are practical necessities to avoid peak-season holds, surcharges, and poor CX.[7,8,9,10]

The winning markets for cross-border sales

7 in 10 shoppers buy only from countries they trust. The USA, UK, Germany, China, France, Italy, Canada, and Australia are top trusted destinations driving cross-border purchases. Younger generations, especially Gen Z, are buying less from China (53%) compared to Baby Boomers (64%), favoring retailers in Australia, Canada, and the USA instead.

The core challenges:

Identifying the five points of peak failure

Despite infrastructure improvements, peak periods reveal persistent pain points for retailers. Each challenge, if not addressed proactively, can become a major operational failure.

1. Delivery promise accuracy

Vague or unmet delivery expectations are a leading cause of high cart abandonment during Q4 surges. Shoppers are less tolerant of uncertainty and expect real-time, precise information.

2. Last-mile failure

Failed first delivery attempts waste resources and erode customer trust. Out-of-home (OOH) pickup adoption directly mitigates this, but requires expanded locker and shop networks.[11]

3. Returns volumes

Returns spike dramatically, especially in apparel, where online return rates can be up to three times higher than in-store. Efficient handling is vital to retain margin and customer loyalty.[12]

4. Cost pressure & packaging compliance

The last mile is where costs pile up: on average, it absorbs about **41%** of total supply-chain spend. Pressure has intensified, too: through 2024, **84%** of EU/UK e-commerce businesses saw last-mile costs rise, and **39%** reported increases of **>10%**. New rules raise the bar as well:

Regulation (EU) **2025/40 (PPWR)** introduces a **50% empty-space cap** for grouped/transport/e-commerce packaging from **2030**. In practice, packaging right-sizing and smarter carrier/rate selection aren't optional—they're immediate levers to keep Q4 orders profitable.[13 14 15]

5. Cross-border complexity

Customs and VAT compliance issues frequently cause shipment delays and customer dissatisfaction, particularly for trade between the UK and the EU.

Souce: ds-smith ecomm last-mile report 025

KEY FINDINGS

Last-mile delivery costs for e-commerce businesses are increasing and are on course to seriously impact profitability. However, those with an ambitious and innovative approach will help companies protect their bottom lines. We asked 550 decision-makers from e-commerce businesses for their perspective.

1 E-commerce businesses are experiencing last-mile cost rises:

84% report a rise in costs over the past 12 months

84% believe costs will continue to rise in the year ahead

2 Heightened expectations are a challenge in keeping and satisfying consumers:

66% expect faster delivery

64% expect more support for returns

62% want to minimise packaging for disposal or recycling

3 E-commerce retailers struggle to fully meet expectations, with only:

33% able to fully meet expectations around speed of delivery

36% around low-cost delivery

39% around sustainable delivery

28% around sustainable packaging

4 However, many are reviewing their operations:

59% of e-commerce retailers are reviewing returns policies

57% are imposing minimum order values for delivery

5 Innovative e-commerce companies are further ahead in improving last-mile delivery partnerships, operations and packaging:

65% conduct regular supplier and sourcing reviews for cost savings

53% do so around sustainability practices

61% use AI and automation in picking and packaging to help drive efficiencies

49% seek external consultancy help to identify packaging improvements and efficiencies

53% have increased or decreased the number of packaging types and sizes

44% offer consumers the option to ship without outer packaging

Chapter 2

The foundational playbook for peak performance

To excel during Q4, retailers must turn these operational challenges into scalable advantages. This chapter presents five core strategies that are the non-negotiable pillars of a robust and resilient logistics network.

Mastering the delivery promise: Predictability wins trust

Shoppers prioritise predictability over raw speed. In Europe, 70% of regular e-shoppers say predictability matters most. McKinsey finds consumers rank on-time delivery above speed.[16] [17] The winning pattern is a small set of clearly labeled delivery choices (e.g., two to four), each shown with an order-by cut-off and a reliable estimated delivery date (EDD) that accounts for processing time, weekends/holidays, and carrier hand-off. Making the promise concrete boosts conversion, and when you include out-of-home options, shifts volume to lockers/PUDO, which can reduce failed first-time deliveries at peak.

The winning pattern: Clear, precise delivery choices drive conversion.

Showing shoppers a small, well-defined set of delivery options with accurate order cutoff times and reliable estimated delivery dates reduces abandonment and builds trust. This approach accounts for real-world factors like processing delays and carrier transitions, making promises concrete and achievable.

Refund at first scan reduces friction

Amazon minimises return anxiety by refunding many items at the first carrier scan (Refund at First Scan), offering label-free, box-free drop-offs, and using returnless resolutions for low-value items. The takeaway for Q4: compress time-to-credit and reduce effort at drop-off; then route inbound items to resale or liquidation quickly.

Source: Refund at First Scan and Returnless Refunds, Amazon Seller Central

Intense cost management. The last-mile battleground

Since the last mile accounts for ~41% of overall supply-chain costs, it's the pivotal battleground for margin preservation.[18] This calls for automated multi-carrier rate shopping (by lane, destination, service level, and weight) to continuously select the lowest-cost viable option.[19]

Retailers must also comply with the EU's PPWR empty-space cap (50%), now in force, applying from 2030, cutting both cost and waste.[20]

Finally, nudge out-of-home (OOH) delivery where adoption is high (notably the Nordics and parts of Central Europe): clearer choices and defaults toward lockers/PUDOs reduce costly repeat attempts and lift CX.

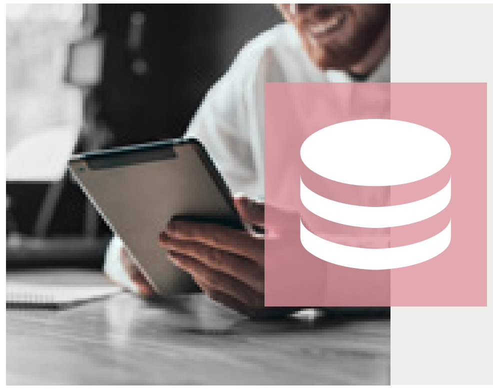
Redesigning returns for revenue protection

Returns surge in Q4, and online apparel return rates can be ~3× in-store. Treat sizing/fit, policy, and reverse-logistics speed as margin levers, not cost centers. Inefficient returns management drains cash and consumes valuable warehouse space. To protect revenue, prioritize exchanges and instant store credit where possible. Consumers are receptive when the process is fast and easy.[21]

Flattening cross-border complexity through pre-emptive compliance

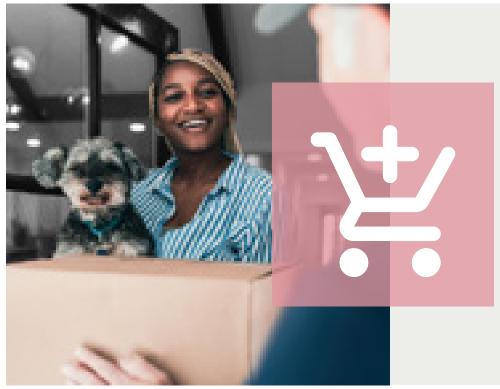
Cross-border e-commerce is now a major slice of Europe's online sales: in 2024 it reached €275.6 bn, or 36% of the online market (ex-travel).[22] Delays still stem from customs data errors and VAT handling. The remedy is to front-load compliance: use the Import One-Stop Shop (IOSS) for consignments ≤€150, automate ICS2 pre-arrival Entry Summary Declarations (ENS), and clear faster so VAT is collected at checkout (no surprise charges on delivery),[23] and capture HS codes and clear item descriptions at checkout so you can automate ICS2 pre-arrival (ENS) filings and clear faster.[24]

Why this is critical:
The strategic solutions



Embed customs data at checkout. Capture HS codes, clear item descriptions, origin, and value so you can auto-file ICS2 Entry Summary Declarations (ENS).

Why: ICS2 rejects filings for insufficient data quality, which creates delays; complete ENS = faster release.[25]



Use IOSS for consignments ≤ €150. Charge VAT at checkout via Import One-Stop Shop (IOSS).

Why: When IOSS is used, no import VAT is collected at the border, customers avoid doorstep charges, cutting refusals and contact rate.[26] [27] [28]

Localize last-mile options (OOH + country norms). Offer the right mix of parcel lockers/PUDO and message it clearly per market.

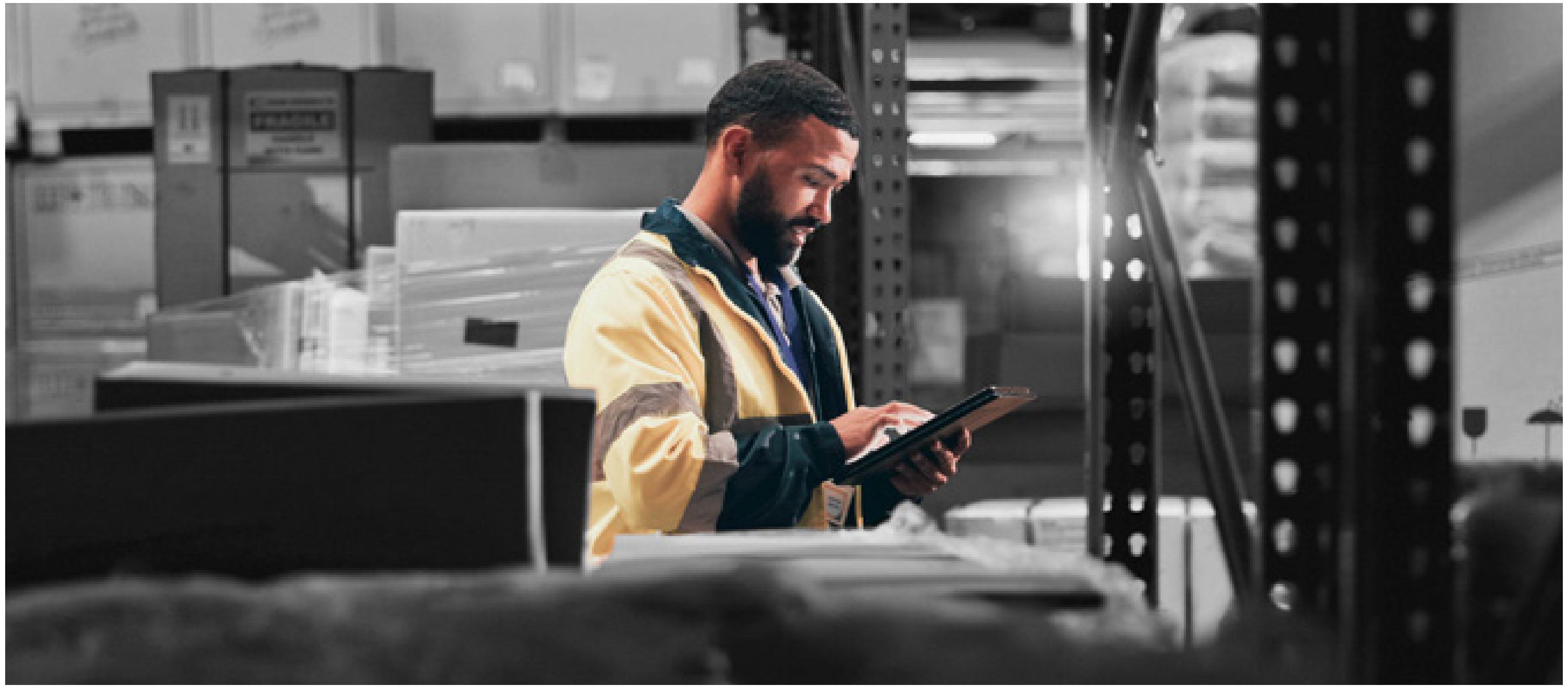
Why: 35% of Europeans already take delivery to OOH, and 79% return via lockers/shops, so OOH is mainstream and reduces failed first attempts.[29]

Building an antifragile logistics network

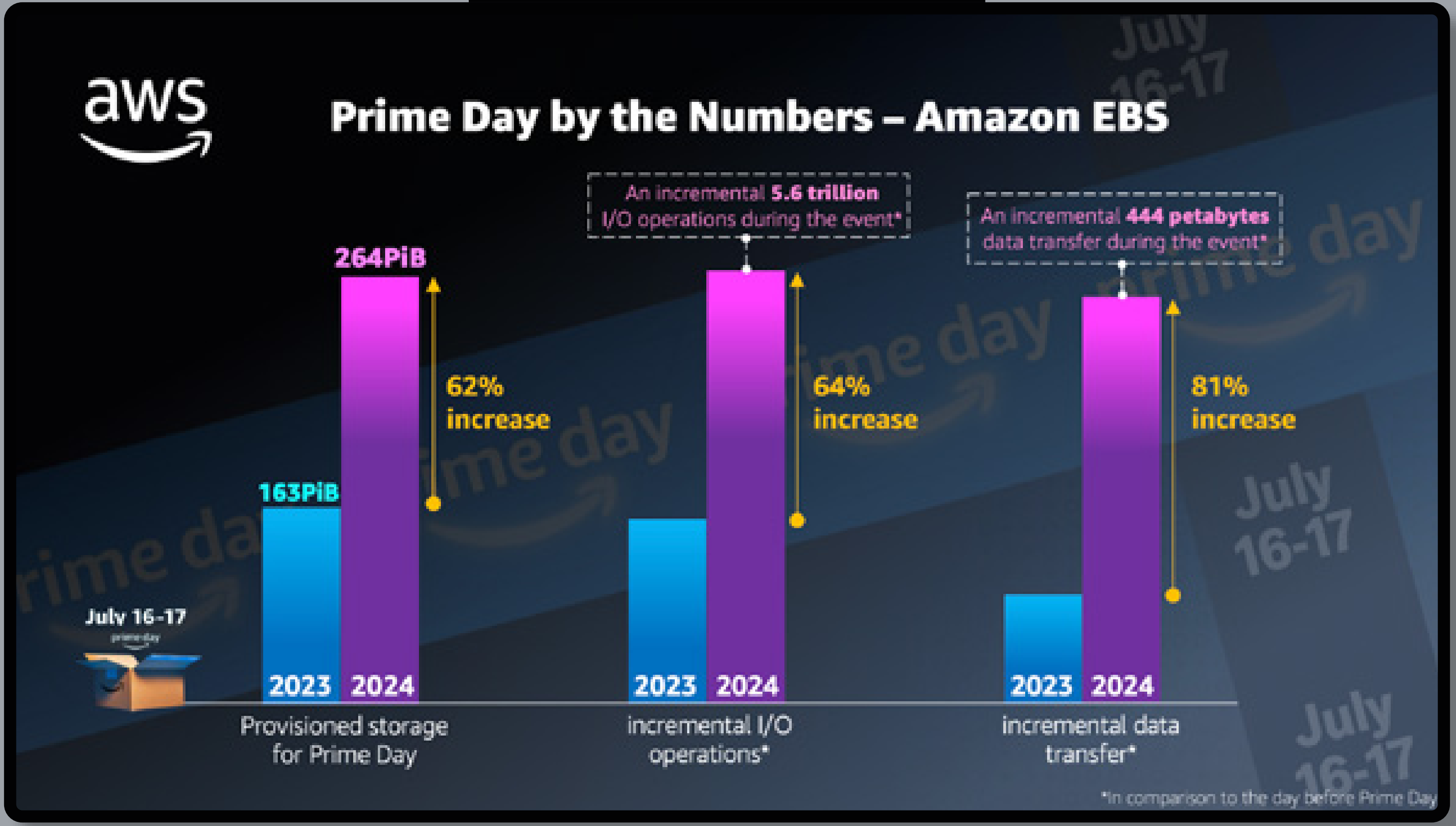
Engineering for chaos: build systems that get stronger under stress. Q4 isn't just heavy traffic; it's an unpredictable chaos event that exposes systemic risks.

Leaders practice failure ahead of time: Amazon ran 733 AWS Fault Injection Service experiments before Prime Day 2024 to validate resilience.[30] Pair this with "runbooks/playbooks" for known failure modes and SLO-driven telemetry dashboards (API health, queue backlogs, parcel-flow exceptions) so teams act before small issues cascade.[31 32]

Finally, a multi-carrier orchestration layer is non-negotiable: shippers increase carrier diversification at peak to mitigate risk and secure capacity, and OOH options (lockers/PUDO) further reduce failed first attempts when disruptions hit home delivery.[33] and secure capacity, and OOH options (lockers/PUDO) further reduce failed first attempts when disruptions hit home delivery.[33]



Source: AWS



Peak readiness at hyperscale

Before Prime Day 2024, Amazon booked extra capacity in advance and switched it on ahead of the rush, so nothing slowed when traffic spiked. In one day they added hundreds of petabytes of storage and handled trillions of extra read/write actions compared with the day before the event.

Takeaway for Q4

Estimate your peak, reserve capacity early, and pre-warm critical systems (databases, queues, payment gateways) so you scale on purpose, not in a panic.

Chapter 3

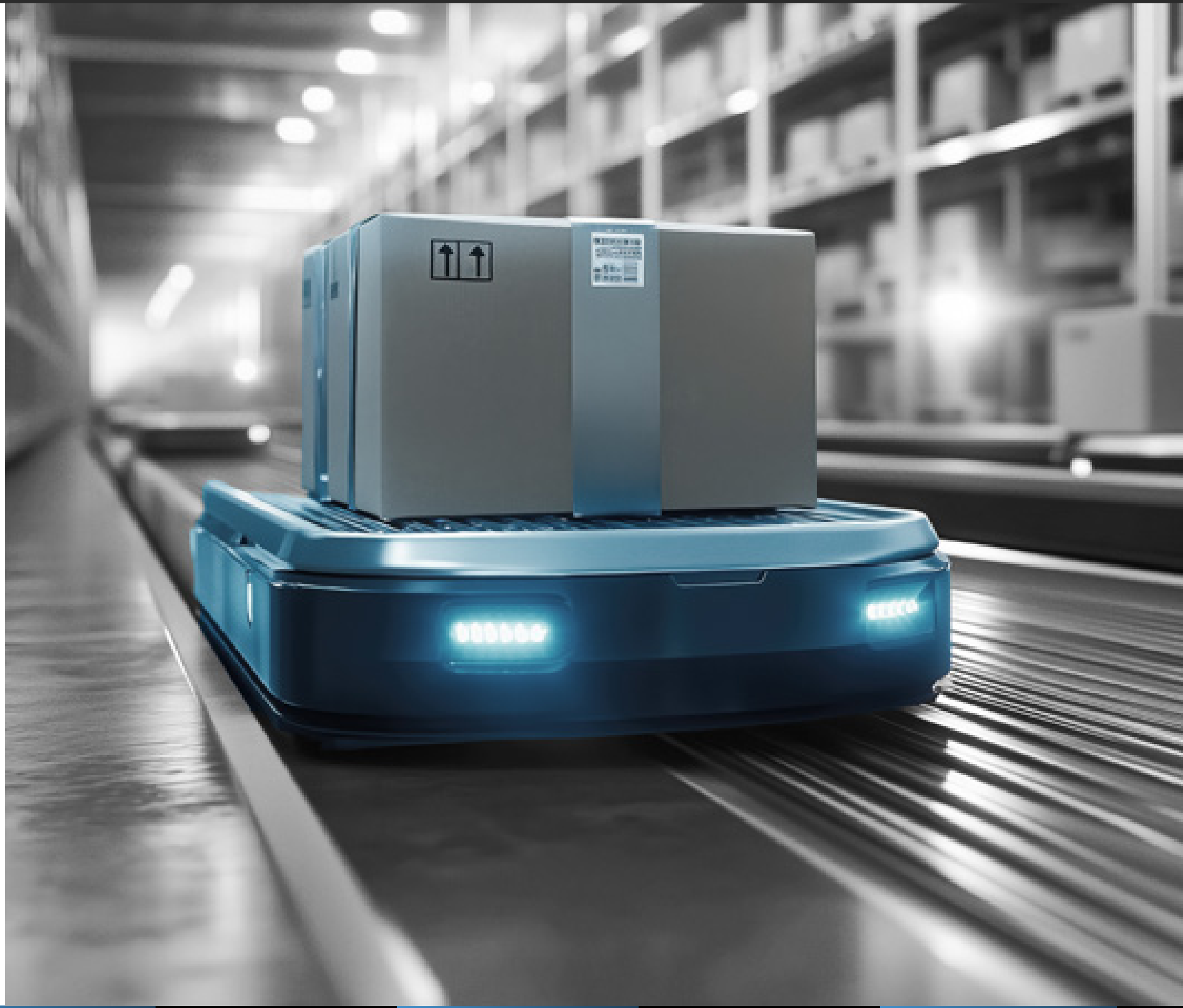
The AI-powered playbook:

Transforming resilience into an advantage

The logistics industry is being fundamentally reshaped by AI at an unprecedented speed. The next era will be defined by those who are prepared to anticipate what's coming, creating a truly antifragile logistics network.

Mastering peak readiness requires building a resilient operational infrastructure that can manage high-volume pressure without failure.

Predictive risk mitigation
Instead of just reacting to failures, AI provides a predictive edge. It analyzes historical data and real-time carrier performance to forecast demand spikes, potential bottlenecks, and emerging risks. This intelligence allows a system to proactively reroute parcels away from stressed lanes or carriers, avoiding delays before they even become a problem.[34]



Autonomous decision-making

Beyond basic dynamic rate shopping, AI-powered systems can now automate complex decisions without human intervention. The technology can automatically re-route parcels, optimize inventory placement, and even alter a delivery promise in real-time based on a live assessment of the entire network. Accenture research highlights that AI is creating an array of possibilities for reinventing work across the entire value chain.[35] The human role shifts from manual intervention to strategic oversight.

Total supply chain observability

AI enables a "single source of truth" for your logistics network. It synthesizes data from carrier APIs, warehouse management systems, and even social media feeds to provide a complete, real-time picture of network health. This comprehensive observability is key to anticipating and resolving issues with speed and precision, not possible with traditional tools.

Chapter 4

The customer-facing playbook:

Designing checkout for conversion

The checkout experience is the pivotal moment during peak season where a shopper's intent either converts to a sale or slips away. This chapter provides an actionable guide for translating your logistical strengths into a frictionless customer experience.

The power of precise delivery dates

Shoppers are no longer satisfied with vague promises. Instead of "2-3 business days," display a clear, context-aware estimated delivery date (EDD). Your promise logic must dynamically factor in warehouse location, carrier schedules, holidays, and even real-time weather events. Displaying a countdown timer to the next order cutoff creates a sense of urgency and helps the shopper make a confident decision.

Offering a choice of delivery options (including OOH)

Customers now expect both control and intelligence. DHL's 2025 global survey (24,000 shoppers) finds 7 in 10 want AI-supported shopping features (e.g., virtual try-ons, shopping assistants, voice search; 37% already buy by voice, 48% among social shoppers). At the same time, choice still decides conversion: 81% abandon if their preferred delivery option isn't offered and 79% abandon if returns options miss expectations, while OOH is mainstream (Europe: 35% prefer OOH delivery; 79% return via lockers/shops). Offer both home and OOH, and use AI to make ETAs, alerts, and resolution smarter.[36 37]

Mastering cost transparency before the last step

Shipping and hidden fees are the greatest checkout deterrents in Europe. Baymard research confirms that "extra costs too high" is the top reason for cart abandonment. The goal is to eliminate surprises. Communicate the total landed cost as early as possible, ideally on the product and cart pages. During checkout, show a detailed breakdown of all costs, including delivery, taxes, and customs.[38]

Integrating cross-border compliance into checkout

Cross-border compliance is not a burden; it is a powerful tool for building customer trust and securing a competitive edge. By moving compliance into the checkout process, you transform a potential obstacle into a seamless, reassuring experience. By applying IOSS logic for parcels under €150, you collect VAT at the point of sale, which eliminates the risk of a surprise customs charge for the customer upon delivery (IOSS). This ensures packages are cleared quickly by customs, avoiding costly and time-consuming hold-ups at the border.[39]

Source: DHL Freight Connections. What's Hot in Online Shopping in 2025? Find Out in the DHL E-Commerce Trends Report! (2025-06-18)

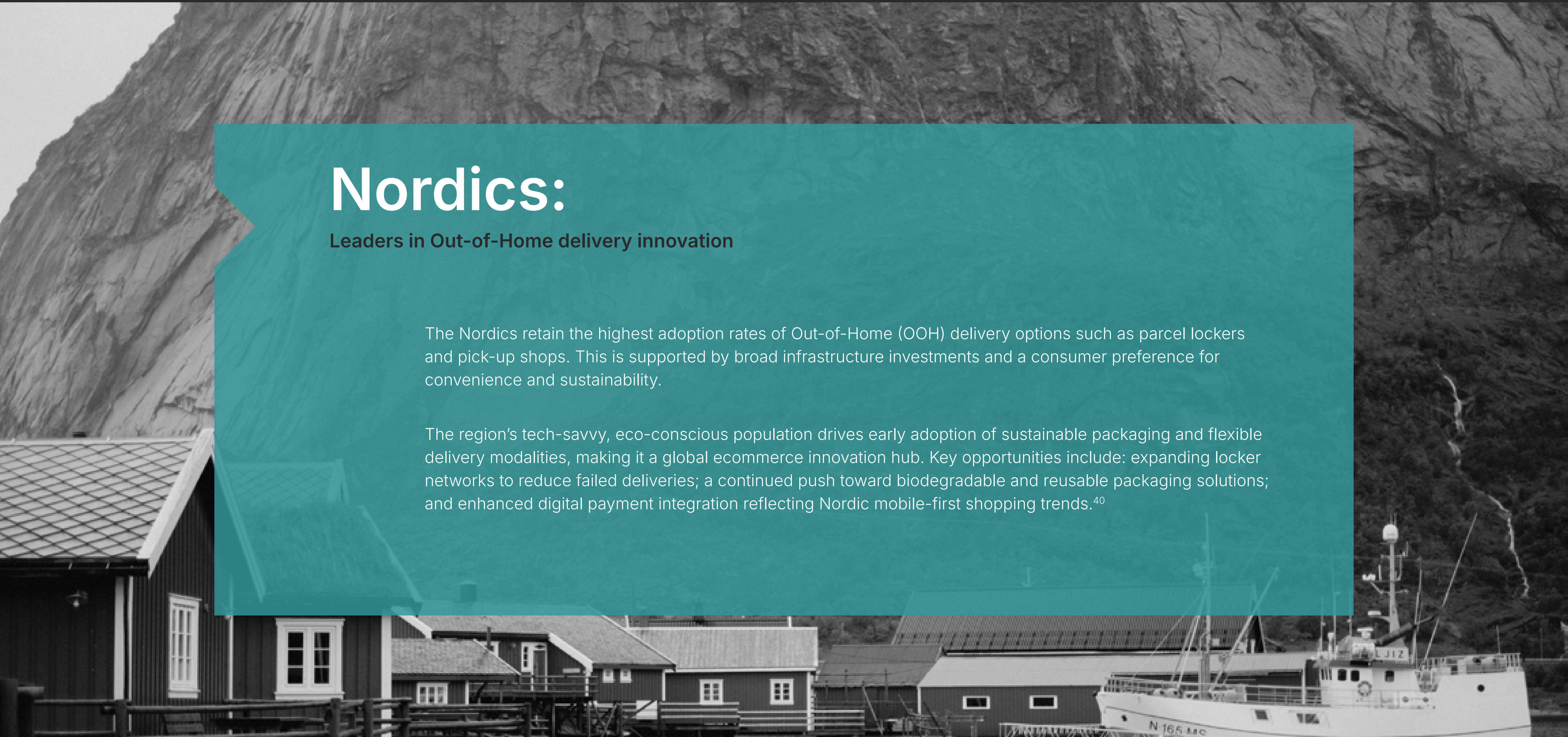
What improvements shoppers want

Shoppers still convert on the basics free/fast delivery and easy returns, while also expecting choice (home + OOH) and smarter experiences.

Chapter 5

Regional nuances

Ecommerce in Europe is not a monolith; it is a rich tapestry of diverse markets. Understanding these regional nuances enables retailers to tailor peak season strategies that maximize impact and resonance.



Nordics:

Leaders in Out-of-Home delivery innovation

The Nordics retain the highest adoption rates of Out-of-Home (OOH) delivery options such as parcel lockers and pick-up shops. This is supported by broad infrastructure investments and a consumer preference for convenience and sustainability.

The region's tech-savvy, eco-conscious population drives early adoption of sustainable packaging and flexible delivery modalities, making it a global ecommerce innovation hub. Key opportunities include: expanding locker networks to reduce failed deliveries; a continued push toward biodegradable and reusable packaging solutions; and enhanced digital payment integration reflecting Nordic mobile-first shopping trends.[40]

United Kingdom:

Post-Brexit customs complexities and marketplace dynamics

With 67.8 million internet users and 97.8% penetration, the UK is one of Europe's most digitised retail markets.[41] Since Brexit, cross-border trade has added operational friction. EU-bound shipments must meet ICS2 pre-arrival (ENS) data requirements, while imports from the EU into Great Britain require S&S GB Entry Summary Declarations from 31 January 2025, so customs/VAT compliance needs to be baked into peak workflows.[42, 43]

UK shoppers continue to prioritise fast, low-friction delivery and transparent returns. Recent UK research highlights delivery-and-returns expectations (speed, tracking, free/easy returns) and high online shopping frequency (36% shop weekly). Meanwhile, marketplaces dominate reach: in May 2024, 88% of UK online adults visited Amazon, and 75% of 16+ used an online marketplace (eBay 57%), making marketplace promotions and inventory placement a core lever for Q4.[44]

Out-of-home (OOH) options are expanding fast in the UK (parcel lockers, PUDO). InPost surpassed 10,000 lockers and ~13,000 OOH points in Q1 2025, while wider European/UK trends show shoppers increasingly expect OOH alongside home delivery (useful for failed-delivery reduction and peak resilience).[45, 46]

Continental Europe:

The push for sustainability and localization

Western Europe, including France, Germany, the Netherlands, and Belgium, leads European ecommerce with high internet penetration and innovative logistics ecosystems emphasizing sustainability and customer experience.[47]

Emerging markets in Southern and Eastern Europe exhibit rapid growth but face challenges around infrastructure and digital payment adoption. Highlights include: Western Europe driving circular economy initiatives, reducing packaging waste and promoting re-commerce; localized delivery and payment methods tailored to country-specific preferences, engaging trust; and Eastern and Southern European markets being primed for mobile-driven ecommerce growth.[48]

Conclusion

Achieving peak performance in Q4

Q4 doesn't reward teams that merely "hold it together." It rewards those that turn pressure into signal, by making precise promises, front-loading compliance, and building resilient networks that get better every week. The evidence in this report points to a simple, disciplined playbook:

Win checkout with clarity

Tackle the top abandonment drivers, extra costs (39%) and slow delivery (21%), by showing accurate EDDs and full landed costs early.

Shift volume where reliability is highest

Default to OOH in adoption markets: Europe's pickup networks are at six-figure scale, and in Finland lockers are now the #1 method—proof that choice and convenience reduce failed first attempts. The UK is scaling next-day OOH as well.

Front-load cross-border compliance

Cross-border is 36% of European online sales (~€275.6bn, 2024), so make ICS2 ENS and IOSS/OSS (≤€150) part of checkout. The Commission reports €33bn+ declared via OSS in 2024, underscoring why this belongs in the flow, not the back office.

Engineer resilience, then practice it

Treat last mile as the cost battleground (~41% of logistics spend) and use multi-carrier orchestration, EDD accuracy monitoring, weekly fallbacks, and quarterly chaos drills to keep service levels stable through spikes. Layer in AI for forecasting, exception prediction, and dynamic routing.

Protect margin on returns

Q4 returns, especially in fashion, can run ~3× in-store rates; bias flows to exchanges and instant credit to retain revenue and speed restock.

Make improvement compound by tracking the same few metrics every week, EDD accuracy, first-attempt success by channel (OOH and home), customs-hold rate, share of ≤€150 shipments processed via IOSS, and unit shipping cost versus last Q4, and using what they reveal to adjust the playbook and retest.

Do this consistently and peak stops being a stress test. It becomes game day for a system designed to learn, each spike hardens runbooks, sharpens forecasts, and deepens customer trust you can carry into Q1.

Winners don’t scale heroics.
They scale habits.

A dual path to excellence

Path 1: Win Q4 now, 30-day peak-ready sprint

1 Lock the delivery promise at checkout.

Show 2–4 clear options with order-by cut-off and a specific EDD (not "2–5 days").
Why it matters: predictable dates reduce abandonment; shoppers prefer precise EDDs to vague speed.
Owner: Product + Checkout Eng.
KPI: EDD promise accuracy ≥ 95%; checkout conversion +1–3 pp.

2 Expose true landed costs on cross-border orders.

Collect destination VAT at checkout with IOSS (≤€150) and show duties/fees upfront.
Owner: Tax/Finance + Product.
KPI: Cross-border conversion +2–4 pp; delivery-on-hold rate ↓.

3 Default to OOH where preferred.

Pre-select lockers/PUDO in markets that favor OOH (Nordics, parts of Central Europe); keep home delivery as a secondary choice.
Owner: Product + CX.
KPI: OOH share +10–20 pp in eligible postcodes; failed first attempts ↓.

4 Turn on multi-carrier rate shopping + fallback rules.

Choose the lowest viable service by lane/weight, and auto-shift when a carrier degrades.
Owner: Logistics/Operations.
KPI: Cost per parcel ↓ 3–7%; on-time rate maintained during spikes.

5 Stand up a live "peak board."

Single dashboard for API health, label errors, parcel-flow bottlenecks, and holds.
Add alerting and an on-call rotation for peak week.
Owner: SRE/Platform + Ops.
KPI: Mean-time-to-detect/resolve < 15m; exceptions auto-resolved ≥ 60%. [9]

6 Run a 2-hour chaos drill.

Simulate a carrier outage + API slowdown; verify manual "runbooks" and auto-failover.
Owner: SRE + Ops.
KPI: No order backlog after 60 minutes; fallback success ≥ 99%.

A dual path to excellence

Path 2: Build the moat, 90–180-Day structural advantage

1 Bake compliance into checkout

Capture HS codes + plain-language item descriptions and auto-file ICS2 pre-arrival data.
Owner: Product + Compliance.
KPI: Customs-hold rate ↓; clearance SLA < 2h for low-value parcels.

2 Engineer packaging for PPWR

Design toward the 50% empty-space cap and reduce formats; test "ship without outer box" where viable.
Owner: Packaging/Procurement.
KPI: Avg. DIM weight ↓; damage/return rate stable or ↓.

3 Expand OOH network coverage & UX

Integrate more lockers/PUDOs; improve map/search and success messaging.
Owner: Carrier Mgmt + UX.
KPI: First-attempt success ≥ 98%; NPS for delivery +5–10.

4 Measure what matters—publicly inside the org

Make EDD accuracy, first-attempt success, % IOSS shipments, customs-hold rate, and unit shipping cost the weekly score.
Owner: Ops Finance + Data.
KPI: All five KPIs trending positive for 8 consecutive weeks. (Context: last mile ~41% of supply-chain cost; 84% of EU/UK merchants saw 2024 last-mile costs rise.)

5 Adopt an "always-on" resilience cadence.

Quarterly fault-injection game days, weekly fallback tests, and continuous observability.
Owner: SRE/Platform.
KPI: Error budget respected; no peak-week Sev-1s. (Amazon ran 733 FIS experiments pre-Prime Day 2024.)

Appendix

Glossary

Checkout & Customer Experience

- **Countdown timer**: A visual timer showing how long remains to hit today's order cut-off. *Q4: helps shoppers act and keeps promises realistic.*
- **Cut-off time**: Latest order time that still meets the promised delivery date.
- **Delivery options**: The services a shopper can pick (e.g., home standard/express, OOH locker/shop).
- **EDD (Estimated Delivery Date)**: A specific promised arrival date shown to the shopper. *Q4: precise dates reduce abandonment.*
- **Landed cost**: Total price including product, shipping, **duties**, and **VAT** shown before purchase. *Q4: avoids doorstep surprises and refusals.*

Cross-Border, VAT & Customs

- **Clear item description**: Plain, specific product description for customs (e.g., "men's cotton T-shirt").
- **Cross-border:** Shipping between countries (e.g., UK ↔ EU).
- **Customs hold**: A parcel delayed by missing/poor data or unpaid charges. *Q4: holds can break EDD promises.*
- **ENS (Entry Summary Declaration)**: The pre-arrival safety-and-security data submitted for risk screening (EU: under **ICS2**; GB: under **S&S GB**).
- **HS code (Harmonized System code)**: Standardized product classification used worldwide by customs.
- **ICS2 (Import Control System 2)**: EU regime requiring **ENS** data before goods arrive.
- **IOSS (Import One-Stop Shop)**: EU scheme to collect VAT at checkout for consignments **≤ €150** sent into the EU.
- **OSS (One-Stop Shop)**: EU VAT system that simplifies cross-border VAT reporting within the EU.
- **VAT (Value Added Tax)**: Sales tax applied in many countries.

Shipping & Last Mile

- **Carrier**: Company that transports parcels (postal, parcel, courier).
- **First-attempt delivery rate**: % of deliveries that succeed on the first try. *Q4: cuts redeliveries and cost.*
- **OOH (Out-of-Home) delivery**: Collection away from home (lockers, parcel shops).
- **On-time delivery rate**: % delivered on or before the promised date.
- **Parcel locker**: Self-service lockers for collecting/returning parcels.
- **PUDO (Pick-Up/Drop-Off)**: Network of shops/lockers used for OOH deliveries and returns.
- **Service level**: Speed/terms of a delivery service (e.g., next-day, economy, tracked).

Returns & Reverse Logistics

- **Disposition**: What happens to a returned item: **grade-and-resell**, **liquidation**, **donation**, **repair**, or **recycling**.
- **Exchange-first**: Returns flow that encourages exchanging rather than refunding.
- **Instant store credit**: Credit issued immediately to encourage a quick repurchase.
- **Refund at first scan (RFS)**: Refunding when the carrier first scans the return (programme-dependent).
- **Returnless refund**: Auto-refund without asking for the item back (usually low-value/low-risk).
- **Reverse logistics**: The end-to-end processes for returns.
- **Time-to-credit**: Time from return initiation to customer receiving money/credit.

Packaging, Cost & Sustainability

- **DIM / Volumetric weight**: Chargeable weight based on package size, not just scale weight.
- **Empty-space ratio**: % of unused volume inside a parcel.
- **PPWR (EU Packaging & Packaging Waste Regulation)**: EU rules including a **50% empty-space cap** for certain packaging types on a defined timeline.
- **Right-sizing**: Choosing packaging that fits the item with minimal empty space.

- **SIOC (Ships in Own Container)**: Item ships in its retail box without an overbox (when safe).
- **Void fill**: Material used to cushion/fill empty space (paper, air pillows, etc.).

Reliability & Operations

- **Chaos drill / fault-injection**: Planned test that simulates outages to verify failover and team readiness. *Q4: find weaknesses before customers do.*
- **Fallback (carrier/service)**: Automatic switch to a backup when the primary option degrades or lacks capacity.
- **Game day**: Scheduled exercise to practice incident response under realistic load.
- **Multi-carrier orchestration**: Routing each shipment to the best carrier/service based on rules, price, and performance, with automatic fallbacks.
- **Observability / telemetry**: Real-time signals (events, metrics, logs) that show system health (APIs, labels, handovers, exceptions).
- **Peak board**: A live dashboard for peak-week operations (API health, label errors, parcel flow, customs holds).
- **Runbook**: Step-by-step operating procedure for predictable incidents (e.g., a carrier outage).

Data, KPIs & Governance

- **Contact rate / WISMO**: Customer contacts per 100 orders; WISMO = “Where Is My Order?” inquiries.
- **Customs-hold rate**: % of cross-border parcels stopped for data/payment issues.
- **EDD accuracy**: % of orders delivered on or before the promised date.
- **IOSS share (≤ €150)**: % of eligible EU-bound orders using IOSS at checkout.
- **KPI (Key Performance Indicator)**: Metric used to track performance to target.
- **MTTD (Mean Time To Detect)**: Average time to notice an issue.
- **MTTR (Mean Time To Resolve)**: Average time to clear an issue once detected.
- **SLA (Service Level Agreement)**: The level of service you commit to (e.g., “deliver by Friday”).
- **Unit shipping cost**: Cost per parcel, including last-mile fees and surcharges.

AI & Automation

- **Autonomous decision-making**: Systems that select carriers/services or update promises without manual steps (within guardrails).
- **Dynamic routing / re-routing**: Automatically shifting parcels to better services or lanes in response to live conditions.
- **Predictive risk mitigation**: Using historical and live data to forecast spikes, bottlenecks, or route risks before they hit.
- **Single source of truth**: Consolidated operational data shared across teams for consistent decisions.

About nShift

Every second, somewhere in the world, a delivery powered by nShift is on its way. From the moment a shopper clicks “Buy” to the moment a parcel is tracked, returned, or exchanged, our technology keeps the experience moving smoothly.

We power the world’s leading Delivery & Experience Management platform, connecting retailers, warehouses, and brands to the world’s largest carrier network: over 1,000 carriers in 190 countries, powering close to a billion shipments a year. That reach, combined with our end-to-end platform, means businesses can scale fast, stay resilient in peak season, and meet rising expectations for choice, convenience, and sustainability.

Born from Northern Europe’s most advanced delivery markets, nShift today supports more than 22,000 customers, giving them the flexibility to scale at peak, the tools to reduce costs, and the confidence to keep customers coming back.

In a short demo, we’ll show you exactly how nShift fits into your setup and how quickly it delivers results. Get in touch today and see how easy smarter shipping can be.

i https://ecommercenews.eu/european-cross-border-ecommerce-worth-275-6-billion-euros/

ii https://www.cbcommerce.eu/blog/2025/04/12/top-500-b2c-cross-border-retail-europe-an-annual-ranking-of-the-top-500-european-cross-border-online-shops/?srsltid=AfmBOoraZjZiCtnpoEeTRBYYJ-UiUYfVxY8QbUu-VFKad2ptwKl2_AGJ&utm

iii https://www.dhl.com/global-en/microsites/ec/ecommerce-insights/insights/e-commerce-logistics/2025-cross-border-trends.html

iv https://dhl-freight-connections.com/en/trends/e-commerce-trends-report-2025/

v https://ec.europa.eu/eurostat/statistics-explained/index.php?title=E-commerce_statistics_for_individuals

vi https://dhl-freight-connections.com/en/trends/e-commerce-trends-report-2025/

vii https://www.cbcommerce.eu/blog/2025/04/12/top-500-b2c-cross-border-retail-europe-an-annual-ranking-of-the-top-500-european-cross-border-online-shops/

viii https://www.dhl.com/global-en/microsites/ec/ecommerce-insights/insights/e-commerce-logistics/2025-cross-border-trends.html

ix https://taxation-customs.ec.europa.eu/news/eu-import-control-system-2-ics2-extends-rail-and-road-transportation-april-2025-2025-02-03_en

x https://taxation-customs.ec.europa.eu/news/continued-growth-revenue-and-registrations-confirms-success-reformed-eu-vat-rules-e-commerce-2025-07-23_en

xi https://www.dpd.com/wp-content/uploads/sites/218/2024/02/Geopost_E-shopper-barometer-2023_European-Report_VDEF.pdf

xii https://www.eea.europa.eu/en/analysis/publications/the-destruction-of-returned-and-unsold-textiles-in-europes-circular-economy

xiii https://www.capgemini.com/wp-content/uploads/2019/01/Report-Digital-%E2%80%93-Last-Mile-Delivery-Challenge1.pdf

xiv https://www.dssmith.com/contentassets/b3820bef3f674751a3a3f9ae9ddc5772/ds-smith_ecomm_last-mile_report2025.pdf *Direct download*

xv https://eur-lex.europa.eu/eli/reg/2025/40/oj/eng

xvi https://www.mckinsey.com/industries/logistics/our-insights/what-do-us-consumers-want-from-e-commerce-deliveries

xvii https://www.pitneybowes.com/us/blog/speed-expectations-2024.html

xviii https://www.capgemini.com/wp-content/uploads/2019/01/Report-Digital-%E2%80%93-Last-Mile-Delivery-Challenge1.pdf

xix https://proshipinc.com/blog/unlock-maximum-shipping-cost-savings-real-time-rate-shopping-at-the-packing-station/

xx https://www.europarl.europa.eu/news/en/press-room/20240419IPR20589/new-eu-rules-to-reduce-reuse-and-recycle-packaging

xxi https://nrf.com/media-center/press-releases/nrf-and-happy-returns-report-2024-retail-returns-total-890-billion

xxii https://ecommercenews.eu/european-cross-border-ecommerce-worth-275-6-billion-euros/

xxiii https://vat-one-stop-shop.ec.europa.eu/index_en

xxiv https://taxation-customs.ec.europa.eu/system/files/2021-03/guidance_acceptable_goods_description_en.pdf xxv https://taxation-customs.ec.europa.eu/customs/customs-security/import-control-system-2_en

xxvi https://vat-one-stop-shop.ec.europa.eu/index_en

xxvii https://www.revenue.ie/en/vat/vat-ecommerce/import-oss/index.aspx

xxviii https://taxation-customs.ec.europa.eu/buying-goods-online-coming-non-european-union-country_en

xxix https://www.dhl.com/global-en/microsites/ec/ecommerce-insights/insights/e-commerce-logistics/2025-out-of-home-trends.html

xxx https://aws.amazon.com/blogs/aws/how-aws-powered-prime-day-2024-for-record-breaking-sales/

xxxi https://docs.aws.amazon.com/wellarchitected/latest/reliability-pillar/rel_testing_resiliency_playbook_resiliency.html

xxxii https://docs.aws.amazon.com/AmazonCloudWatch/latest/monitoring/CloudWatch_Dashboards.html

xxxiii https://reports.weforum.org/docs/WEF_Transforming_Urban_Logistics_2024.pdf

xxxiv https://resiliencefirst.org/news/artificial-intelligence-for-supply-chain-resilience-a-qa-with-deloitte-insights/

xxxv https://www.accenture.com/content/dam/accenture/final/accenture-com/document-2/Accenture-Supply-Chain-Networks-In-The-Age-Of-Generative-AI.pdf

xxxvi https://dhl-freight-connections.com/en/trends/e-commerce-trends-report-2025/

xxxvii https://dhl-freight-connections.com/en/trends/e-commerce-trends-report-2025/

xxxviii https://baymard.com/lists/cart-abandonment-rate

xxxix https://vat-one-stop-shop.ec.europa.eu/index_en

xl https://www.postnord.no/siteassets/pdfs/pn-e-commerce-in-the-nordics-2024.pdf

xli https://datareportal.com/reports/digital-2025-united-kingdom

xlii https://taxation-customs.ec.europa.eu/customs/customs-security/import-control-system-2_en

xliii https://www.gov.uk/government/publications/preparing-for-the-new-safety-and-security-declaration-requirements/get-ready-for-safety-and-security-declaration-requirements-for-importing-goods-from-the-eu?

xliv https://www.ofcom.org.uk/siteassets/resources/documents/research-and-data/online-research/online-nation/2024/online-nation-2024-report.pdf?v=386238

xlv https://inpost.eu/sites/default/files/2025-05/InPost%201Q%202025%20press%20release.pdf

xlvi https://www.dhl.com/global-en/microsites/ec/ecommerce-insights/insights/e-commerce-logistics/2025-out-of-home-trends.html?utm_source=chatgpt.com

xlvii https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Digital_economy_and_society_statistics_-_households_and_individuals

xlviii https://www.europarl.europa.eu/news/en/press-room/20240419IPR20589/new-eu-rules-to-reduce-reuse-and-recycle-packaging?