

KNOWLEDGE CENTER

Recommendations for Improving EMS Quality**Introduction**

EMS is the Universal Postal Union (UPU)'s premium end-to-end express postal product, offered by designated postal operators in over 170 countries and territories, and characterised by priority handling and full tracking (EMS Cooperative, n.d.). High-quality EMS underpins cross-border e-commerce, national competitiveness, and public trust, as the postal sector increasingly functions as the backbone of digital trade and logistics (Universal Postal Union [UPU], 2023). The UPU estimates that without postal infrastructure, the median decline in a country's GDP would be 6.96 per cent, underscoring the systemic economic importance of postal networks (UPU, 2023). The Integrated Index for Postal Development (2IPD), which covers 172 countries, benchmarks performance across reliability, reach, relevance, and resilience, thereby providing policymakers with comparative measures of postal quality (UPU, n.d.). This report benchmarks domestic operations in Japan and Germany, distils best practices from global integrators, assesses customer experience, presents supplementary cases, and proposes a 12-month roadmap to enhance EMS quality worldwide.

Section 1. Comparative Analysis of Domestic Parcel Operations in Japan and Germany
Timetable design and process discipline

Japan's parcel networks are engineered around minute-level timetables and product-linked service commitments. Yamato allows customers to select specified delivery windows (e.g., 08:00–12:00; 14:00–16:00; 16:00–18:00; 18:00–20:00; 19:00–21:00), operationalised through depot process sheets and strict cut-off times (Yamato Transport, n.d.-a). Premium services such as TA-Q-BIN Time Service guarantee delivery by 10:00 a.m. the next morning for items accepted by evening, leveraging air uplift on designated lanes (Yamato Transport, n.d.-b). Germany's model differs in form but is comparable in reliability: DHL Paket communicates a nationwide one-to two-day cycle for domestic parcels, with express options available (DHL, n.d.-a; DHL, n.d.-b). German practice emphasises predictable next-day delivery coupled with recipient-controlled flexibility rather than tight appointment slots.

Equipment and containerisation

Both countries design physical flows so that compliance is the easy way. In Japan, dense urban conditions favour wheeled roll-box pallets—introduced as part of a unit-load system combining pallet and container functions—short conveyor transfers at docks, and automated sorting equipment (LNEWS, 2020) even in mid-sized distribution centres. These practices align loading sequences with delivery route order. Germany invests at mega-hub scale and IoT-enabled assets. Deutsche Post DHL has deployed GPS-tracked roll cages to enhance asset visibility across its national hub network, and its Bochum mega parcel centre sorts up to 50,000 parcels per hour, among the largest capacities in Europe (Sigfox/UnaBiz, 2019; DHL Group, 2019). The outcome: Japan prioritises versatile, small-footprint equipment suited to high stop-density routes, while Germany emphasises high-throughput automation and instrumented containers to stabilise peak performance.

Data practices

Japan enforces scan completeness at every handover, ensuring transparency and accountability throughout the parcel journey. This practice guarantees that all delivery attempts are logged and underpins orderly, customer-initiated redelivery when recipients are absent (Yamato Transport, n.d.-c). Germany, by contrast, leverages digital services to empower recipients with redirection options and reduces re-deliveries structurally through a dense network of parcel lockers—about 17,000 units with 1.2 million compartments in 2023—and over 60,000 access points, enabling flexible collection and redirection (Bundesnetzagentur, 2025). Collectively, these models illustrate how EMS operators can treat data both as internal control mechanism (Japan: enforcing completeness) and as a recipient-facing enabler (Germany: providing flexibility).

Recipient experience

Japan builds convenience through punctuality and precise control. Customers select delivery slots and can rebook missed deliveries easily by IVR or online. Current national debate focuses on reducing failures by normalising “unattended delivery” in secure locations (Asahi Shimbun, 2025). Germany builds convenience through choice and proximity. DHL’s Packstation network comprises around 9,000 units, reaching about 90 per cent of residents within ten minutes (nShift, 2024). Paketshops and neighbour-authorized deliveries are widespread. Such dense out-of-home infrastructure systematically reduces the needs for re-deliveries, contrasting with Japan’s continuing reliance on rebooking.

Governance and KPI transparency

Japan ties product-level KPIs (e.g., D+1 EMS standards, time-window punctuality) to public disclosure. In 2024, Japan Post publicly adjusted some long-distance delivery standards due to new truck-driver overtime regulations, quantifying the expected impact: 3.4 per cent

of Yu-Pack items and 0.2 per cent of express letters delayed (Japan Times, 2024). The Ministry of Land, Infrastructure, Transport and Tourism reported a national re-delivery rate of 8.4 per cent in April 2025, down from 10.6 per cent in 2022, reflecting improvements from scheduling and alternative-receipt initiatives (Ministry of Land, Infrastructure, Transport and Tourism [MLIT], 2025). Germany emphasises capacity disclosure and seasonal planning. DHL communicates hub expansions and peak-season readiness, while Bundesnetzagentur publishes annual parcel market reports as independent benchmarks (Bundesnetzagentur, 2025).

EMS-relevant lessons

- Engineer time certainty: codify national cut-offs and hub windows (Japan's minute-level discipline) while maintaining a next-day norm (Germany).
- Standardise flow hardware: pair roll-box/roll-cage, conveyors and tail-lift as the default interface; apply IoT tracking where feasible.
- Close the data loop: enforce 100 per cent scan completeness (Japan) and enable recipient-driven redirection (Germany).
- Publish and plan: link product promises to KPIs and communicate peak capacity and re-delivery metrics regularly.

Section 2. Integrator Best Practices in Cross Border and Customs Operations

Global express integrators hard wire compliance into the shipping journey, providing a blueprint for EMS improvement. First, they treat Electronic Advance Data (EAD) as a label time requirement: shippers must submit complete item data and identifiers that pass real time validation before a label is issued, supporting downstream security screening. Postal operators have historically struggled with incomplete data-for example, only 64 per cent of inbound USPS parcels had full electronic customs data in early 2020 (USPS Office of Inspector General, 2020)-whereas integrators achieve near 100 per cent EAD compliance. The European Union (EU)'s Import Control System 2 (ICS2) requires pre arrival data for all air consignments, including postal and express, making such "right first time" capture essential (European Commission [EC], 2025). Operators that prepared for ICS2's phased rollout report that early, structured EAD materially reduces rejections and delays (Fischer et al., 2024).

Second, integrators comply by design with pre arrival regimes. In the EU they file ICS2 declarations on schedule; in the United States, the STOP Act mandates advance electronic data for international mail (postal) consignments, while integrators comply through separate air cargo programmes (ACAS/AMS/ACE) requiring pre loading data for risk targeting (U.S. Customs and Border Protection, 2024). The STOP Act compelled USPS to provide AED

on 100 per cent of inbound mail by January 2021 (U.S. House of Representatives, 2018).

Third, integrators synchronise physical and data flows. Whereas postal EMS relies on UPU EDI exchanges (e.g. CARDIT/RESBIT events), integrators employ International Air Transport Association (IATA) Cargo XML and electronic air waybills (e AWBs), supplemented by proprietary tracking scans, and generally do not use UPU formats. Bridging tools such as the Postal Air Waybill (PAWB) link postal shipments to air cargo systems where necessary (International Air Transport Association, n.d.). The air-cargo sector's digitisation has advanced but remains incomplete: by May 2023, only about 85 per cent of air waybills were processed electronically, falling short of the IATA target of 100per cent (Aviation Business News, 2023). This reflects substantial progress compared with earlier years, but also highlights remaining gaps that prevent fully efficient collaboration across the sector.

Fourth, early risk screening is routine. ICS2 applies security risk analysis to 100 per cent of inbound goods, enabling high risk consignments to be targeted before loading or on arrival, while low risk shipments flow through (EC, 2025). Integrators complement this with internal selectivity models (green/amber/red lanes) based on commodity, value and party risk profiles; rapid responses to ICS2 referrals further reduce dwell times (Fischer et al., 2024).

Fifth, duties and taxes are made predictable. For low value consignments into the EU, the Import One Stop Shop (IOSS) allows Value Added Tax (VAT) to be collected at checkout and remitted via a single EU registration. Uptake has been strong—about 22,000 additional IOSS traders registered in 2023 (Caragher, 2025)—reducing delivery time payment friction. For other lanes and values, integrators offer Delivered Duty Paid (DDP) options to eliminate on delivery fee collection.

Sixth, customer facing compliance messaging is built into tracking. Recipients see real time clearance status updates and can pay duties/VAT online or reroute delivery before the first attempt—capabilities exemplified by DHL's On Demand Delivery platform (DHL Express, 2023). This aligns with consumer expectations: in one survey, 47 per cent of European online shoppers stated their delivery experience would improve if more parcel pick up points were available (DHL, 2024).

Finally, integrators govern with KPIs and SLAs. They define and track performance targets, and dashboards monitoring EAD timeliness, ICS2 reject codes, pre clearance rates, and clearance dwell times, triggering lane specific fixes as needed (Fischer et al., 2024). The Global Express Association benchmarks border efficiency in more than 120 countries (Grau Tanner, 2023). For EMS, adopting a comparable KPI/SLA framework offers a practical

pathway to improved cross border performance.

Policy takeaway: Embed label time EAD validation, file to the appropriate regime on time, map UPU↔IATA milestones, triage by risk, pre price duties, message proactively, and manage performance through a cross border scorecard.

Section 3. Customer Experience and Reducing Re-deliveries

Improving first attempt delivery is the most powerful lever for EMS quality. Posts should combine realistic delivery windows with proactive notifications and pre attempt redirection. Japan's recent data reported a redelivery rate of 8.4 per cent in April 2025, down from 10.6 per cent in 2022, following measures to reduce missed deliveries (MLIT, 2025).

Japanese operators allow recipients to choose delivery slots and rebook before the first attempt online, thereby reducing wasted trips (Yamato Transport, n.d.-c). Proactive messaging should also cover customs fees: integrators now enable online duty/VAT payment prior to arrival, preventing doorstep failures and ensuring timely handover (DHL Express, 2023). Reflecting this, the share of cross border parcels requiring payment on delivery fell from 21 per cent in 2021 to 12 per cent in 2023 as more retailers included duties upfront (International Post Corporation [IPC], 2024a).

Out of home (OOH) options are equally important. Germany's regulator reported 12,322 parcel lockers in 2021 (all operators) with over one million compartments, and DHL's Packstations exceeded 10,000 in 2022—underscoring the density required for convenient self collection (Bundesnetzagentur, 2023). Consumer satisfaction falls sharply when OOH facilities are distant: half of users were “extremely satisfied” with a locker under 100 metres of home, compared with only 18 per cent when more than one kilometre away (IPC, 2024b).

Language consistency and status clarity also reduce WISMO (“Where is my order?”) contacts. Using a standard event taxonomy—for posts, UPU EMSEVT v3 (M40)—aligns internal scans with customer facing milestones (UPU, & World Customs Organization, 2024). Harmonised tracking terms (“Out for delivery,” “Awaiting payment,” “Held—documents required”) support targeted nudges instead of generic updates.

Returns and cost transparency also shape loyalty. In IPC's 2023 cross border survey, 71 per cent of consumers were satisfied with delivery location, but only 42 per cent with customs payment, demonstrating the need for improved pre payment options and clear instructions (IPC, 2024b). EMS operators should therefore: (i) publish time-window standards and push alerts; (ii) offer pre attempt redirection to lockers, pick-up/drop-off (PUDO) points or alternate addresses; (iii) adopt standard tracking vocabularies; and (iv) make duties and

returns fully transparent (e.g., prepaid options, app/QR return labels). Collectively, these measures will boost first attempt success, cut re deliveries, and build public trust.

Section 4. Supplementary Cases

Four postal operators illustrate transferable practices. Swiss Post consistently reports high customer satisfaction – for example, a 2023 survey scored it 76 out of 100 on overall satisfaction (Swiss Post, 2024). PostNL combines highly automated parcel operations with an international e-commerce gateway: in 2023 it delivered an average of 1.1 million parcels per working day and operated 37 sorting centres (31 parcel, five mail, and one international), supporting data-rich cross-border flows and facilitating faster customs clearance (PostNL, 2024). Singapore Post (SingPost) pairs a dense POPStation locker network (over 11,000 lockers) with the Singapore eCommerce Logistics Hub, offering 24/7 out of home parcel collection and integrated cross border fulfilment (Singapore Post, n.d.). Hongkong Post leverages an expanding iPostal Station locker network—153 stations were in operation as at 31 December 2023, with a six-month average utilisation rate of 63 per cent—to widen out-of-home collection and strengthen first-attempt success (Audit Commission, 2024).

These cases serve as reference points: discrete practices to be adapted to local EMS contexts, rather than prescriptive models, helping administrations accelerate improvements while respecting national regulatory and market conditions.

Conclusion

EMS quality improves most rapidly when reforms combine domestic discipline, cross border compliance, and customer experience. Benchmarking between Japan and Germany illustrates the value of minute level punctuality and transparent KPIs, while the UPU's 2IPD frames quality across reliability, reach, relevance, and resilience (UPU, n.d.). A 12 month roadmap can guide implementation: Q1 establish baseline governance (EAD/scan audits, lane KPIs); Q2 enforce label time EAD and scan completeness fixes; Q3 align airline/handler SLAs and milestone mapping; Q4 publish a KPI dashboard and conduct partner reviews. This sequencing operationalises evidence based levers: pre arrival filings under ICS2 to enable risk assessment and reduce holds (EC, 2025), standardised cross border notifications to improve tracking clarity (IPC, n.d.), and pre payment of duties/VAT before delivery to avoid doorstep failures (DHL Express, 2023).

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