Fresh Chain

Online shopping of everything from groceries to pharmaceuticals is driving growth in the fulfillment and delivery of temperature-controlled goods through standard networks. This in turn creates new challenges to pick, package, and deliver single shipments with temperature integrity. To enable this new fresh chain of single shipments, companies will need to develop and implement special processes, innovative cold chain packaging, fast networks, and optimized infrastructure.

KEY DEVELOPMENTS & IMPLICATIONS

Already today in the US, it is estimated that almost half of shoppers buy groceries online, with the highest adoption by millennials at 61%.[6] This trend will continue to grow with online shopping of fast-moving consumer goods projected to become a 170 billion-dollar business by 2025.[7] The demand for convenience is adding logistics complexity in the fulfillment of small, time- and temperature-sensitive deliveries of groceries, pharmaceuticals, and medical products. Logistics providers will need to continuously advance the supply chain with innovations in packaging, tracing, and authenticating cold-chain shipments.

On-demand delivery of fresh goods is reinventing the B2C relationship with retailers focusing on easy payment methods and delivery (e.g., Amazon, JD.com). As logistics networks are increasingly shared, single shipments requiring special conditions (such as cold chain) will be bundled to reduce time and cost pressures. New models will also include more last-mile delivery solutions (e.g., Fresh Turf delivery to storage lockers), automated subscription (to receive fresh goods or medicines) with scheduled deliveries, and in-home delivery with access enabled by smart locks.

End-to-end cold-chain networks are becoming more reliable, enabling larger delivery volumes of sensitive goods. A prerequisite for customers will be assurance of product integrity, especially at critical points such as consignment switches from one transport mode to another. Temperature-controlled fleets must demonstrate regulatory compliance, and this will be enabled by improved data transparency, real-time monitoring, and end-to-end live support (e.g., DHL LifeTrack). Visibility and product authentication can be further enhanced using IoT and blockchain technologies.

Temperature-controlled packaging innovations allow goods to be transported via standard parcel networks and last-mile delivery services, reducing the need for climate-controlled trucks and containers. New concepts include reusable thermos boxes, smart packaging solutions controlling oxygen, humidity and/or pressure, and labeling innovation indicating "freshness" of each single shipment.

KEY OPPORTUNITIES

- New business opportunities for temperature-controlled last-mile delivery
- Increases collaboration across the entire supply chain to achieve end-to-end cold chain networks
- Higher product security through packaging innovation and real-time monitoring

KEY CHALLENGES

- Thermal packaging, in-transit monitoring devices, and intervention services drive up costs
- Adds complexity to the supply chain (e.g., at critical points, direct-to-consumer model) and to warehouse management
- Requires dependable network of cold chain partners to ensure high quality standards and efficient cooperation

Delivering Farm-to-fork Delivery – Die Bauerntüte

- This German company connects farms with customers, creating a new distribution channel for farmers
- Uses DHL's expertise to deliver fresh food within a day in temperature-controlled reusable boxes
- Meets growing local demand for direct access to regional and organic foods produced in a fair and responsible manner

Source: Die Bauerntüte

Trend Assessment **Timeframe:** < 5 years **Impact:** Medium **Sector Relevance:** AUTO E&M TECH ENERGY LSH RET&CON

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