8 SUCCESS FACTORS TO TRANSCEND TO AN AGILE, DIGITAL-FIRST ORDER FULFILMENT OPERATION
The Covid-19 pandemic was an inflection point in online retail. Customers compelled to shop from home also experienced the sheer convenience of online shopping. The online retail industry grew exponentially and the momentum may continue in the near future. However, the dynamics of global e-Commerce industry changed during this period (Figure 1).

**e-Commerce Industry – Quick Facts**

**The Covid-19 Effect**

**Increased Customer Spend**
More than 50% YoY growth in online spend

**Lack of Brand Loyalty**
More than 80% of customers purchased alternatives to their preferred brands

**Multitude of Choices**
204% increase in online sellers

**Change in Decision Factors**
Price and speed of delivery influence shopping decisions

Source: business insider, digitalcommerce360 and eMarketer 2021

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**Key Expectations**

**Instant Delivery**
Same day delivery

**Real-Time Visibility**
One-touch tracking of packages

**Delivery Slot Selection**
2-hour slot options rather than 4/6-hour slots

**First Time Right**
Deliver the right product at the right time

**Convenient Delivery**
Flexibility in delivery methods

**Two-way Communication**
Ability to reach out to the delivery executive

**Reschedule Delivery**
Access to delivery management platforms to change the delivery schedule

**Advance Delivery Notification**
Advance intimation of delivery time

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55%-80% shoppers expect same day delivery

66% buyers are willing to pay more for same day delivery

57%-70% of customers consider shopping elsewhere after a bad delivery experience

55% consumers will switch to retailers offering faster delivery

Source: business insider, digitalcommerce360 and eMarketer 2021, Bringg.com

Research by ATOS and HERE in US

Capgemini Research Institute report 2019

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Figure 1: Dynamics of the e-Commerce Industry
Several e-Commerce platforms were launched to address the growing demand. Customer expectations transcended defect-free products. Intense competition between e-Commerce platforms and online sellers led to new business models to attract and retain customers.

In this landscape, an efficient last mile fulfilment model offers a significant advantage to retailers. Yet, challenges in last mile delivery are a reality for hybrid retailers and third-party logistics service providers (Figure 2).

Retailers should redesign the supply chain and logistics network to address challenges and boost last mile fulfilment service. Redesigning the last mile fulfilment process requires a nuanced understanding of customer requirements and market segments. It also needs to be built on the basic tenets of seamless delivery (Figure 3).
8Cs for an Effective Order Fulfilment Service Design

**Customer-centric Service**
Customer preferences and expected service levels should be at the core

**Coverage**
Strategic placement of distribution centers is an imperative to maximize geographic coverage

**Cognitive & Connected Fulfilment**
Advances planning & real-time visibility into the fleet is required for proactive risk identification and mitigation

**Convenience**
A choice of convenient delivery options enhances the shopping experience

**Control Tower Assisted Operations**
Control tower-assisted fulfilment operations enable informed and timely decisions to mitigate risks

**Capital-light Fulfilment Network**
A collaborative logistics ecosystem provides scalability while rationalizing capital expenditure

**Cost Center to Revenue Center**
Up-selling and cross-selling using last mile fulfilment infrastructure creates new revenue streams.

**Carbon-light Operations**
Every opportunity to minimize the carbon footprint should be capitalized on for sustainable growth

Figure 3: Service design elements
Advanced technologies, such as artificial intelligence (AI), machine learning (ML), automation, and predictive analytics, help retailers identify inefficiencies, optimize planning and streamline operations. Further, technology solutions support each foundational element of an efficient last mile fulfilment model.

**Customer-centric Service**

Fulfilment services should be mapped to customer preferences and expectations to maximize its effectiveness. This requires an intimate understanding of each customer cohort, which can be gained by identifying microsegments and segment motivators. Big data analytics and deep learning tools enable dynamic micro-segmentation (Figure 4). These systems continuously update the universe of customer microsegments based on real-time data, thereby enabling retailers to design and deliver personalized last mile fulfilment service experiences.

![Figure 4: Personalized service](image-url)
Coverage

Since retail products are often priced competitively, speed of delivery is a critical service differentiator. A last mile network designed for extensive geographic coverage enables online retailers and brands to fulfill orders at the speed expected by consumers. Simulation models evaluate diverse delivery scenarios and realign the last mile network for same day / next day delivery. Predictive and prescriptive analytical solutions provide insights to optimize the location of distribution centers, which helps accelerate delivery and meet stringent service level commitments (Figure 5). Algorithms also recommend a mix of dark warehouses, city distribution centers, and micro-warehouses based on macro-variables such as geographic layout and order density.

<table>
<thead>
<tr>
<th>Key Objectives</th>
<th>Macro Variables</th>
<th>Distribution Models</th>
</tr>
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<tbody>
<tr>
<td>Speed of delivery, geographic reach, and cost reduction</td>
<td>Customer base, density of delivery, resource availability, and cost</td>
<td>Micro-warehouses, mobile warehouses, and distribution centers</td>
</tr>
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An analytics-driven last mile network combines diverse delivery models for high availability, faster fulfillment, and cost-effective operations.

Figure 5: Wide fulfilment network

Cognitive & Connected Fulfilment

Technology-aided planning & workflow-based task orchestration ensures the resilience of the last mile fulfilment process. Further, an IoT-driven connected fleet offers real-time visibility into every trip. AI-based route planning and optimization tools generate route plans by combining macro-variables such as weather conditions and traffic forecasts with micro-variables such as fleet capacity and driver attitude (Figure 6). The route plan can be pushed to the digital console of the vehicle or the mobile device of the driver. A dynamic route planning system can also incorporate real-time feeds from onboard sensors as well as last-minute updates from customers to optimize the route even after the trip has commenced.

Figure 6: Dynamic route planning
Convenience

Online shoppers not only expect their shipments to be delivered at the time and place of their choice, but also seek flexibility to change delivery instructions even at the last minute. Delivery formats that are aligned with product offerings and the geographic spread, and a robust platform for order fulfillment help retailers address logistical and financial challenges in maximizing the flexibility of delivery (Figure 7).

Further, automation helps in establishing process KPIs for each delivery format, which enables e-Commerce enterprises to offer a seamless fulfillment experience irrespective of the delivery option selected by the customer. Moreover, automated solutions replace resource-intensive practices of the conventional order fulfillment process, such as physical proof of delivery (POD), to augment delivery models.

Control Tower Assisted Operations

Control tower applications offer real-time, end-to-end visibility into supply chain operations by consolidating data from different processes and systems (Figure 8). Continuous monitoring and actionable insights enable informed decision-making to optimize fulfillment operations. Improved visibility into inter-dependent procedures help identify bottlenecks in the fulfillment process, which facilitates targeted improvement actions. Advanced data analytics and predictive models allow control towers to predict incidents even before they happen and resolve them automatically or with minimal supervision. Significantly, it rationalizes IT investments for tracking and resolving issues in last mile delivery.

Smart Lockers
- Small packages of high-value items

Alternate PUDO
- Small packages of low-value items

BOPIS
- Large brick-and-mortar retail chains

Curb-Side Pickup
- Brick-and-mortar retailers with large stores

Figure 7: Delivery models

Control tower applications harness data from diverse sources to enable
- High visibility into operations
- Proactive & reactive disruption identification
- Predictive & prescriptive decision support
- Autonomous problem solving & Actionable insights

Advanced Tracking
Incident Detection & Alerts
Proactive Monitoring
Decision Support System
Data Insights

Figure 8: Dynamic process optimization
Capital-light Fulfilment Network

While an efficient order fulfilment mechanism is critical in online retailing, delivery logistics may not be an area of expertise for several retailers. Such retailers can build and maintain a robust order fulfilment network by sharing the delivery infrastructure. Shared infrastructure instantly expands the delivery footprint, while minimizing the cost of operations. Retailers can combine their capabilities to form a single delivery organization, maintain separate delivery structures and offer exclusive access to each other’s infrastructure, or avail of fulfilment services provided by leading retailers, such as Amazon Seller Service and Walmart GoLocal.

Crowdsourcing is a new trend in last mile fulfilment. It enables retailers to have an asset-light, and scalable fulfilment model. Retailers can select the partner and level of engagement based on their process maturity and strategic vision. Notably, the crowdsourcing model requires systems and process-level integration between participating retailers.

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In 2020, a leading agriculture supplies and home improvement retailer in the US implemented crowdsourced delivery by partnering with a leading crowdsourcing platform. The model allowed them to offer same-day and next-day delivery for all orders, across stores.

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Cost Center to Revenue Center

Smart technologies pivot the last mile delivery infrastructure from a cost center to a revenue center. Data mining solutions accurately identify opportunities to up-sell / cross-sell the fulfilment network, at the point of delivery (Figure 9). This method leverages proximity warehousing, and is especially effective for low-value, fast-moving products.

Figure 9: Proximity marketing
Account mining offers another opportunity for retailers to generate additional revenue, especially in the consumables category. In this model, a customer’s historical purchase data is analyzed to gauge the potential for reordering. In addition, customers in the proximity of a delivery route are notified of the delivery for purchase planning. Data analytics also provides rich insights for persuasive marketing techniques. While some customers may find it intrusive and opt-out of it, any conversion generates additional revenue at no additional cost.

“A leading water sales company in the Middle East replaced drivers with travelling salesmen for their milk-run. The driver salesmen generated additional revenue via new orders from other customers in the proximity and upselling orders by pitching complementary products.”
To Conclude, an efficient last mile fulfilment model is imperative to compete effectively in online retail. Retailers should combine strategy frameworks and technology platforms to ensure ‘first time right’ delivery and boost order fulfilment.

Carbon-light Operations

Cognitive fulfilment models reduce the carbon footprint by providing actionable insights to eliminate emissions and identify pathways to promote sustainability (Figure 10).

Carbon-light fulfilment models integrate sustainability into the end-to-end delivery pipeline – from warehousing to returns management.

- Combine micro-fulfilment centers with regional warehouses
- Optimize inventory based on customer behavior
- Create awareness of the carbon footprint of fulfilment processes
- Offer low-emission options such as late delivery, off-peak slots, and order aggregation
- Provide opportunities to participate in carbon-offset initiatives
- Adopt eco-friendly packaging, including recycled materials
- Use reusable containers for shipping
- Aggregate orders to minimize packaging
- Encourage paperless fulfilment
- Use vehicles powered by alternative fuel sources
- Maximize fuel efficiency

Figure 10: Carbon-light operations
About Us

Infosys, a global leader in Technology and Business Consulting helps retailers, brands and consumer goods companies to transform omnichannel and order fulfillment processes as part of our larger D2C initiatives. We drive end-to-end transformations and deliver successful outcomes through our integrated approach which includes

- Industry thought leaders & domain experts that define the strategy, vision and roadmap
- A global design studios network that helps reimagine and deliver a superlative experience
- Infosys Innovation Network to deliver innovative use-cases and next-gen digital solutions
- A de-risked scale out of the enterprise solution through our well-established global delivery model

To see our ideas in action, please visit InfosysConsultingInsights.com.

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