GAINING A COMPETITIVE EDGE WITH LAST MILE LOGISTICS

How this Frontier for Retailers will Set a New Benchmark for Future Profitability

An Infosys Consulting Perspective
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INTRODUCTION

At $2.4 trillion, the eCommerce industry continues to grow at double-digit rates and consumer demand for instant delivery continues to rise – projected to reach a market share of 25% by 2025, valued at $1.35 billion. Efficient last mile delivery improves brand perception because customers are willing to pay a premium for instant and more frequent deliveries, and businesses must constantly innovate to meet their expectations.

In this environment, efficient last mile delivery makes the difference between a successful and an unsuccessful brand and drives profit margins.

- $1.35B projected market share of instant delivery by 2025.
- 25% of customers are willing to pay more for same-day delivery.
- 55% of customers will switch to another retailer/brand offering faster delivery.
- 30% of total parcel delivery cost can be reduced with efficient last mile logistics.
- 20% increase in profit margins can be achieved with a 40% savings in delivery costs.

Last mile delivery is at the doorstep of a digital and automation revolution. This paper will explore our approach for technology adoption to meet new challenges.
These trends in last mile delivery have spurred a culture of ‘Uberization’ in multiple sectors including sourcing of assets, fleets, drivers, route optimizing platforms, drones and unmanned lockers.

In the future, a network of operators will seamlessly transfer millions of parcels across the globe with real-time tracking. The advantage will come from geographical coverage, intelligent capacity booking, swiftness of sorting and dispatching operations, and placing assets closer to customers.

Some of the major trends fueling automation in the last mile industry include same day delivery expectations and any-time/any-place delivery. The challenge lies in reducing costs despite low delivery densities (e.g., rural and suburban locations). Uberization of services has opened new avenues for a collaborative partnership network to achieve these objectives.

Real-time visibility, flexibility from crowd-sourcing of operations, delivering uniform customer experience, optimization techniques and unmanned doorstep delivery will increasingly gain precedence as consumers continue to shop online with a greater fervor, buy and return products and expect high levels of service.
### Figure 1. Last Mile Delivery - Trends and Implications

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<thead>
<tr>
<th><strong>Same Day Delivery</strong></th>
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<td>• Increasingly becoming a differentiator</td>
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<td>• Needs moving closer to the customer</td>
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<td>• Demands improved fulfillment process</td>
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<tr>
<th><strong>Any Time, Any Place, Any Device</strong></th>
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<td>• Requires dynamic routing algorithm</td>
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<td>• Demands forecasting to anticipate shipments</td>
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<th><strong>Innovation to Reduce Cost Per Drop</strong></th>
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<tr>
<td>• Uberization of logistics - on demand</td>
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<tr>
<td>• Driver-less/guided/drone-based last mile transportation</td>
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<td>• Cluster-based automated route plans - achieve high drop density</td>
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<th><strong>Shared Economy</strong></th>
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<td>• Switch from own to integrated partner networks</td>
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<tr>
<td>• Crowd sourcing and uberization of assets/drivers</td>
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<tr>
<td>• Necessitates single view of demand across integrated network</td>
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<tr>
<td>• Orchestration based on real-time insights</td>
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*Source: Infosys Consulting*
Customer expectations around last mile delivery pose a range of industry challenges.

Customer dissatisfaction arises from unfulfilled and new expectations such as instant delivery at lower costs. These lead to a new spectrum of challenges for the industry.

**Figure 2: Challenges in Last Mile Deliveries**

72% Amazon is leading the way in setting high consumer expectations around delivery, with the ability to provide one-day delivery to 72% of the American population.

*Source: CNBC.com*
Customer dissatisfaction with brands increasingly revolves around delivery frustration. The dominance of Amazon and their ability to offer free shipping to members, as well as one-day delivery to 72% of the US population, has established high consumer expectations around getting their orders cheaply and quickly. Consumers now chafe at high delivery costs, the lack of same-day delivery, late deliveries and hassle with return pickups. These expectations and frustrations in turn cause new industry challenges as companies work to meet the demands.

Challenges around delivery density cost-per-drop, efficiently managing route dynamics, ensuring in-transit quality, and meeting fulfillment timelines are all issues that companies are increasingly facing. Yet, companies must figure out how to absorb the increased costs and logistics associated with consumer expectations in order to preserve their brand’s integrity or risk losing customers — and revenue — to companies that are prepared and able to meet these challenges.

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THE FUTURE STATE OF LAST MILE DELIVERY

Smart warehouses, intelligent transport management, sorting and delivery options with real-time communications and leveraged AI are the future.

By achieving a 40% savings in delivery costs, companies can increase profits by 20%. The opportunity to cut these costs exists thanks in large part to emerging technology for last mile logistics. From better management and software, to better delivery methods designed to decrease cost-per-drop, the future state of last mile delivery is beginning to crystallize.

**Future State Considerations**

Same day delivery commitments will require intelligent tools and automation, starting with Smart Warehouses that will increasingly use AR, VR, robotics, wearables and IOT to drive last mile logistics. Intelligent transport management systems will be the critical second step, relying on a use of highly collaborative logistics networks with secure, automated information sharing characterized by the Uberization of assets and resources, dynamic route optimizers, digitized product identifiers, and IOT to ensure traceability, safety and authenticity. Sorting and delivery modes determined by the TMS will be governed by economics and take into account drop density and urgency for each delivery. Finally, the whole system will be underpinned and driven by big data and AI, dynamically assessing consumer sentiment, personalizing services and real-time notifications.

Figure 3, below, illustrates the potential future state that companies should be striving towards to please and retain customers, and directly impact their bottomline.
Figure 3: Future State of Last Mile Deliveries

- **Master DC/Smart Warehouses**: Embracing intelligent tools and automation
- **Material Handling & Movement**: Robotics, Smart Wearables, Exoskeletons
- **Documentation & Processing**: Natural Language Processing
- **Shipments Tracking**: Internet of Things
- **Inventory Management**: Augmented Reality

**Intelligent Transport Management**: Establish highly-connected partner cloud

**Traceability Solution**

**Route Optimizers**

**Digital Product Identifiers and Sensors**

**Integrated Logistics Solutions**

**Partner Cloud**

**Regular**
- 50% of volume

**Same-day Window**
- 35% of volume

**Instant**
- 15% of volume

**B2B + eGrocery**

**Authentic Brands**

**Same-day Free Delivery**

**Quick Returns**

**Big Data Analytics**

The system is underpinned and driven by big data and analytics which are assessing consumer sentiment, personalizing services and providing real-time notifications.
So, do these solutions work in every scenario? One of the KPIs in last mile logistics is ‘cost per drop.’ To manage this cost, carriers, shippers, and middlemen will collaborate and operate as a network in an attempt to improve load efficiencies, especially in a B2B set-up.

**Figure 4: Using Technology to Optimize B2C Speed of Delivery**

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<th>Delivery Type</th>
<th>B2C</th>
<th>B2B</th>
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<td></td>
<td>Regular Deliveries</td>
<td>High Reliability</td>
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<td>Rural (Low drop density)</td>
<td>Drones</td>
<td>Economics Do Not Justify</td>
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<tr>
<td>Urban (High drop density)</td>
<td>AVGs with Lockers</td>
<td>Droids or Bike Couriers</td>
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Note: Adoption of technology is governed by availability and cost of labor.

*Source: Infosys Consulting*

The march towards reducing cost per drop along side optimizing speed of delivery will increasingly spur uberization of services and development of marketplace platforms that connect all operators in the value chain (Figure 5). Such platforms would ensure transparency and real-time relay of information based on demand and supply realities.
### Figure 5: Value Chain Leading to Efficient Last Mile Delivery

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<tr>
<th>Carriers</th>
<th>Shipper/Requester</th>
<th>Customers</th>
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| • Reviews the average spot market rates for paid and posted offers  
• Has better clarity on densities on balance of loads picking up/dropping off  
• Able to provide higher loads to truck ratio, giving them better negotiation powers | • Requests shipping loads based on competitive rates and assurance of timely delivery  
• Connects with carrier partners seamlessly to coordinate the planning and execution of shipping  
• Uses predictive and prescriptive analytics on load and capacity for dynamic allocation | • Can raise shipping requests through the marketplace platform  
• Receives competitive rates because of economies of scale  
• Has access to better last mile delivery due to marketplace platform partner |
| **Brokers** | **Shipper/Requester** | **Carriers** |
| • Uses leads and networks to optimize the marketplace  
• Coordinates and facilitates the matching of demand and supply of trucks  
• Uses predictive and prescriptive analytics on load and capacity for dynamic allocation | | }
CONCLUSION

Consumers are increasingly reliant on free, almost-instant delivery of their goods. Expectations set by retailers around both cost and speed of delivery has upped the ante for all eCommerce companies. By leveraging emerging technologies, big data and analytics, and the Uberization of services, companies have the opportunity to gain necessary efficiencies in the last mile of delivery. Creating a comprehensive roadmap to a viable future state of last mile logistics is critical to satisfying customers while protecting the bottomline impact of faster deliveries.

As a partner, Infosys Consulting can help to establish the vision, strategy and the technology roadmap required for an integrated last mile delivery platform for every scenario.
MEET THE EXPERTS

HARISH GUDI
Partner & Head of Global Delivery Organization

Harish has been with the Infosys for over 19 years in various roles in delivery leadership, sales and consulting. He joined the Infosys Consulting team 6 years ago and currently heads our global delivery organization, managing top clients such as Adidas, Reckitt Benckiser, PepsiCo, Citibank and Syngenta. Before joining the firm, he spent a few years with a startup analytics company called Mu-Sigma. He is a seasoned veteran in the technology space and is a regular contributor to the firm’s thought-leadership channels.

MAHESH BUKKAPATNA
Associate Partner, Consumer Goods & Logistics Practice

Mahesh has been with Infosys Consulting 13 of his 20 years in the industry. He is an expert in retail business transformations and heads our CPG and Retail division in India. Mahesh’s rich consulting and automation experience has helped him define go to market strategies for a number of important clients.

JAYANTA BANERJEE
Senior Principal, Retail, Consumer Goods & Logistics Practice

Jayanta has more than 20 years of advisory experience. He has working industry experience in managing omni-channel and diverse retail businesses, and managed large-scale transformation programs. Jayanta has worked across a diverse set of roles, including functional lead, product manager, business architect and program management. He is the lead author of this report.
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For more information, contact consulting@infosys.com