



*E-commerce
company*

SPARKATHON SOLUTION PROPOSAL

In today's retail logistics, accidents involving delivery vehicles cause critical delays, product damage, and most importantly — pose serious risks to drivers' safety.



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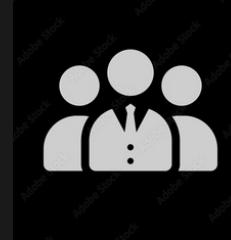
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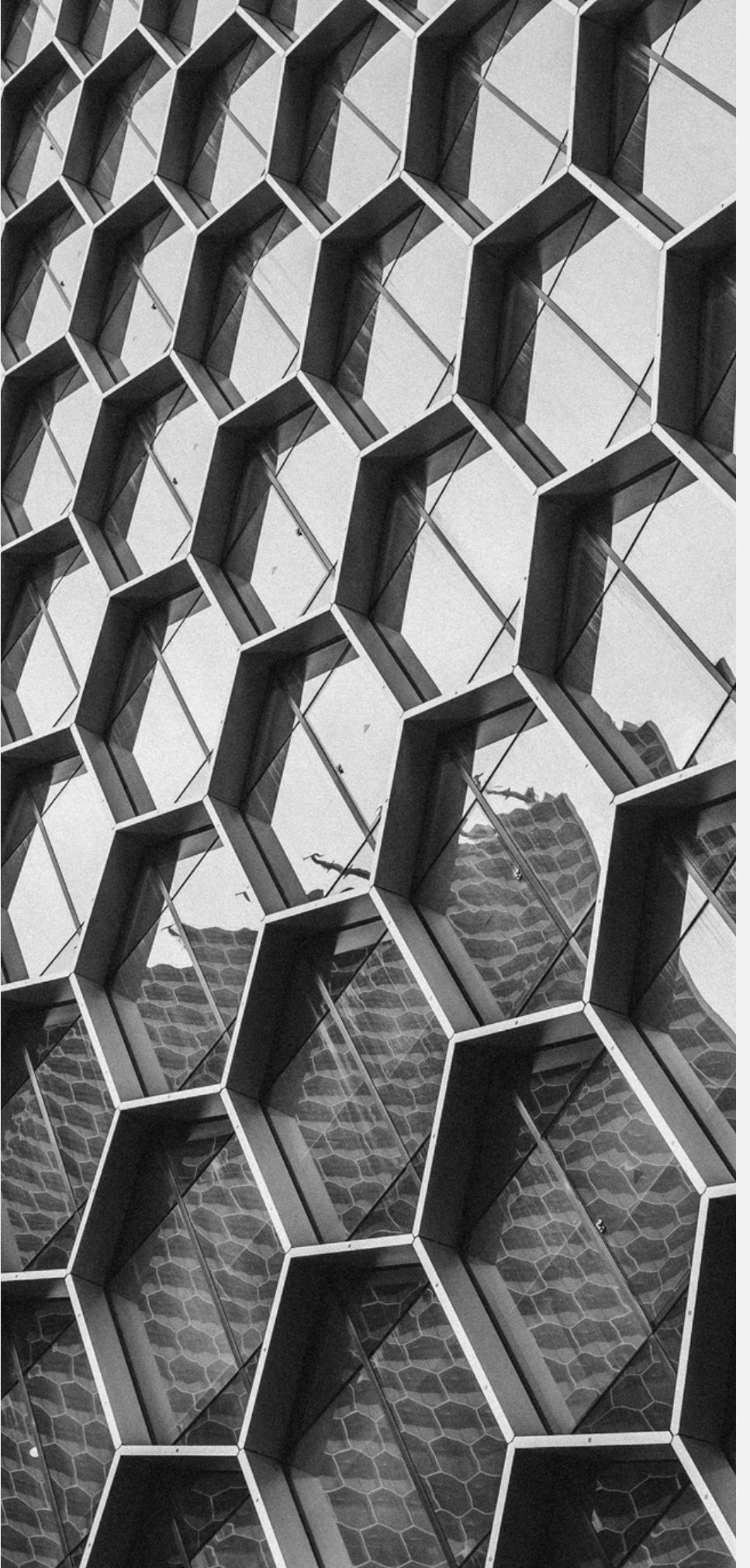
ABOUT US



We are '**LogiGuardians**', tech enthusiasts driven by a shared goal — to tackle real-world challenges using innovation, data, and empathy.



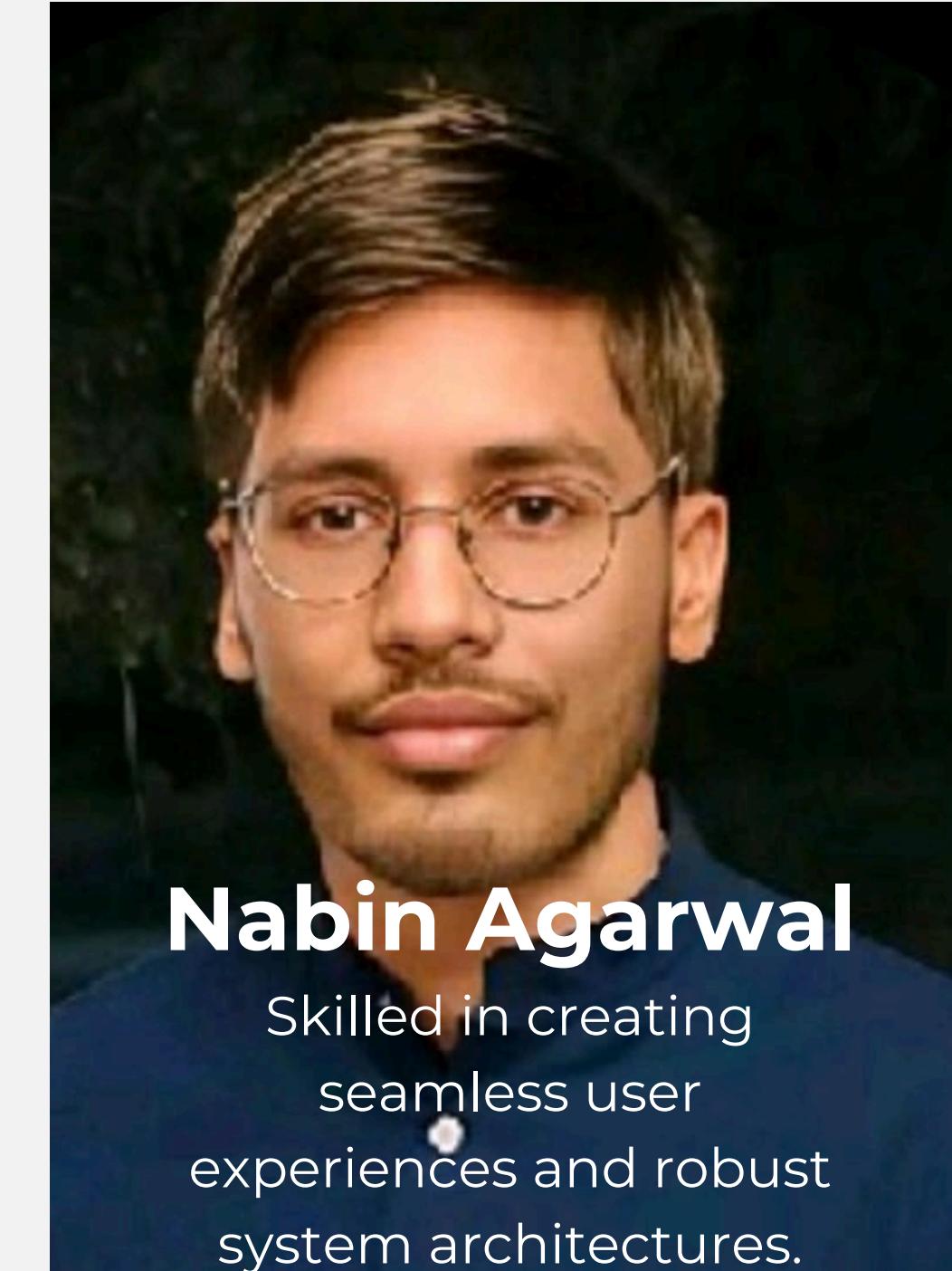
With a deep understanding of logistics, AI, and human-centered design, we bring together diverse skill sets to approach one of the most overlooked issues in the ecosystem.



OUR TEAM



Aman Singh
Passionate about AI,
with a focus on real-
world applications in
safety and automation.



Nabin Agarwal
Skilled in creating
seamless user
experiences and robust
system architectures.



Transforming retail supply chains

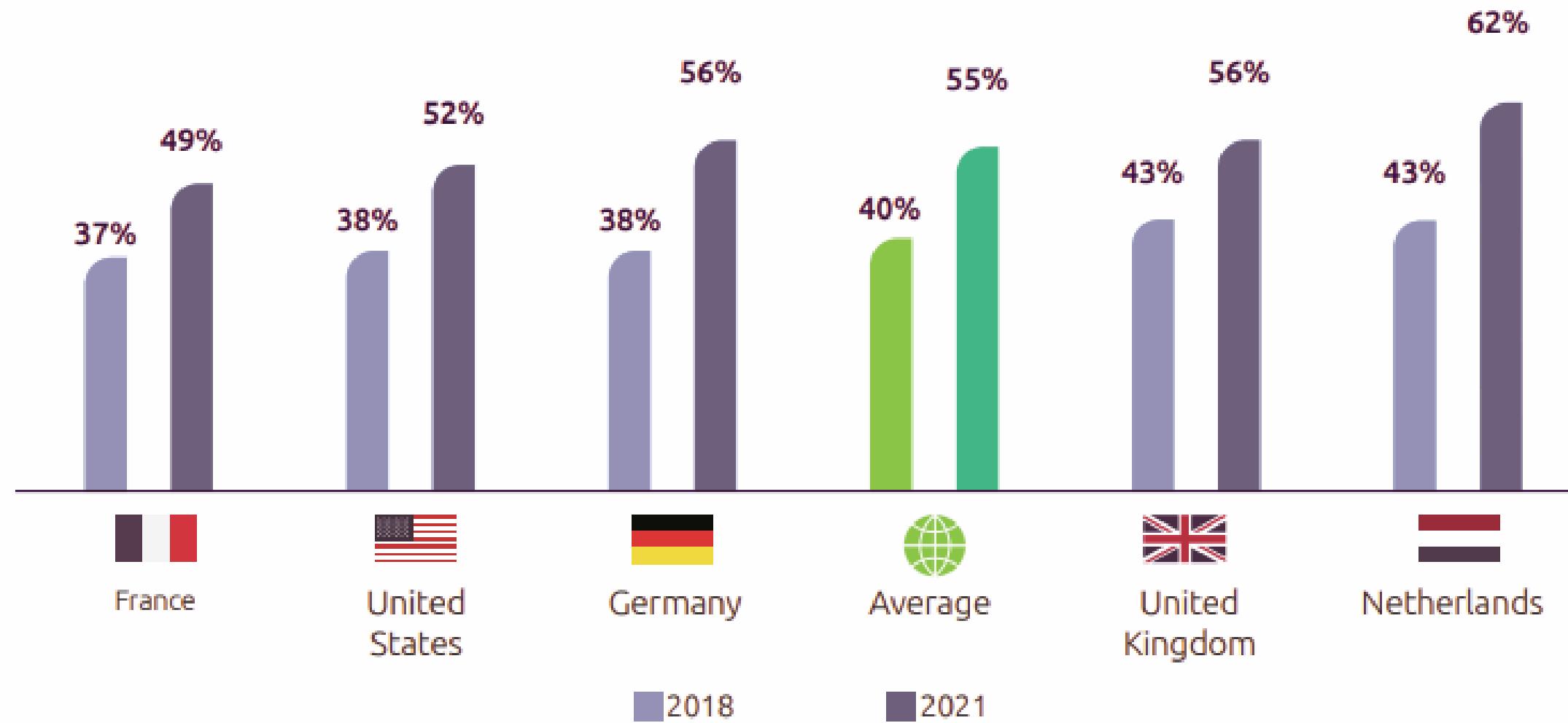
OPTED THEME

Team committed to transforming retail supply chains by leveraging technology, data-driven insights, and human-centered thinking. We believe the future of retail lies in creating systems that are not just smart — but also safe, responsive, and resilient.

GROWING PRESSURE ON DELIVERY SYSTEMS

Last-mile becomes even more crucial as consumer adoption of delivery services is set to grow rapidly in the next three years.

Share of consumers receiving deliveries once a week or more from grocery retailers

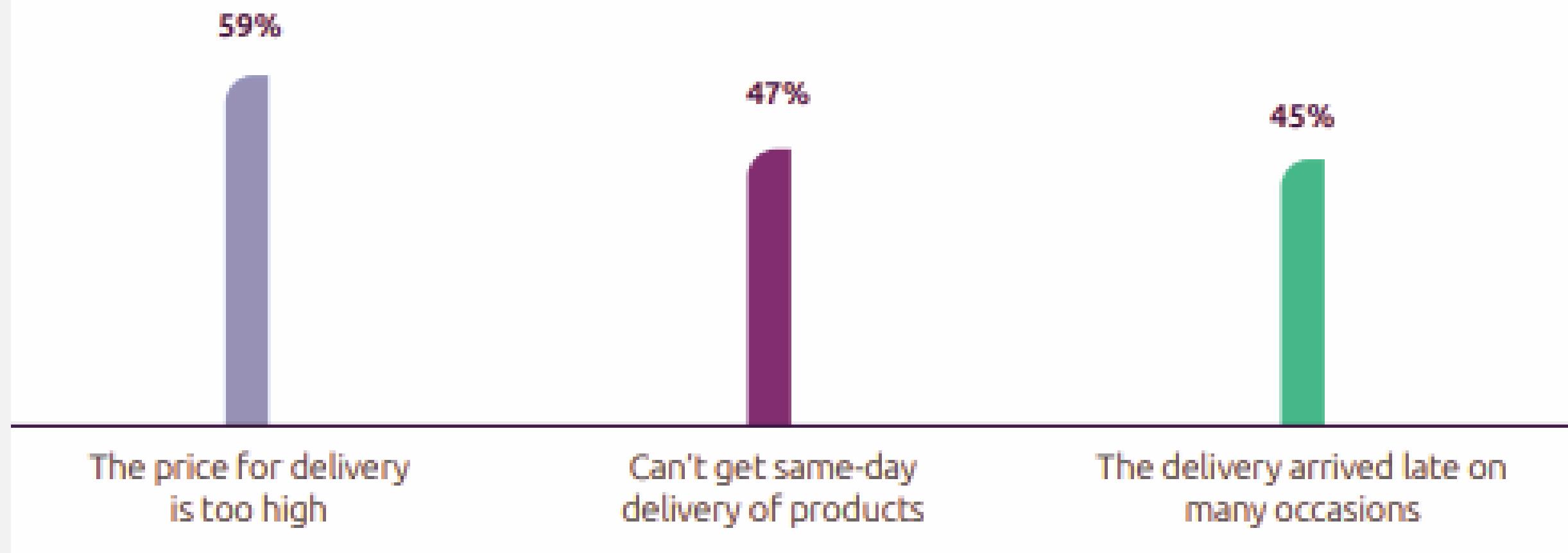


Rising expectations: 55% of users prefer faster delivery. Demand is surging.
(Source: Capgemini Research)

CONSUMERS ARE NOT SATISFIED WITH THE CURRENT STATE OF LAST-MILE DELIVERY

Consumer dissatisfaction with delivery services stems from price, lack of same-day, and on-time delivery.

Consumers will not recommend delivery services of retailers because ...



Source: Capgemini Research Institute, Last-mile delivery consumer survey, October–November 2018, N=2,874 consumers.

THE UNTOUCHED RISK IN LAST-MILE DELIVERY

Based on the road accident statistics provided by the Ministry of Road Transport and Highways (MORTH) in 2022, there is a 12.8 % increase in HCV accidents (i.e., 13,619) from that of the previous year 2021 (MORTH, 2022). Hence, improving the safety of HCVs is a serious concern faced by researchers throughout India.

Accidents increase costs, delay deliveries, and jeopardize driver safety.
(Source: MORTH 2022)

PROBLEM STATEMENT

“In the fast-paced world of retail logistics, last-mile delivery is often the most unpredictable and vulnerable part of the supply chain. Despite advancements in route optimization and vehicle tracking, real-time visibility into delivery vehicle safety remains a critical blind spot.”

Key Problems We're Solving:

- Delivery vehicle accidents are not detected in real time.
- These lead to:
 - Delays
 - Increased operational costs
 - Driver safety risks
 - Customer dissatisfaction.
- Lack of automated incident reporting.
- Poor situational awareness for logistics teams.

WHY THIS BLIND SPOT MUST BE FIXED

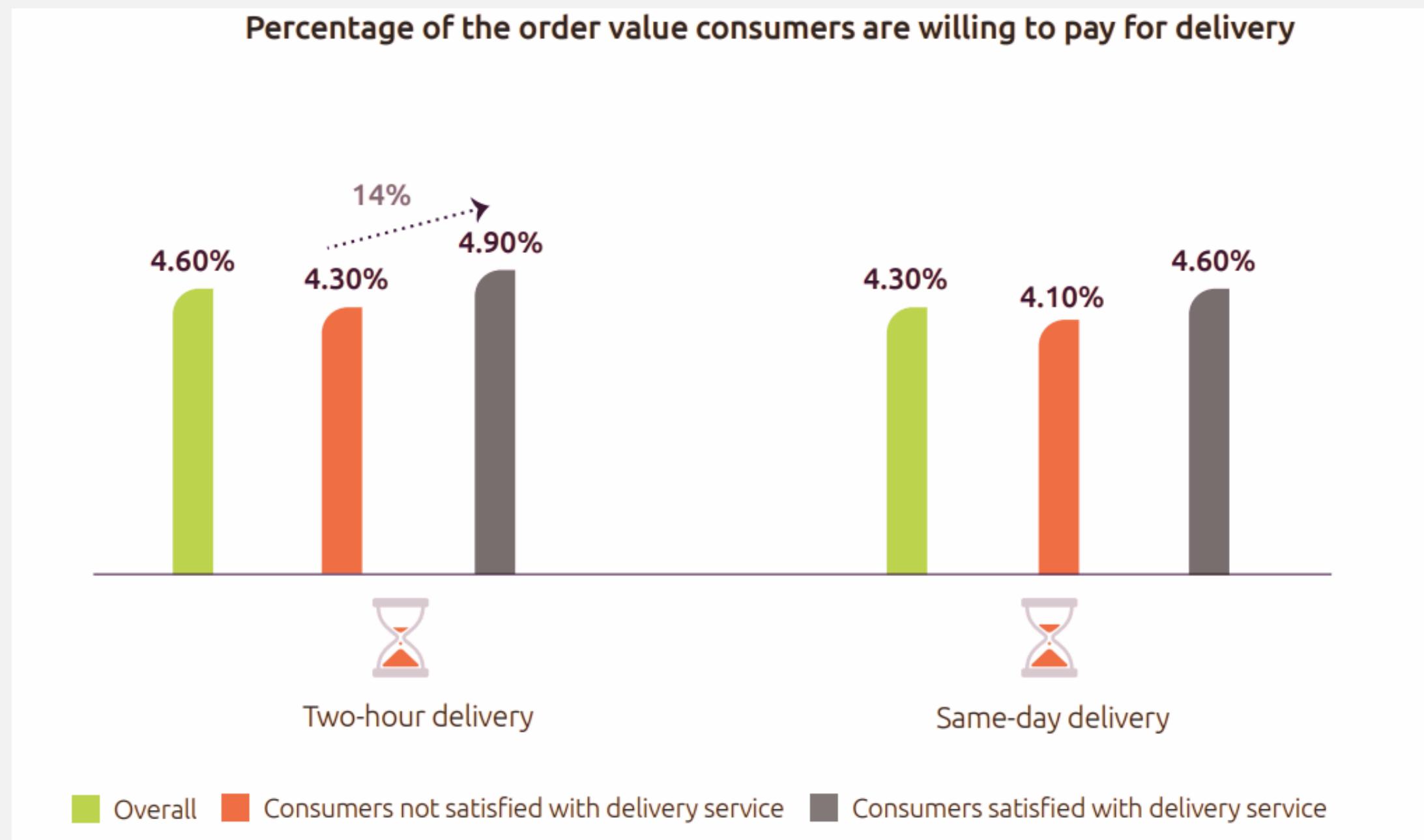
The benefits case for great last-mile delivery is not limited to endorsement. We found that great service delivers significant hard benefits, and that poor service comes at a high cost.

Satisfied customers	Dissatisfied customers
 <ul style="list-style-type: none">• 74% intend to increase purchase levels by 12% with their preferred retailer• 53% would be willing to purchase a paid membership for delivery services.	 <ul style="list-style-type: none">• 48% intend to stop purchasing from the poor-performing retailer• Those who will continue to shop at the poor-performing retailer plan to reduce their spend by 45%.

55% of consumers say that a two-hour delivery option would increase their loyalty, yet only 19% of firms offer two-hour or faster delivery.
(Source: Capgemini Research)

OPPORTUNITY WINDOW FOR RETAIL INNOVATION

Satisfied consumers are willing to pay higher delivery charges for fast delivery.



Source: Capgemini Research Institute, Last-mile delivery consumer survey, October–November 2018, N=2,874 consumers; Capgemini Research Institute, Last-mile delivery executive survey, October–November 2018, N=500 executives.

OUR SOLUTION

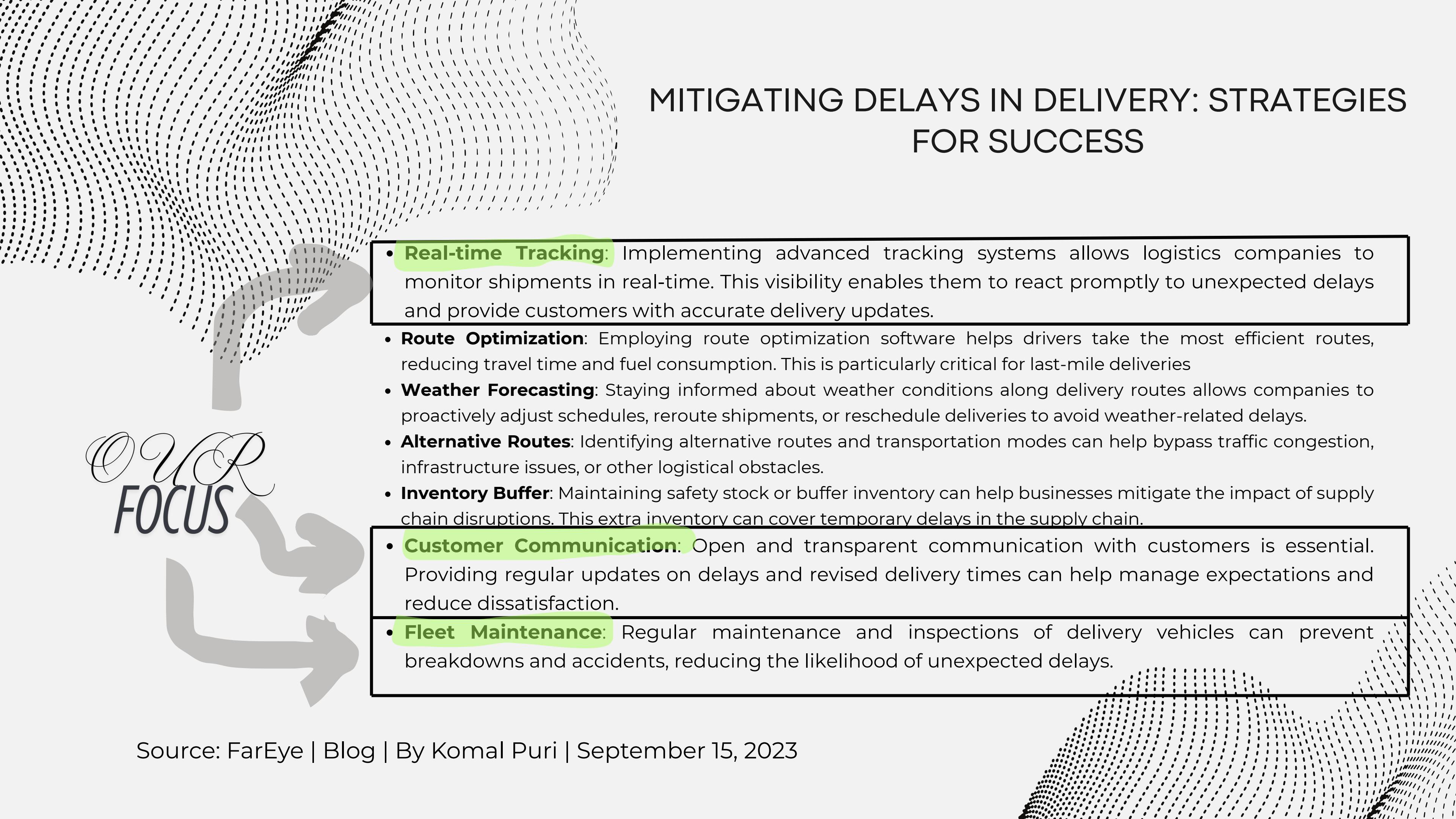
| Real-Time Accident Detection – A Missing Link

TOP 8 REASONS FOR LATE DELIVERY

- **Traffic Congestion:** In urban areas or during peak hours, traffic congestion can bring delivery vehicles to a standstill. This not only leads to late delivery but can also impact fuel efficiency and driver schedules.
- **Weather Conditions:** Adverse weather, such as heavy rain, snowstorms, or hurricanes, can disrupt transportation networks. Roads may become impassable, and flights might be grounded, causing significant delays.
- **Supply Chain Disruptions:** Delays in the manufacturing or procurement process can have a ripple effect on the entire supply chain. Late shipments from suppliers can lead to delays in outbound deliveries.
- **Infrastructure Issues:** Problems with transportation infrastructure, such as bridge closures, road repairs, or port congestion, can hinder the movement of goods.
- **Customs and Regulatory Holdups:** International shipments often face late delivery due to customs inspections, documentation errors, or changes in import/export regulations.
- **Vehicle Breakdowns:** Mechanical failures or accidents involving delivery vehicles can disrupt schedules and lead to delays.
- **Driver Shortages:** The logistics industry frequently experiences driver shortages, which can result in delays as companies struggle to meet demand with limited resources.
- **Incorrect Addresses:** Incorrect or incomplete delivery addresses can lead to confusion, requiring additional time to reroute shipments.

THE IMPLICATIONS OF DELIVERY DELAYS

- **Customer Dissatisfaction:** For businesses, delivering on time is often a key factor in customer satisfaction. Late delivery can lead to unhappy customers, negative reviews, and even loss of future business.
- **Operational Disruptions:** Delayed shipments can disrupt a company's internal operations. Manufacturers may face production slowdowns, and retailers may struggle to manage inventory effectively.
- **Increased Costs:** Logistics companies may incur additional costs due to delays, such as overtime wages for drivers, expedited shipping charges, or penalties for missing delivery windows.
- **Reputation Damage:** Consistent delivery delays can damage a company's reputation and erode trust with customers.
- **Lost Sales Opportunities:** In the e-commerce world, delayed deliveries can result in abandoned shopping carts, lost sales, and missed revenue opportunities.



MITIGATING DELAYS IN DELIVERY: STRATEGIES FOR SUCCESS

- **Real-time Tracking:** Implementing advanced tracking systems allows logistics companies to monitor shipments in real-time. This visibility enables them to react promptly to unexpected delays and provide customers with accurate delivery updates.
- **Route Optimization:** Employing route optimization software helps drivers take the most efficient routes, reducing travel time and fuel consumption. This is particularly critical for last-mile deliveries.
- **Weather Forecasting:** Staying informed about weather conditions along delivery routes allows companies to proactively adjust schedules, reroute shipments, or reschedule deliveries to avoid weather-related delays.
- **Alternative Routes:** Identifying alternative routes and transportation modes can help bypass traffic congestion, infrastructure issues, or other logistical obstacles.
- **Inventory Buffer:** Maintaining safety stock or buffer inventory can help businesses mitigate the impact of supply chain disruptions. This extra inventory can cover temporary delays in the supply chain.
- **Customer Communication:** Open and transparent communication with customers is essential. Providing regular updates on delays and revised delivery times can help manage expectations and reduce dissatisfaction.
- **Fleet Maintenance:** Regular maintenance and inspections of delivery vehicles can prevent breakdowns and accidents, reducing the likelihood of unexpected delays.

STRATEGY

Making Retail Logistics Safer, Smarter, and Swifter

1. Vehicle Registration via App: Each delivery vehicle is registered on our platform using a secure fleet management dashboard.

2. Real-Time Accident Monitoring:

- A camera mounted inside the delivery vehicle continuously monitors driver posture and road visuals.
- Our AI model runs locally and detects accidents instantly using computer vision and motion cues.

3. Automated Emergency Notification: Upon accident detection, instant alerts are triggered.

- ⚡ Location data sent to the logistics HQ
- ☎ Emergency services auto-notified



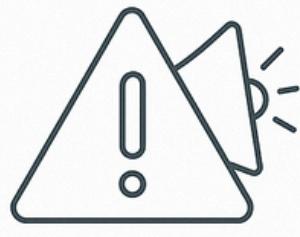
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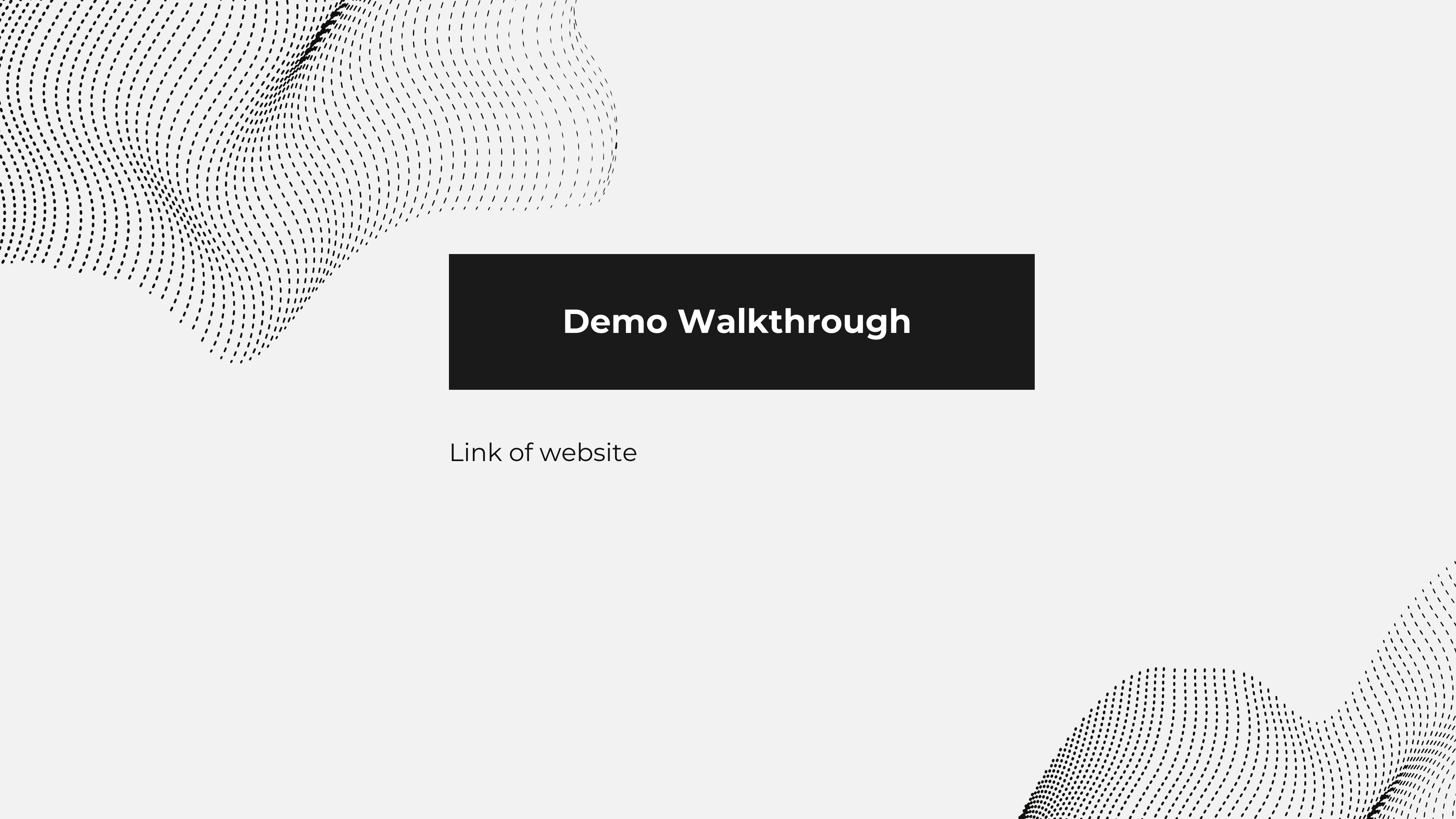


2. Real-Time Accident Monitoring

A camera monitors the vehicle in real



Automated Emergency Notification



Demo Walkthrough

Link of website

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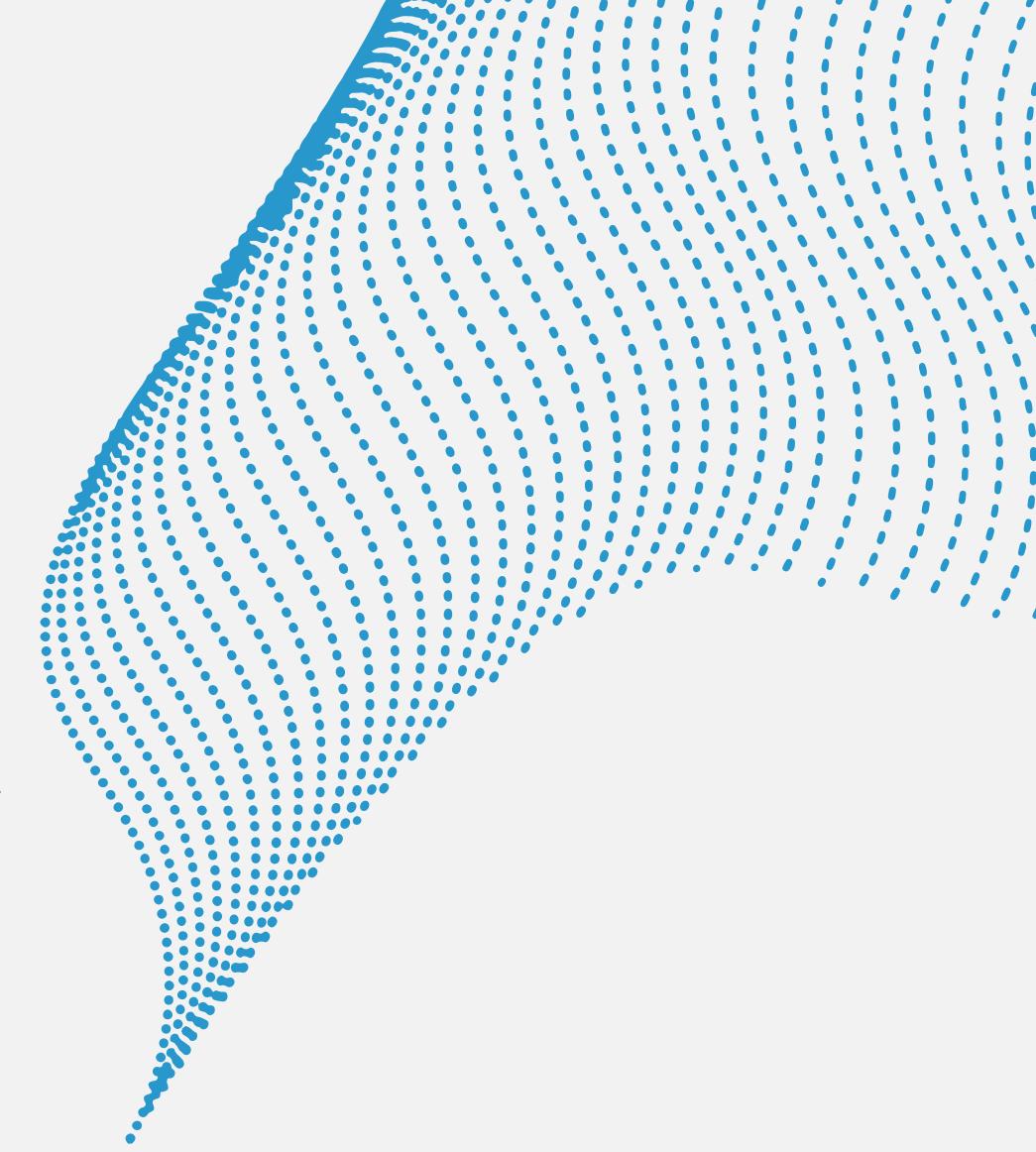
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THANK'S FOR WATCHING



"In a world where delivery speed defines loyalty, safety must come first."

Our solution bridges this gap by delivering trust at every mile.



Built for Walmart Sparkathon



Powered by innovation, safety, and real-time intelligence