Debugging Sustainability:

How Testing Makes Retail Greener!



Why Sustainability Matters in Retail

Retail Industry - ~25% contributor to carbon emissions

Clothing Retail industry = ~10% of global CO₂ emissions Untapped potential for sustainability improvements

Focus on operational, fulfillment & Customer touchpoints

Digital innovations to reduce paper, emissions, and waste



The global environmental impact

Paper Receipts & Shelf labels

- 3 trillion paper receipts globally/year = ~50 million trees, ~10 billion gal water
- U.S generates 1.5 billion lbs of receipt waste
- UK around 11.2 billion receipts
- Receipt production is responsible for: **334 million** lbs of waste

Delivery & Shipment

- ~19 million tonnes CO₂ in the world's top 100 cities
- CO₂ emission equal to burning **4.5 billion** lbs of coal or **~2.05 million** cars per year
- Post-pandemic emissions boosted by 25%, contributing ~100 million tonnes CO₂

Split Shipments & Multiple-Box

- Faster delivery and smaller parcels = Emissions comparable to **7 million cars**
- Parcel volume rose from **315 billion** in 2022 to projected **800 billion** parcels by 2030



Key Areas Driving Green Retail

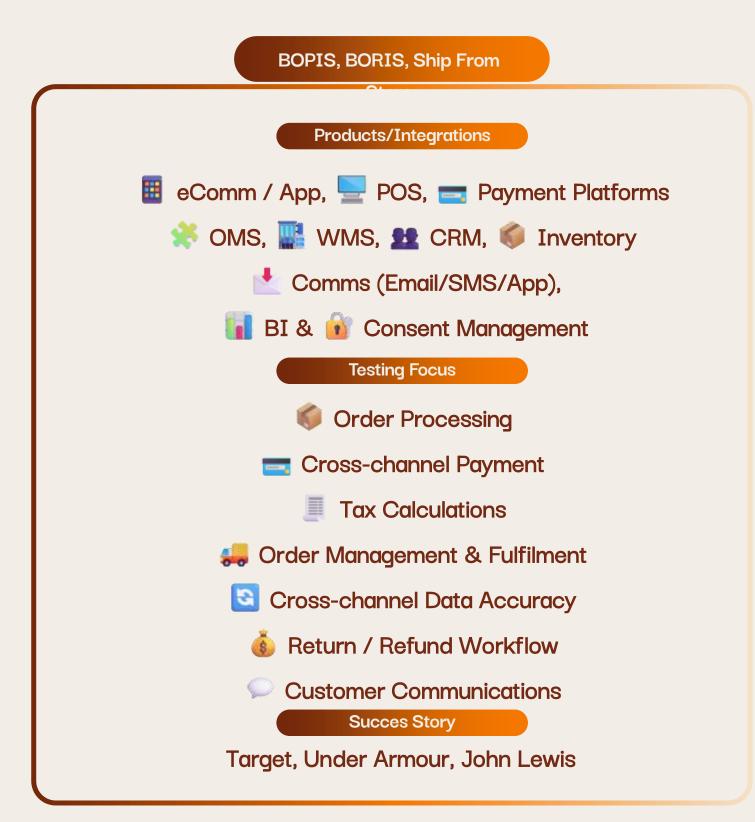
- Digital Receipts
- 2 Electronic Shelf Labels
- 3 Smart Fulfillment / Returns (BOPIS, BORIS, Ship From Store)
- Reduced Returns via Recommended Sizing
- Consolidated Shipments & Delivery Optimization

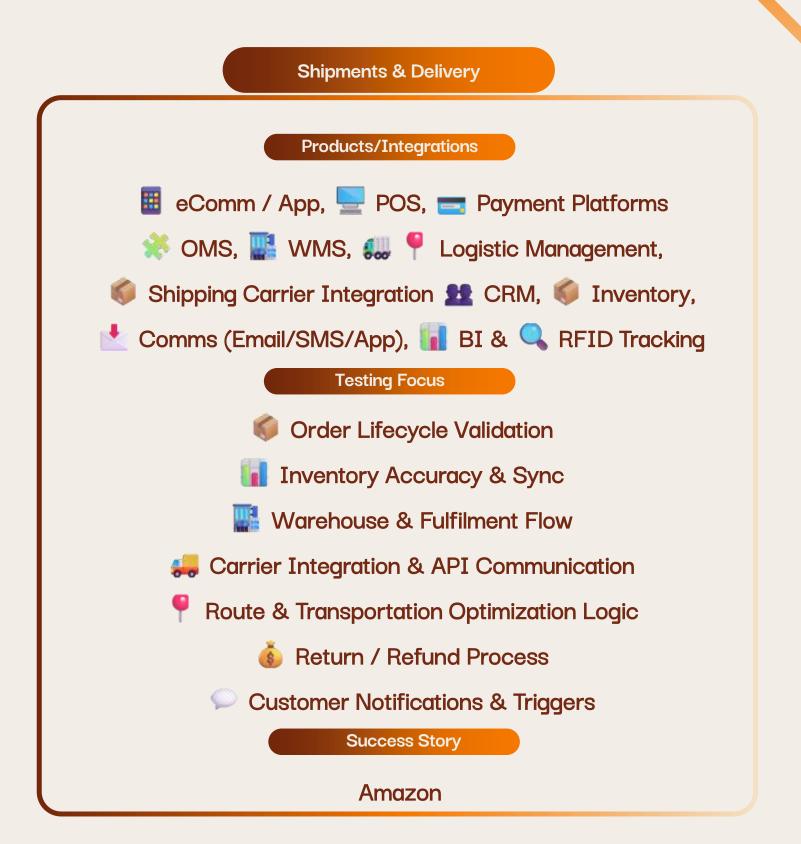
Deep Dive into Sustainability Initiatives





Deep Dive into Sustainability Initiatives





Why Testing is Non-Negotiable in Retail Sustainability

Sustainability without precision can backfire: poor adoption, wasted resources, greenwashing risks.

Every initiative must be tested for:



Audience alignment



Data accuracy



Data integrity



Operational quality



Regulatory Compliance



Environmental impact



Data-driven insights & Reporting accuracy







European Testing Awards - Testing Champion of the year Finalist

Quality Engineering Enthusiast, Mentor,

Key Highlights

- Founder of The QE Hub: Driving Innovation, Excellence, and Collaboration in Quality Engineering in Retail
- Versatile and High-Energy Technocrat with 18+ years of experience
- Proven Track Record in Large-Scale Transformations

Geo-Domain Experience

- 14 Years in the UK Market: With organisations Experian, Under Armour, Walgreens Boots Alliance, Harrods, NBrown Group, UST, G10X.
- 13 Years in Retail and eCommerce
- 5+ Years in Financial Services with Experian UK

Certifications

- ISTQB Advanced Level Test Manager
- ISTQB Advanced Level Test Analyst
- ISTQB Foundation Level
- CSTE Certified Test Professional
- PRINCE2 Practitioner
- AWS Cloud Practitioner
- Salesforce AI Associate



Thank You!







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