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eBook

The Luxury 4.0 Operating Model

How Traceability Technology is Changing the Luxury Retail Supply Chain.

Introduction

The sale of high-end goods is a $354 billion market with a projected 3.38% annual growth rate.

Luxury buyers are in it for the quality, the experience and the exclusivity.

Market Snapshot

The market's largest segment is Luxury Fashion, with a market volume of US $111.50 billion in 2023.

In global comparison, most revenue is generated in the United States (US$75,690.00 million in 2023).

In the Luxury Goods market, 13.9% of total revenue will be generated through online sales by 2023.

Tactics like high price points, limited sales volumes and limited sales outlets sustain and propel this industry.

Technology plays a leading role in the evolution of luxury retail.

This eBook from Mojix will unpack how traceability technology is at the forefront of a changing industry and illustrate the inventive ways luxury producers and retailers leverage technology to support increasingly sophisticated supply chain operations.

The Five Dimensions of Luxury Retail

Luxury retailers are often evaluated against five defined dimensions:

1. Customer perception of high-quality

2. Authentic value

3. Prestigious craftsmanship or service quality

4. Premium pricing

5. Deep, inspired connections with customers

Luxury retailers go to great lengths to perform well in these five dimensions.

Let's use the language employed by legacy fashion houses to illustrate how they seek to meet these five criteria:

1 **Customer perception of high-quality**

"Hans Wilsdorf, founder of the company, instilled a notion of perpetual excellence."

Rolex

2 **Authentic value**

"Quality is a pillar of LVMH's success."

LVMH (Louis Vuitton)

3 **Prestigious craftsmanship or service quality**

"Gucci forges ahead continuing to redefine luxury while celebrating creativity, Italian craftsmanship, and innovation."

Gucci

4 **Premium pricing**

"Pearls and diamonds casually paired with iconic perfumes have created a signature style."

Chanel

5 **Deep, inspired connections with customers**

"The objects are designed to be durable and to adapt to changing lifestyles."

Hermes

The unique brand-to-buyer connection in this industry raises the stakes for brands to consistently align with the five principles against which they are judged.

A primary way that is being supported today is through traceability technology.

Traceability Technology in Luxury Retail

"Traceability systems powered by tracking software and Big Data will help brands reach far into their supply chains to understand the entire lifecycle of their products."

Business of Fashion Team; McKinsey & Company Report

Traceability

is tracking an item's development and movement through the supply chain.

Technology

is reshaping supply chain management in luxury retail, unlocking source to shelf visibility.

Raw Materials

Luxury goods are made from premium materials, which start in raw form.

Leather, precious metals, fine fabrics and gemstones used in luxury goods are sourced globally. Verifying a product's provenance is vital to retaining its elite status. Tracing source materials is also imperative to comply with various regulations and ethical imperatives, such as the US Forced Labor Ban (2022) and the EU Deforestation Regulation (2023).
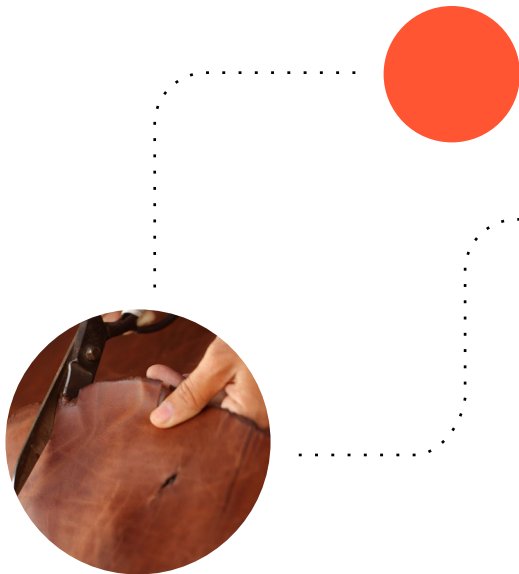
Raw materials tracing technology

Radio Frequency Identification (RFID) technology uses tags and readers to provide wireless raw material location tracking.

Raw materials tracing benefits

- Substantiate product claims about the material composition of a product

- Support fiber forward models

- Make the chain of custody visible

- Quantify waste and environmental impact

Production

Luxury goods are crafted, not just produced. Technology ensures visibility at this stage of a product's supply chain.
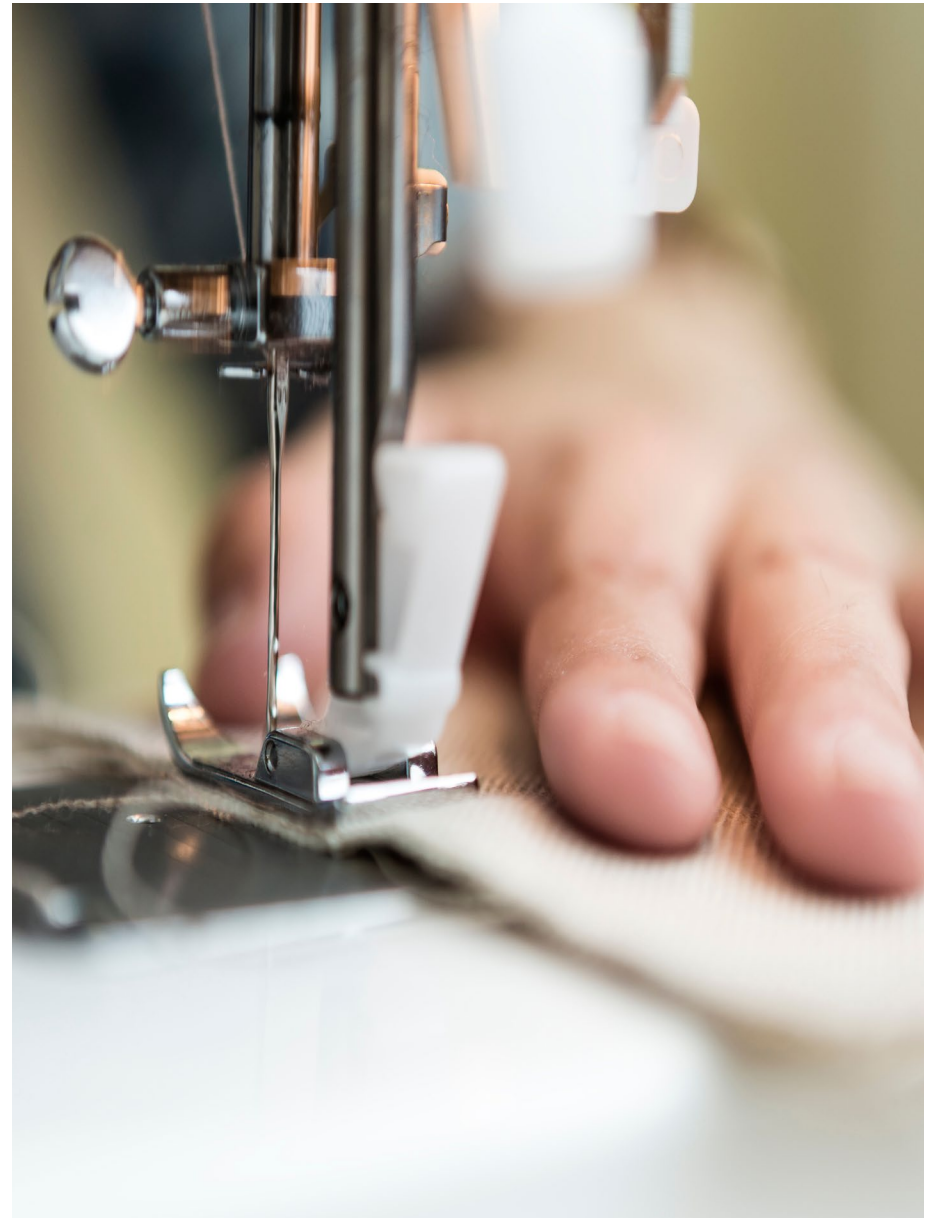
Production tracing technology

Digital ledgers and logs are a simple way to streamline tracking throughout the production process of luxury goods.

Production tracing benefits

- Log the identity of various suppliers or craftspeople involved at various stages in a product's development

- Enhance visibility into the utilization of craftspeople in terms of work hours, work product and outputs

- Provide consistent oversight

Quality Control

Quality is one of the primary reasons people buy luxury goods. Compromised quality is an enormous risk for any luxury goods producer or retailer.

Quality control tracing technology

Control systems provide instant insight into date and time records, enabling end-to-end oversight and ensuring consistency.

Quality control tracing benefits

- Immediate identification and response of subpar or defective products, ensuring they are never circulated

- Connection between any quality issues and root cause

Shipping

The increased use of uniquely sourced materials and specialized craftspeople presents logistical challenges to the movement of luxury goods.

Shipping tracing technology

The shipping industry has significantly benefited from technology over the last decade. Transportation management systems support tracking systems for ocean, land and air shipping.

Real-time item-level visibility (RTILV) is the goal, especially for costly goods making cross-country treks.

Shipping tracing benefits

- Transportation flow records

- Line of sight into any issues

- Avoiding lost shipments or freight returns

Sale

The final stage in the lifecycle of a luxury product is the point of sale.

Sales tracing technology

In-store, advanced cloud-based systems integrate point of sale software with inventory and security systems to enable accurate, real-time item-level tracking.

Sales tracing benefits

- Full product lifecycle tracking

- Accurate sale records and projections

- Loss prevention

- Returns or restock cost tracking

A Luxury 4.0 Operating Model

It's a new day, and luxury brands have more tools than ever to deliver pristine products to discerning consumers.

Technology is having a wide scale impact in four areas:

1. Authentication

2. Supply chain visibility and responsiveness

3. Sustainable sourcing and ethical practices

4. Elite customer experience

1 # Authentication: Counterfeit Prevention and Brand Protection

Trade in counterfeit and pirated goods is a lucrative endeavor. Some analysts estimate that the cost of overall pirating is close to $3 trillion and as many as 10% of branded goods on the market may be counterfeit.

Counterfeiters are increasingly savvy, which creates ongoing challenges, especially in the luxury market.

Technology for authentication and brand protection counters the pervasive nature of counterfeits.

"Most luxury and high street fashion brands are already in the process of incorporating near-field communication (NFC) or radio frequency identification (RFID) to their products, to rule out counterfeits in their value chain. Mango, Hugo Boss, Adidas, Nike, Ralph Lauren and AZ Factory, among others, have all rolled out the tech."

Source: Glossy.co

Ecosystem of Authentication and Brand Protection Market

Overt
Covert
Forensic
Digital

Technology

Electronics
Automotive
Pharmaceuticals
Food & Beverages
Others

Application

Authentication & Brand Protection

Offering

Security Labels
Security Inks
Holograms
Barcodes
Authentication Chips
RFID
Others

Authentication Mode

Smartphone Authentication
Blockchain

PRIMARY DEFENSE: RFID Tags

Radio frequency identification (RFID) tags are a primary line of defense. They are simple, relatively cost-effective and difficult to replicate. Paired with cloud-based software systems, RFID can create item-level visibility and verification.

Extra reading:
The Future of Retail: How RFID Technology is Driving Cost Efficiencies and Improving Customer Experience

ENHANCED COMMS: NFC Tags

Near-field communication (NFC) tags allow wireless communication between devices, with technology like RFID but including technology similar to Bluetooth. NFC tags are more useful for enhanced communication than straightforward inventory tracking.

CYBER DIMENSION: Digital Twins

Digital twins are replicas of physical items, processes or systems. They bridge between in-store or item-level security and cybersecurity. Digital twins could provide a layer of defense in a broader security system.

The Power of Digital Tech for Inventory Management

Researchers out of Zurich said, "Digital technologies, such as artificial intelligence-based analytics, hold the potential to substantially facilitate information processing and visibility, with regard to inventory management, forecasting, or risk assessment."

The bottom line for retailers: traceability technology combats counterfeit goods, which protects brand reputation and profits.

2 Supply Chain Visibility and Responsiveness

"In the luxury industry, logistics and supply chain management (LSCM) is crucial for business success. In this globalized scenario, luxury companies face unprecedented challenges due to not only the respective supply chain complexity but also volatility in consumer tastes and spending, shortened product life cycles, growing need for international compliance, and customer demands for sustainability and transparency."

Source: Logistics and supply chain management in the luxury industry

The luxury supply chain benefits immensely from technology when the operating model is upgraded to support the following:

Real-time monitoring and tracking

Assets in the form of luxury goods are high-ticket items. This is an industry known for long, complex supply chains, each of which can be fraught with issues. Technology that enables real-time monitoring and tracking creates quicker response times, decision-making, and the many benefits listed above.

Enhancing inventory management and demand forecasting

Innovators are currently exploring the capabilities of next-generation tech, like generative AI and similar technologies, to enhance inventory monitoring and optimization. This has the direct outcome of supporting demand forecasting, an essential tactic to get right or risk eroding margin integrity.

Reducing overstock and waste

Luxury goods designers, producers, and retailers face a unique problem: create the right amount of sellable products while satisfying consumer exclusivity demands. Visibility at every stage of the supply chain mitigates the risk of excessive waste or overstock of items that will only sell at top dollar for a single season.

Margin integrity (profitability)

According to Deloitte's annual research on the Global Powers of Luxury Goods:

"The importance of the leading luxury goods companies is clear: the 15 companies with luxury goods sales of more than US$5 billion contributed more than two-thirds of the total Top 100 luxury goods sales. The 45 companies with sales of US$1 billion or less contributed only 6.7%."

With so few companies dominating the field, preserving margin integrity or profitability is a high-stakes effort.

A KPMG study from 2022 identified seven critical findings related to the pricing power of luxury goods:

The effects of high global inflation present new challenges for luxury brands

Price plays a different role for different consumer segments

High price is no longer as effective for driving consumer desire or behavior

The efficiency of seasonal price tactics is changing

The Chinese consumer and Chinese luxury goods buyers from around the world are more price-sensitive

Millennials have a higher purchase power but are prioritizing stability, possibly decreasing impulse purchases

Entry-level luxury goods should not outprice an aspirational consumer

Navigating these and other challenges requires absolute pricing precision, seamless operationalization and ongoing organization of a wide range of data sets. That work requires expertly calibrated, rigorously monitored tracking technology.

3 Sustainable Sourcing and Ethical Practices

"...as luxury products often act as industry models, a shift towards sustainable luxury can pave the way for more sustainable mass products on a broad scope as well."

Source: Sustainable luxury: current status and perspectives for future research

The consumer demand for transparency and sustainability has never been higher.

Blockchain and other technology make tracing products from source to sale possible.

Here is an illustration of how traceability contributes to sustainable sourcing and ethical practices.

Case Study on Fiber Traceability

A case study published in MDPI on a leading fiber manufacturer illustrates the utility of these technologies:

- Lenzing AG is a leading manufacturer of sustainable and biodegradable fibers made from wood, including lyocell, modal, and viscose fibers.

- Traceability is crucial for Lenzing to protect and authenticate its innovative sustainable fibers, promote them for competitive advantage, fight counterfeiting and improve supply chain efficiency.

- Lenzing partnered with TextileGenesis (TG) to develop a blockchain-based platform for fiber-to-retail traceability.

- The TG platform uses blockchain technology and GS1 standards to track fiber shipments and production through the complex apparel supply chain.

- Digital tokens called "fibercoins" represent physical fiber units and are tracked through the supply chain. Only Lenzing can create fibercoins, providing authenticity.

- The platform mirrors physical fiber flows, capturing production details like blend ratios and waste percentages to track volumes accurately.

- Blockchain enables secure data sharing, transaction validation and immutable records to trace sustainable fibers through the apparel supply chain.

This showcases the power of blockchain, combined with IoT tracking and digital tokenization, to bring transparency and traceability to complex luxury supply chains. It helps brands authenticate and promote sustainability claims.
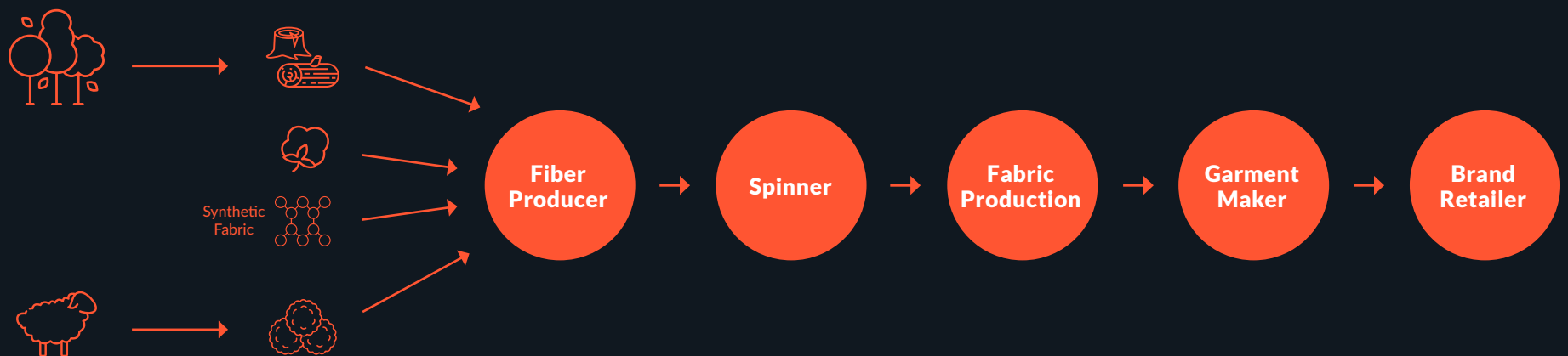
4 Supporting an Elite Customer Experience

"51% of customers would be less loyal if the online experience isn't as enjoyable as in person."

Source: PwC Customer Loyalty Survey

"Smart software solutions and innovative technologies are now the key to improving customer experiences and driving brand loyalty."

Source: The Future of Customer Experience in Luxury Retail

Digital tools and touchpoints are becoming table stakes for retailers of all kinds and luxury retailers are not immune to shifting consumer behaviors and expectations.
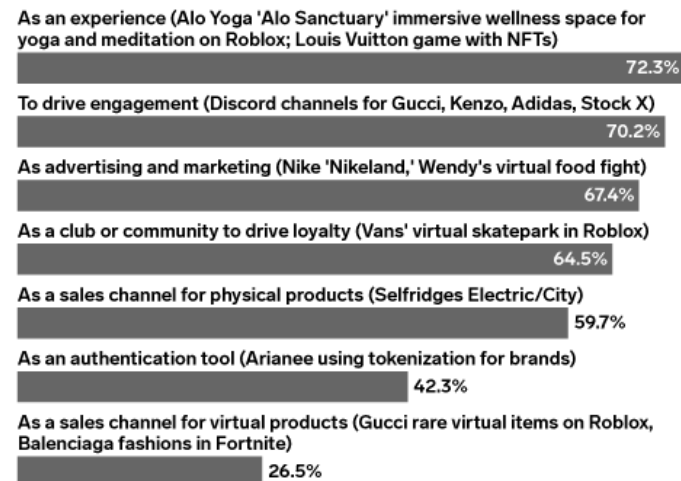
Unlike standard brands, however, eCommerce options are not the foremost consumer imperative in the luxury market.

Instead, we see increased adoption of these kinds of customer experience (CX) technologies:

Clienteling apps — Digital appointment scheduling and concierge services enable luxury buyers to access at-home try-ons, returns pickups and even AI-powered styling recommendations.

Potential US Adult Metaverse Users Who Expressed Interest in Select Metaverse Functions, Feb 2022
% of respondents

Function	%
As an experience (Alo Yoga 'Alo Sanctuary' immersive wellness space for yoga and meditation on Roblox; Louis Vuitton game with NFTs)	72.3%
To drive engagement (Discord channels for Gucci, Kenzo, Adidas, Stock X)	70.2%
As advertising and marketing (Nike 'Nikeland,' Wendy's virtual food fight)	67.4%
As a club or community to drive loyalty (Vans' virtual skatepark in Roblox)	64.5%
As a sales channel for physical products (Selfridges Electric/City)	59.7%
As an authentication tool (Arianee using tokenization for brands)	42.3%
As a sales channel for virtual products (Gucci rare virtual items on Roblox, Balenciaga fashions in Fortnite)	26.5%

Source: Colliers, "Spring 2022 US Retail Report: The Global Outlook of Luxury Retail," April 21, 2022

276920   eMarketer | InsiderIntelligence.com

Metaverse — While the metaverse has not become a staple in most retail environments, the luxury sphere continues experimenting with digital fashion through virtual reality and more.

Brand partnerships and projects — High-end fashion houses, such as Gucci, Givenchy, Louis Vuitton, and Balenciaga, have leaned into technology for its brand-boosting power. From digital apparel launches to virtual fashion projects to Roblox and Fortnite placement, they are thinking broadly about how technology will increase their appeal to upcoming generations of buyers.

Luxury 4.0 Designs the Future

At the forefront of the future of luxury retail is a sophisticated, streamlined, and tech-forward operating model.

The Luxury 4.0 operating model will leverage new technology-based capabilities for authentication, supply chain visibility, sustainability initiatives and an elite customer experience.

Mojix stands at the forefront of purpose-built luxury retail supply chain solutions.

Our products equip players at all supply chain stages with real-time item-level visibility.

About Mojix

At Mojix, we believe that companies who have access to better insights make better decisions. That's why we provide item-level intelligence for total inventory lifecycle visibility from source to shelf and farm to fork. This helps our clients improve their decision-making across the end-to-end value chain, from profitability to sustainability. Complete traceability means the possibility of optimizing your business decisions at every intersection of your supply chain. As your trusted partner, across industries, we are committed to helping you lower your cost to serve and improve cash on hand.

Learn more at mojix.com.

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