THE FUTURE OF FASHION

Tech-Driven Trends Shaping Fashion Industry

OpenI

ABOUT OPENI

OpenI is an End to End platform to build and manage your Startup Investment and Innovation Sourcing Ecosystem.

DISCLAIMER

This report aims to inform key decision-makers, investors, and industry influencers about how innovative and disruptive startups, along with their digital solutions, can address industry-specific business challenges. It is based solely on publicly available information and excludes any primary data sources. OpenI Partners makes no guarantees regarding the accuracy, completeness, or correctness of the information provided. All mentioned products, names, logos, brands, and product images are the property of their respective owners and are used solely for identification purposes. The insights, analysis, and conclusions presented are for informational purposes only and should not be relied upon as the sole basis for decision-making. Readers are encouraged to verify the information independently and exercise their own judgment.

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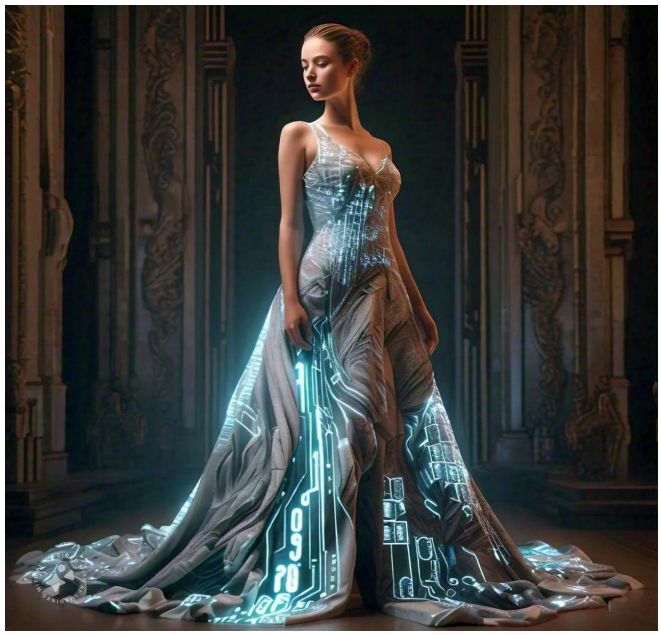
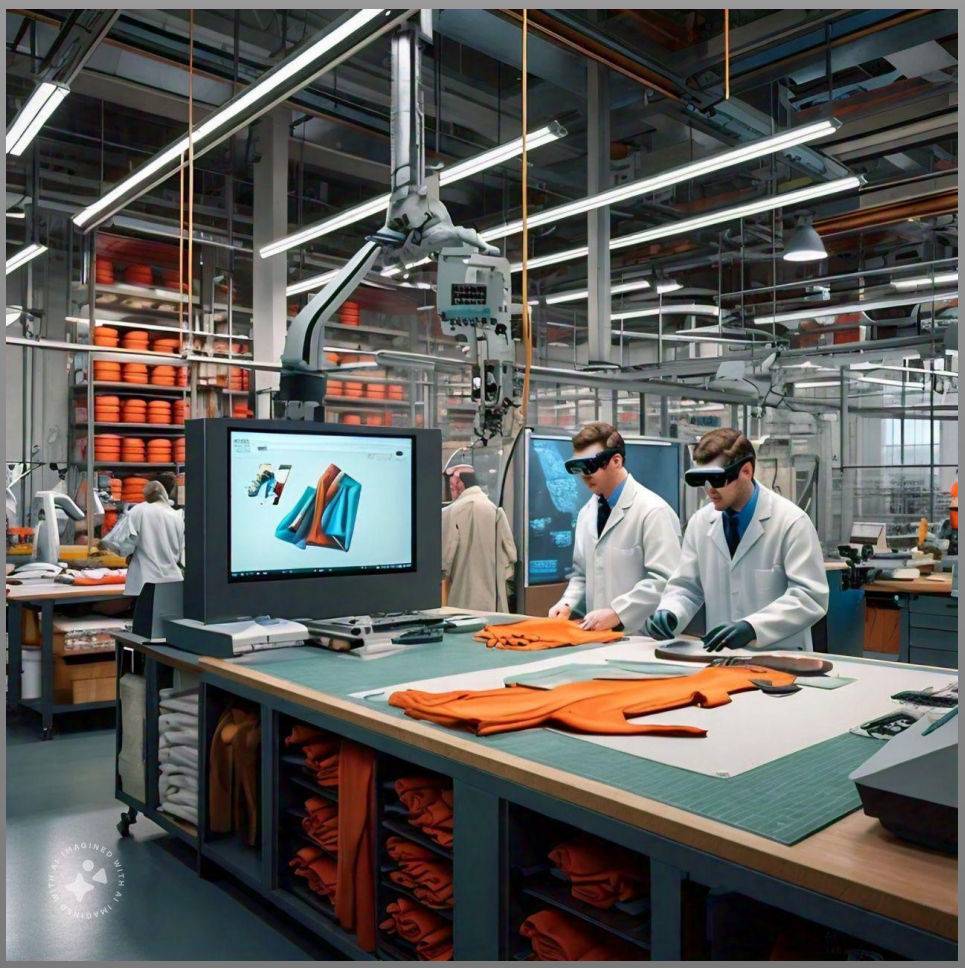


The fashion industry is undergoing rapid transformation, driven by sustainability and digital innovation. Innovations in materials and technology are revolutionising design, production, and consumption patterns. Today's consumers prioritise ethical production, personalised clothing, along with tech-integrated shopping experiences.

This report delves into the technological advancements reshaping the fashion landscape technologies such as Generative AI has accelerated the pace of delivering consumer experiences and brought in immense opportunities to engage customers and create efficiencies. The report also highlights real-life case studies from companies like Nike, illustrating how technology creates new customer touchpoints and revenue streams.

We look at a few latest trends and technological innovations driving disruption in the fashion industry and explore how companies can leverage these advancements to create a competitive advantage.

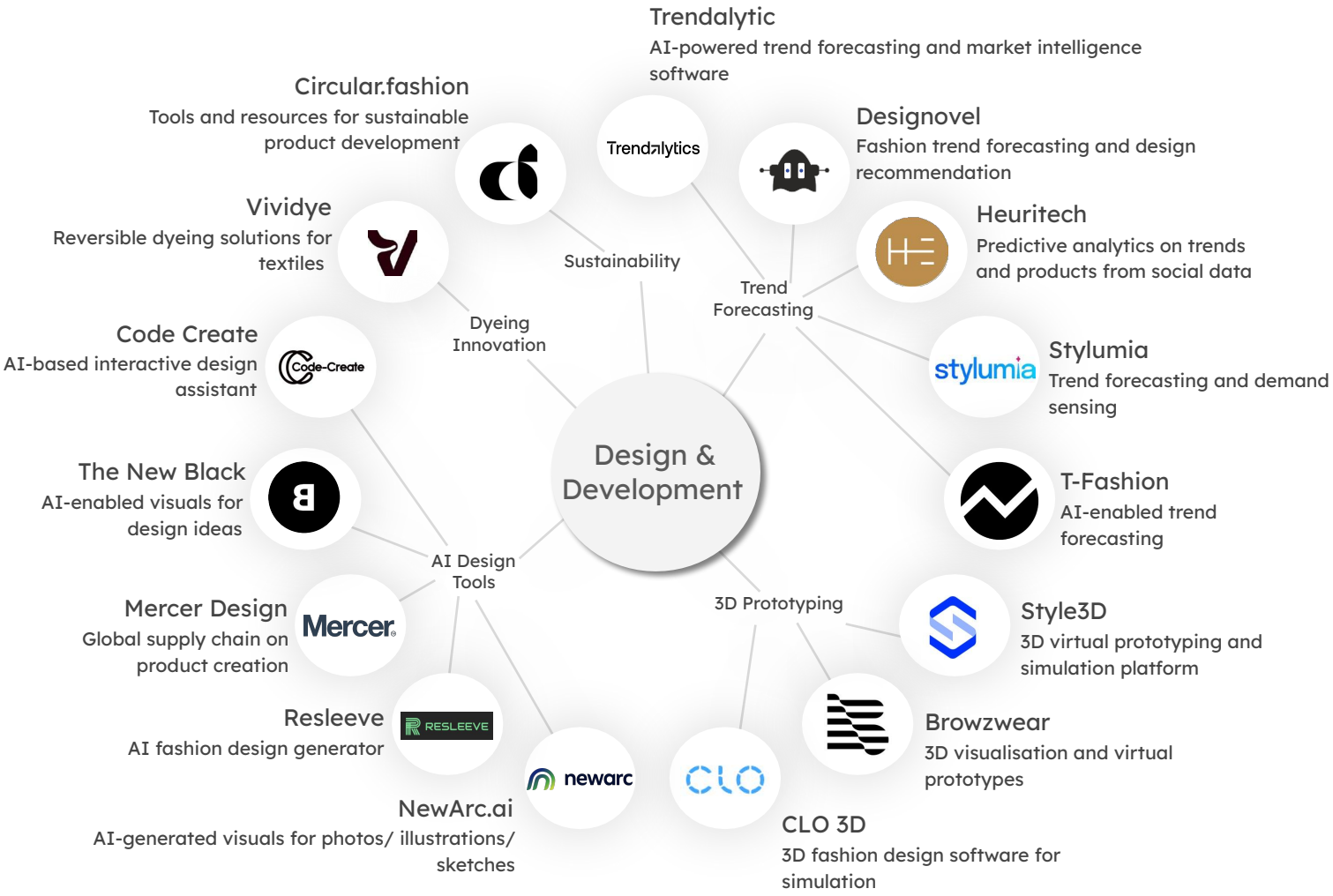
Innovation Across Apparel Business Value Chain



Apparel Business Value Chain

Design & Development

This spidermap represents key areas of innovations in apparel design to quickly and efficiently create innovative, trend-setting products that meets consumer needs while aligning with sustainable and ethical practices



Sourcing & Procurement

The spidermap below denotes key areas of innovation in material sourcing. Material sourcing has become increasingly important due to growing emphasis on sustainability, performance, and ethical considerations

Manufacturing

The spidermap showcases key innovations in manufacturing technology that enhance efficiency, sustainability, and flexibility in production processes

Distribution & Logistics

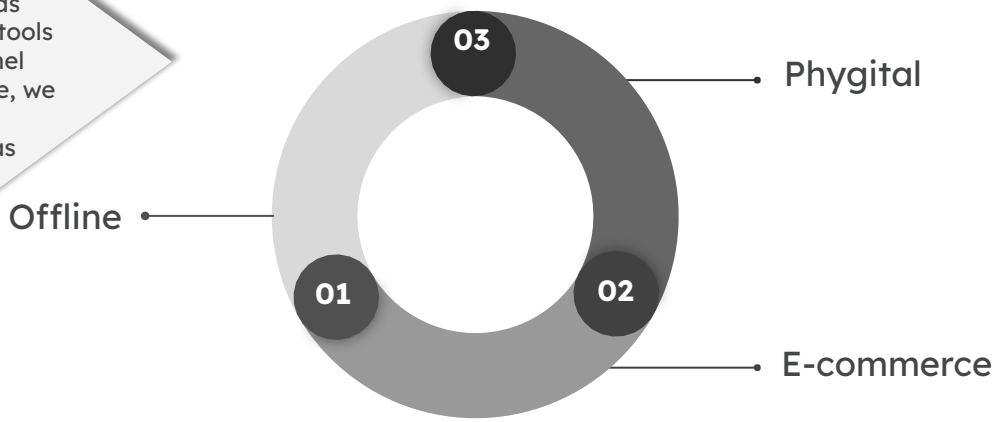
This spidermap represents key innovation areas in distribution within the consumer industry, enhancing both operational efficiency and customer experience

Marketing

The spidermap below denotes some recent developments in marketing technology that enable companies to reach and engage target audiences in unique and compelling ways

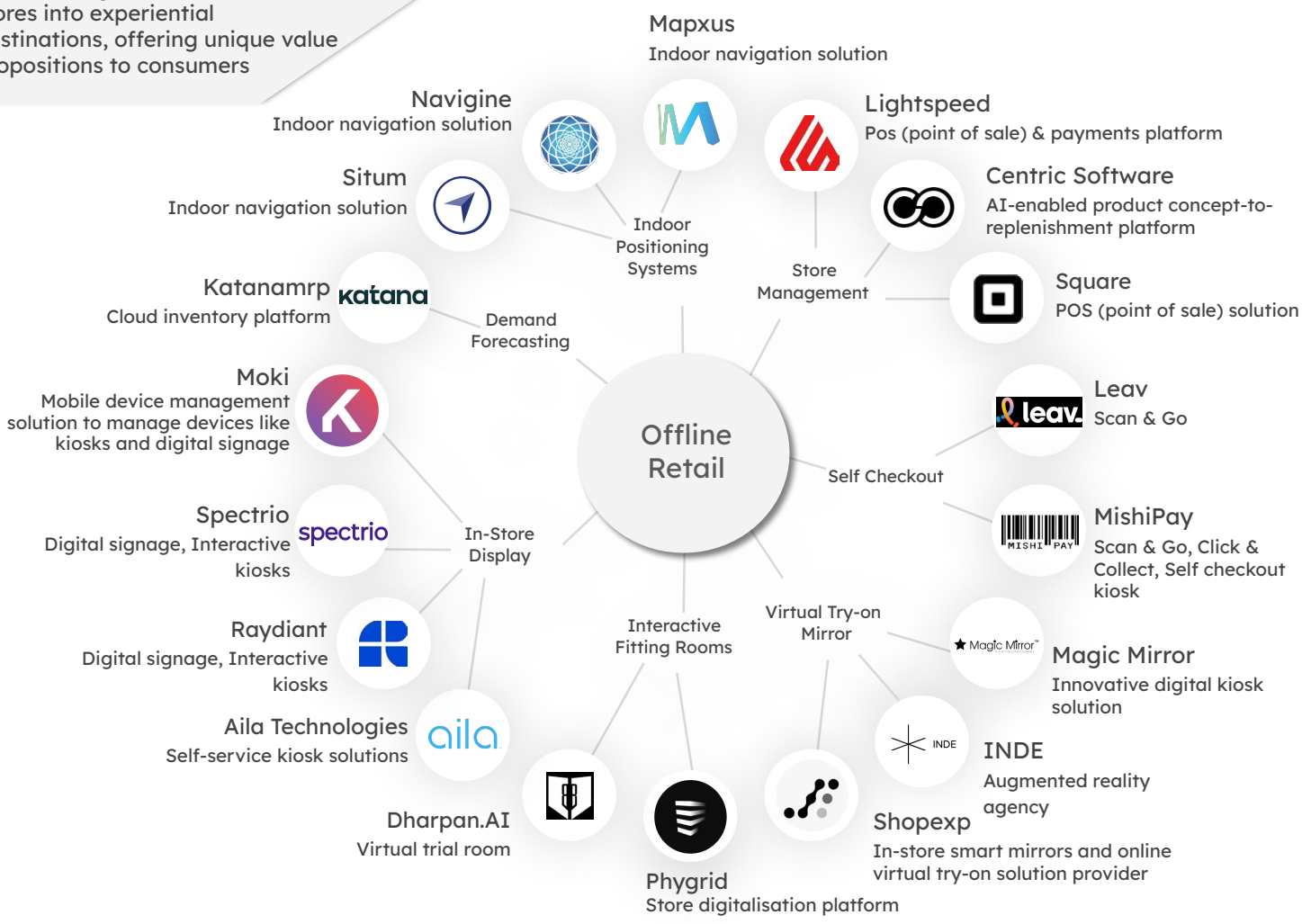
Retail

The role of online and offline (brick and mortar) retail is as important as tech-enabled tools that provide an omni-channel customer experience. Hence, we have divided the retail innovation into these 3 areas



OFFLINE RETAIL

The spidermap denotes areas to engage consumers and enhance their store experience by transforming brick-and-mortar stores into experiential destinations, offering unique value propositions to consumers

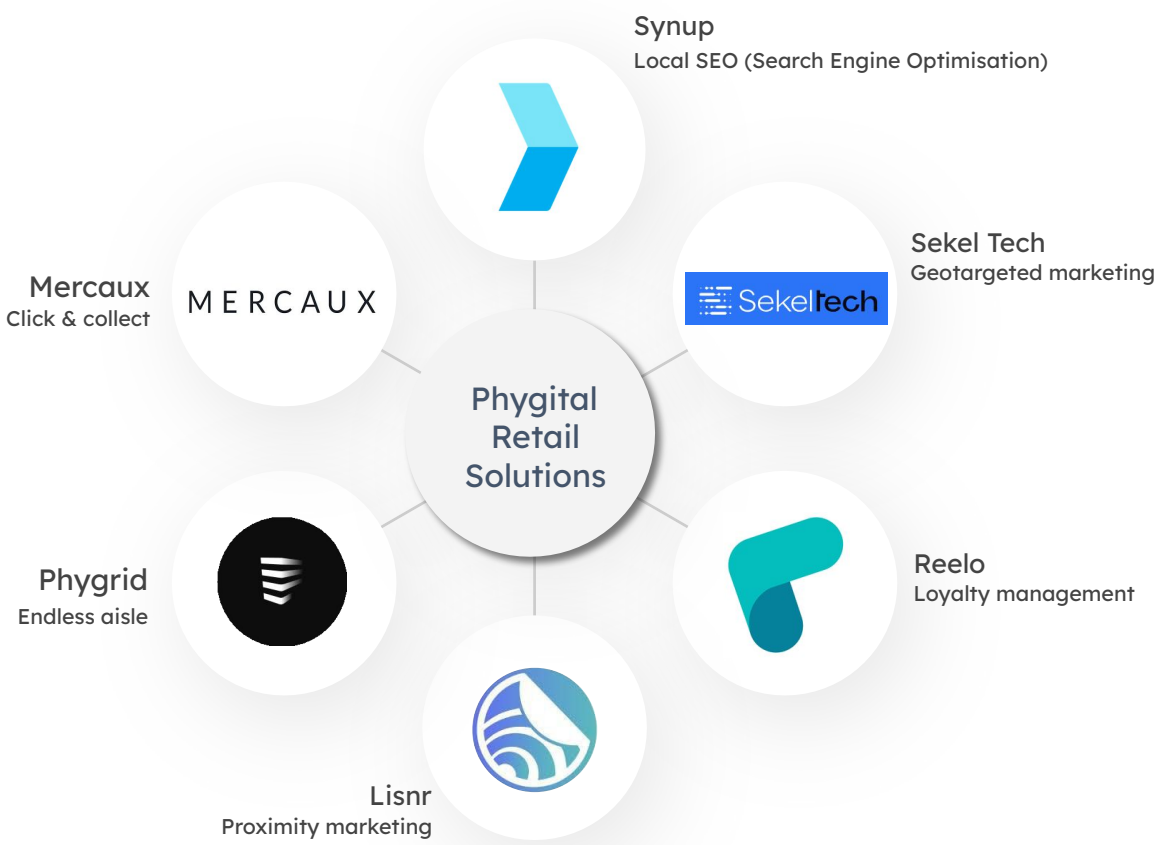


E-COMMERCE

This spidermap covers latest techniques aimed at enhancing the digital shopping journey and driving growth in e-commerce

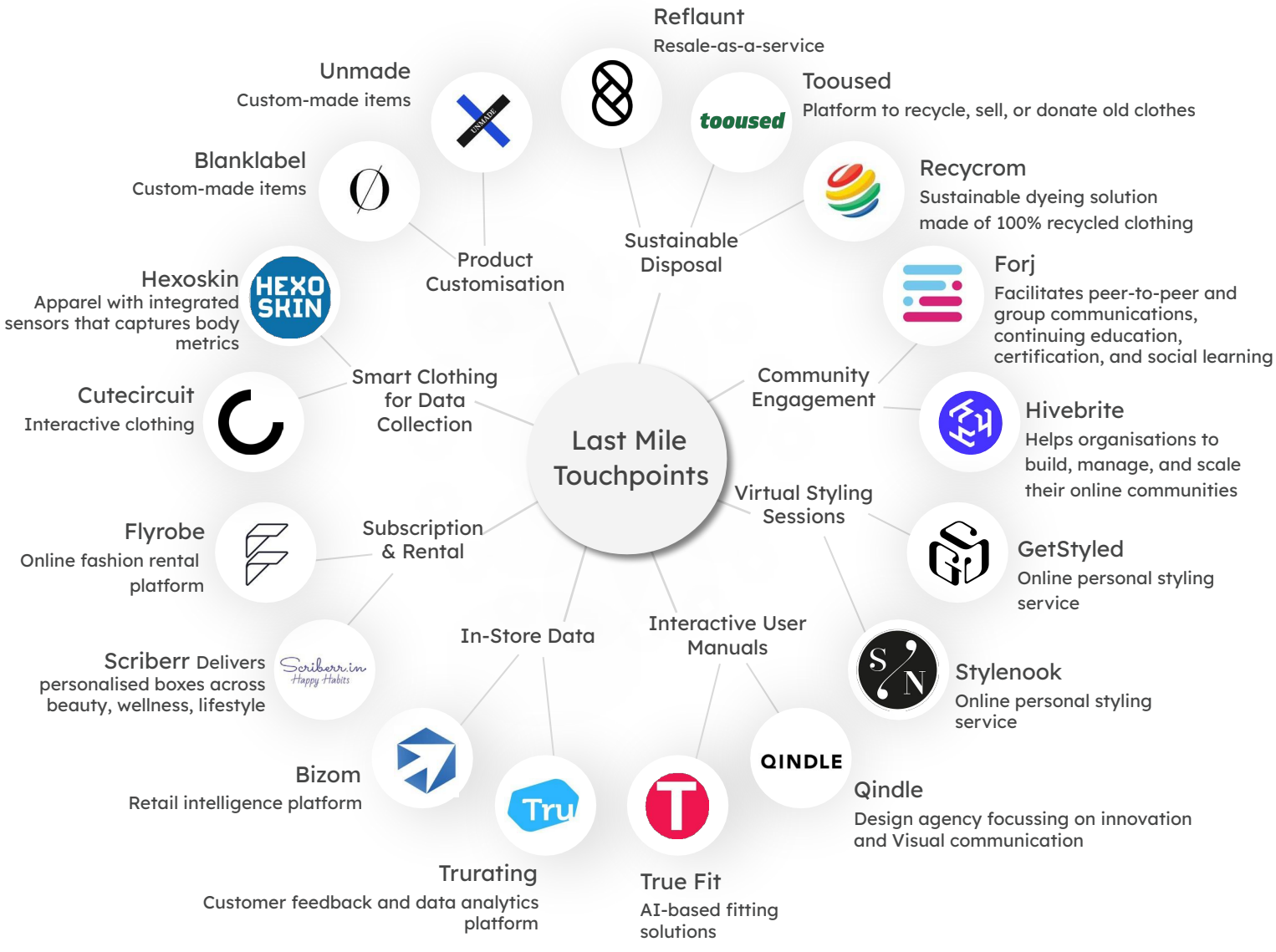
PHYGITAL RETAIL SOLUTIONS

This spidermap represents methods of phygital retail, a blend of physical and digital elements, aimed at seamless and immersive shopping experiences, bridging the gap between online and offline channels



Last Mile

Final interactions between a retailer and a customer, before a purchase is completed, can potentially shape overall customer experience and significantly influence customer satisfaction, loyalty, and repeat purchases. Below is a spider map that illustrates key touchpoints which are crucial for ensuring customer satisfaction and completing the sale effectively



Latest Innovation in Apparel Business

Latest Innovation in Apparel Business

1. Sustainable Material
2. Digital Design & Prototyping
3. Smart Fabrics & Wearables
4. Circular Fashion
5. On-Demand Manufacturing
6. AR in Retail
7. Generative AI in Apparel Business
8. Biodegradable & Compostable Packaging

Sustainable Material

Piñatex

Leather alternative made from cellulose fibres extracted from pineapple leaves

Uses By:

ZARA HUGO BOSS H&M NIKE

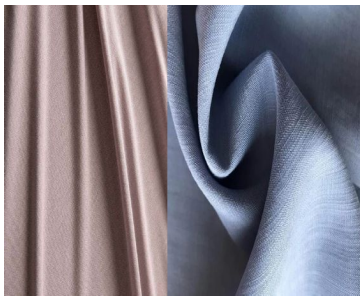
Piñatex from Hozen, a D2C fashion startup

Tencel/Lyocell

Made from wood pulp, primarily sourced from eucalyptus trees

Used By:

H&M JOCKEY Levi's



Tencel/Lyocell

Refibra

Lyocell fibre that incorporates both virgin wood pulp and recycled cotton fibres

Used By:

Timberland ARVIND FASHIONING POSSIBILITIES ZARA Levi's

MARA HOFFMAN patagonia J.CREW

Refibra created by Lenzing

Recycled Cotton

Made from post-industrial and post-consumer cotton waste

Used By:

Aditya Birla Yarn

Recycled cotton yarn

Seacell

Made from seaweed and wood pulp

Used By:

Seacell from SynZenBe, a textile company

Orange Fibre

Created from citrus juice by-products, specifically from the discarded peels of oranges

Used By:

Orange silk, created by Italian company Orange Fiber

Qmonos (Spider Silk)

Made from a bioengineered protein, fibroin - component of spider silk

Used By:

Dress created from Qmonos by the company Spiber

Econyl

Nylon fabric made from regenerated waste materials, recycled ocean plastics and discarded nylon materials such as fishing nets, fabric scraps, and industrial plastics

Used By:

H&M adidas STELLA McCARTNEY

Econyl corset top

Hemp

Textile made from fibres extracted from the stalks of the Cannabis sativa plant

Used By:

LEVI'S patagonia

French hemp fabric

Mycelium Leather

Made from mycelium - the root structure of mushrooms

Used By:

adidas lululemon KERING

STELLA McCARTNEY GANNI

Mycelium leather

CASE STUDY

Digital Design & Prototyping

Gokaldas Exports & Browzwear

Innovating to Create a Greener and More Resilient Apparel Industry

GOKALDAS EXPORTS

A textile company in India specialising in the production and export of garments and textiles. Their clients includes international brands such as GAP, H&M, Adidas, Puma, Vero Moda, ZARA, Walmart, Carrefour and Marks & Spencers among others.

Gokaldas incorporated Browzwear's VStitcher into the product development workflow to digitise sample creation and conduct iterations digitally.

BROWZWEAR

Singapore

Founded: 2012

browzwear.com

Total Funding: $35M

Investors: Radian Capital

Provider of 3D digital solutions for the fashion industry. Their software enables designers, pattern makers, and manufacturers to create and visualise garments in a virtual environment.

KEY GOALS TO ACHIEVE

1. Fit accuracy
2. Improved Product Quality
3. Shortening go-to-market time
4. Reducing production costs

VSTITCHER FROM BROWZWEAR:

3D virtual prototyping tool to create, visualise, and manipulate digital garments in a three-dimensional environment. Allows designers to simulate the fit, drape, and appearance of clothing.

Features:

1. Pattern creation and editing
2. 3D garment simulation
3. Fabric simulation
4. Fit evaluation
5. Rendering and visualisation

IMPACT:

1. 30% reduction in development samples
2. 50% reduction in internal design samples
3. The ability to master the fit intent on the first physical sample
4. Fluid internal and external product development workflows
5. 100% fit accuracy on samples

Smart Fabrics & Wearables

Conductive Fabrics

Integrate sensors, actuators, and other electronic components into fabrics for applications such as health monitoring, gesture recognition, and ambient intelligence

Shape Memory Fabrics

Engineered to remember and recover their original shape after being deformed. Can be incorporated into clothing, footwear, and accessories to provide customised fit, support, and comfort

Thermochromic Fabrics

Change color in response to changes in temperature. Used in fashion and apparel to create interactive and color-changing garments

Used By:

ZARA H&M

Photochromic Fabrics

Change color when exposed to UV light. Creates visual interest, novelty, and customisation options for consumers

Illuminated Fabrics

Integrate light sources such as LEDs (light-emitting diodes) or electroluminescent panels into the textile structure, adding a luminous element to garments

Self-Healing Fabrics

Capable of autonomously repairing damage or tears. The self-healing mechanism is activated by factors such as heat, moisture, or pressure

Water-Resistant and Breathable Fabrics

Engineered to repel water while allowing moisture and air to pass through, keeping the wearer dry and comfortable

Used By:

Columbia THE NORTH FACE ユニクロ UNIQLO patagonia

Temperature Regulating Fabrics

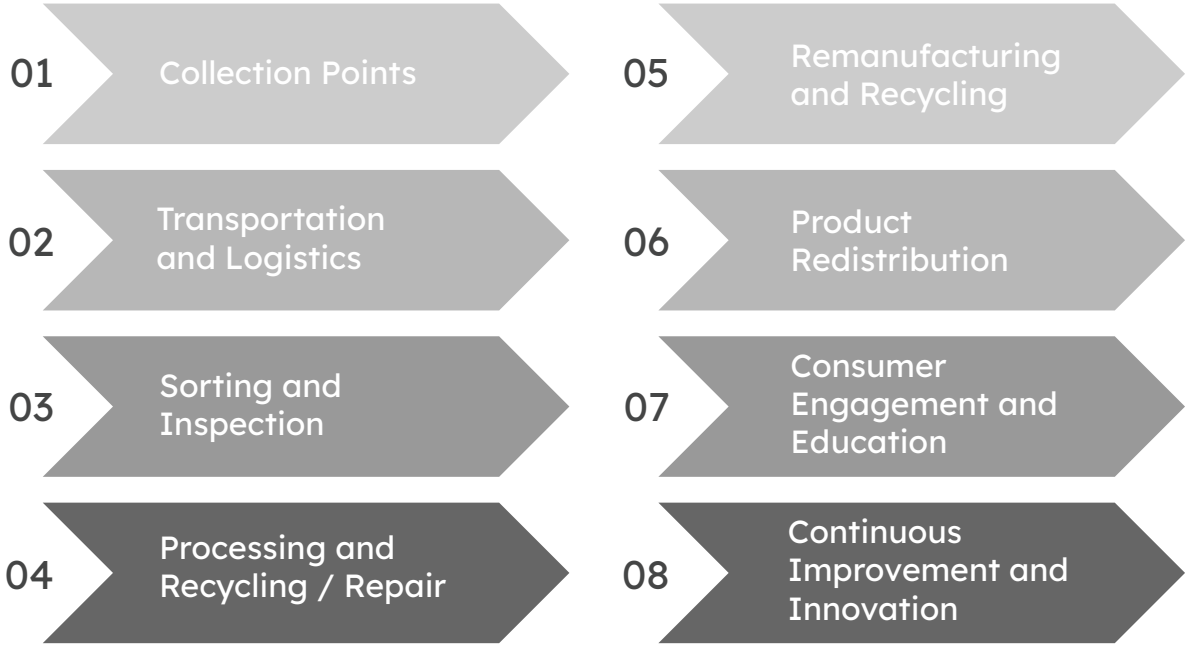
Designed to help regulate the wearer's body temperature by managing heat retention and dissipation. Incorporate advanced technologies or natural fibres that react to changes in temperature

Used By:

BLACKBERRYS

Circular Fashion

CIRCULAR FASHION SUPPLY CHAIN



FEW EXAMPLE STARTUPS

The Renewal Workshop

(Acquired by Bleckmann)

USA | Founded 2015 | bleckmann.com

ABOUT:
Bleckmann has launched a renewal and recommerce service for brands to restore products for resale.

TOTAL FUNDING RAISED:
$14.6M

INVESTORS/ACCELERATORS:
SHIFT Invest, Portland Seed Fund, Volta Circle, Rubio Impact Ventures, Mistletoe, For Good Ventures, Fashion For Good, The Draper Richards Kaplan Foundation, Quadia, Closed Loop Partners, VTF Capital, IrishAngels

RePack

(Acquired by Oceansix)

Finland | Founded 2011 | repack.com

ABOUT:
Durable and eco-friendly packaging for online retailers, focused on reusing packaging materials.

TOTAL FUNDING RAISED:
$2.4M

INVESTORS/ACCELERATORS:
European Innovation Council, EASME - EU Executive Agency for SMEs

Globe Hope

Finland | Founded 2003 | globehope.com

ABOUT:
Globe Hope specialises in sustainable fashion by upcycling materials to create eco-friendly clothing and accessories. They use surplus and leftover materials from the textile industry and collaborates with brands and designers.

TOTAL FUNDING RAISED:
Not Available

INVESTORS/ACCELERATORS:
Not Available

CASE STUDY

PATAGONIA WORN WEAR PROGRAMME

INITIATIVES

1. Free Repairs
   - Patagonia offers free repairs for any of its products.
   - Customers can bring or mail damaged Patagonia clothing to any Patagonia store for repairs.
2. Repair Tutorials
   - Patagonia provides online repair tutorials and guides for customers who prefer to fix their clothing themselves.
   - Empowers customers to extend the life of their garments.
3. Worn Wear Trade-In programme
   - Through Worn Wear website (wornwear.patagonia.com), customers can trade in their used Patagonia clothing with store credit.
   - Traded-in items that meet Patagonia's standards are refurbished and resold as part of the Worn Wear collection.
4. Mobile Repair Tours
   - Patagonia organises mobile repair tours for repair technicians to travel to various locations, offering free repairs for Patagonia products.

BUSINESS IMPACT

1. Extending the lifespan and value of its product range.
2. Reselling second-hand products on its online platform at a margin, after paying customers a fee for trading in used items.
3. Customer Engagement: The programme has fostered strong customer loyalty and engagement and has enhancing brand image as a leader in sustainable fashion.

SUSTAINABILITY IMPACT

1. In 3 years, Patagonia sold 120,000 repurposed items, significantly reducing waste and promoting circular fashion.
2. Buying used garments reduces an individual's apparel carbon footprint by 60% (Batten Report, University of Virginia).

CASE STUDY

NIKE
REUSE A SHOE PROGRAMME

INITIATIVES

1. Collection of Used Shoes
   - Nike placed Reuse-A-Shoe bins in all of its U.S. retail stores - more than 150 locations.
2. Material Recycling
   - The used shoes are sent to recycling facility (nikegrind.com) to deconstruct and seperate the material.
3. Material Usage
   - Nike grind materials are incorporated into various Nike products including footwear, apparel, and sports surfaces.

ReUSE A SHOE

Collected more than 32 million used shoes

SUSTAINABILITY IMPACT

1. Nike uses 39% “environmentally preferred materials”.
2. This allows Nike reduce emissions by more than 182,000 metric tons.
3. Nike recycles 72% of its manufacturing waste, with 97% of the waste now being diverted from landfills.
4. 120 million pounds of manufacturing scrap have been transformed into valuable material.

BUSINESS IMPACT

1. Brand Differentiation and Reputation: The programme fosters customer loyalty and engagement.
2. Supply Chain Optimisation: Utilising recycled materials reduces dependence on virgin resources.

On-Demand Manufacturing

Ministry of Supply°

Ministry of Supply

USA | Founded 2012 | ministryofsupply.com

ABOUT:
Apparel brand founded by MIT graduates, focuses on personalised experiences and advanced materials and offers a range of custom-fit garments.

TOTAL FUNDING RAISED:
$9.2M

INVESTORS/ACCELERATORS:
SK Ventures, Craig Breslow, VTF Capital, Kevin Henrikson, MassChallenge

1. Customer Engagement

Offers personalised consultations both in-store and on the website to understand each customer's specific requirements

2. Size & Fit

Body scanning using Ministry of Supply's proprietary technology

3. Customisation

Customers can select fabric type, color, style, and fit

4. Digital Prototyping

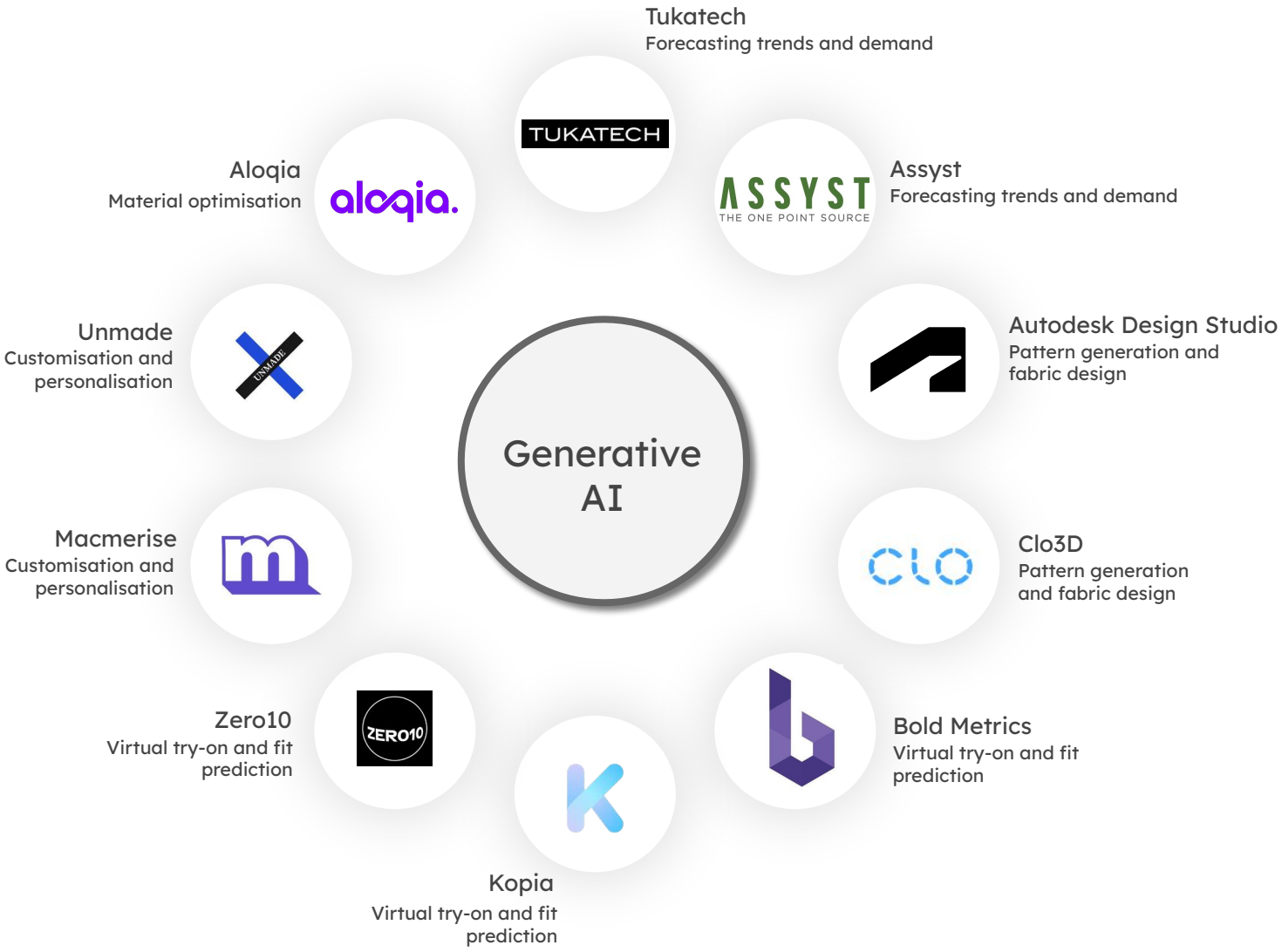
Generates virtual representations of custom garments

AR in Retail

AR Technology has been increasingly adopted by retailers to enhance the in-store shopping experience. The spidermap highlights few startups samples

Generative AI in Apparel Business

Generative AI has the potential to revolutionise various aspects of the retail industry. Few areas have been highlighted here



Biodegradable & Compostable Packaging

Biodegradable Polybags

Made from biodegradable materials like PLA, derived from corn starch or sugar- cane

Used By:

ZARA

Compostable Mailers

Mailers made from compostable materials like corn starch, wheat straw, or paper

Mushroom Packaging

Packaging made from mycelium, the root structure of mushrooms

Water-soluble Bags

Bags made from materials like PVA, which dissolve in water, used as inner packaging for apparel items to reduce waste

Seaweed-based Packaging

Made from seaweed or algae

Plant-based PLA Wraps

Compostable wraps, providing a protective barrier for apparel items while being environmentally friendly

Biodegradable & Compostable Packaging

The highlighted solutions & sample startups offer environmentally friendly alternatives to reduce waste and minimise the environmental impact of packaging materials

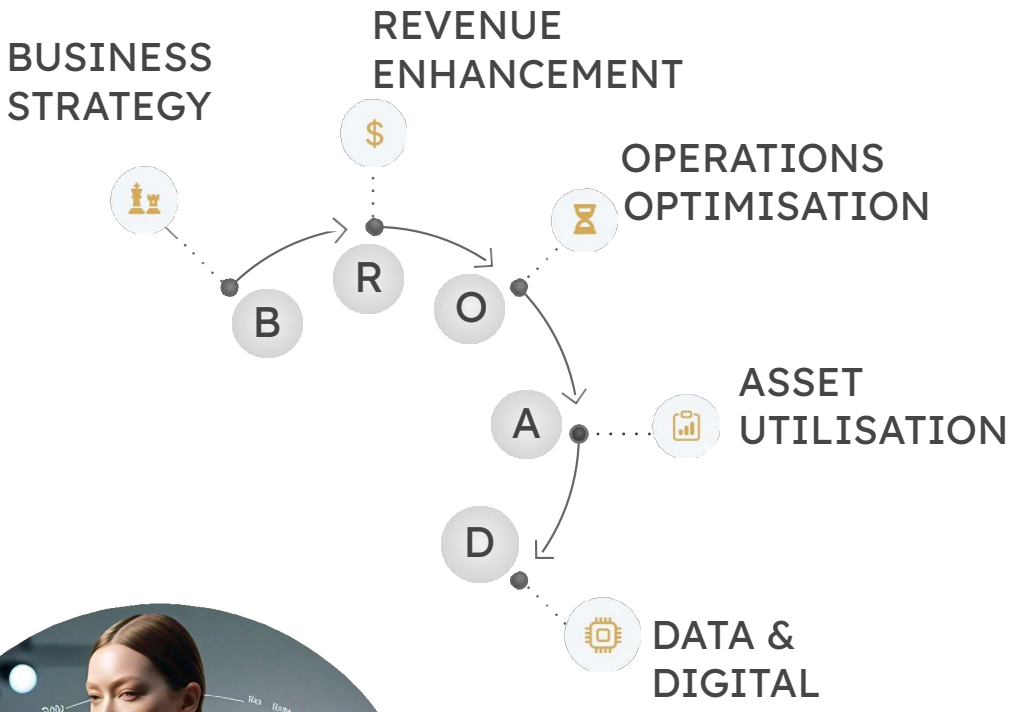
Innovation Ecosystem Engagement Framework:BROAD

Innovation Ecosystem Engagement Framework: BROAD

The fashion industry is experiencing a seismic shift, impacting people, processes, technology, and consumer behaviour. Innovation is crucial to staying competitive, yet it's equally important to prioritise which business processes and technologies to innovate first.

Given that not everything can change simultaneously, we have developed a framework to align innovation priorities with organisation's long-term vision. This framework ensures that innovation efforts are both strategic and impactful.

BROAD



Mapping Innovation Opportunities in the Fashion Industry Using the BROAD Framework

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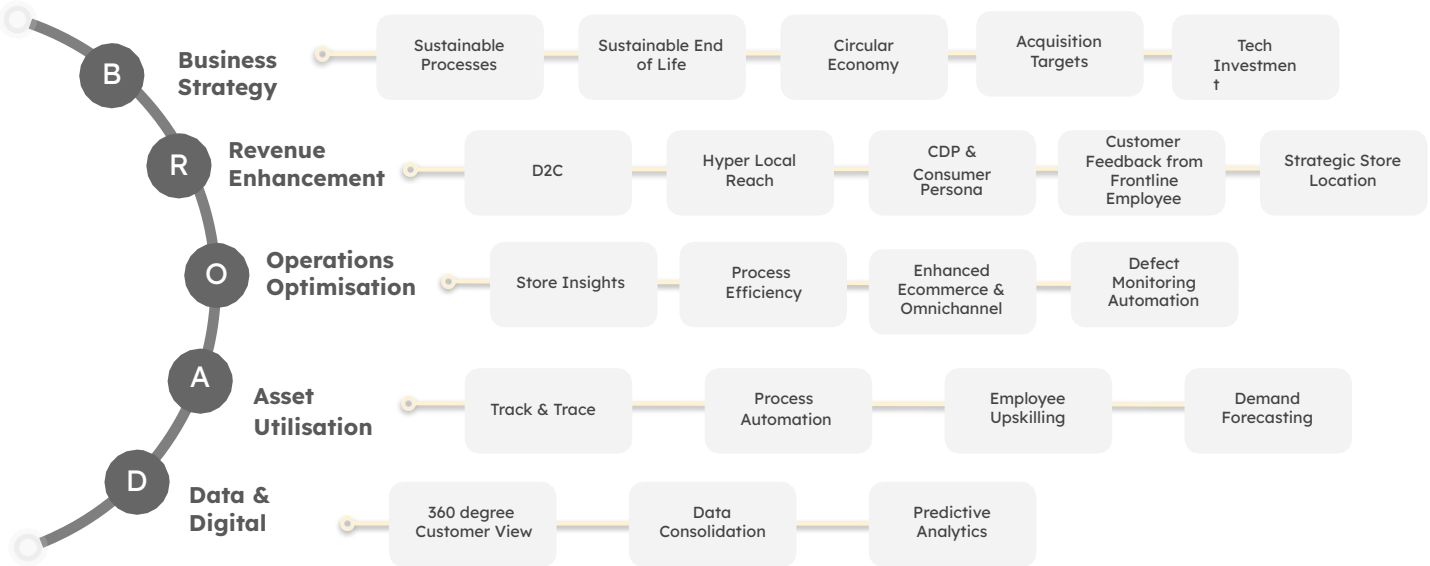

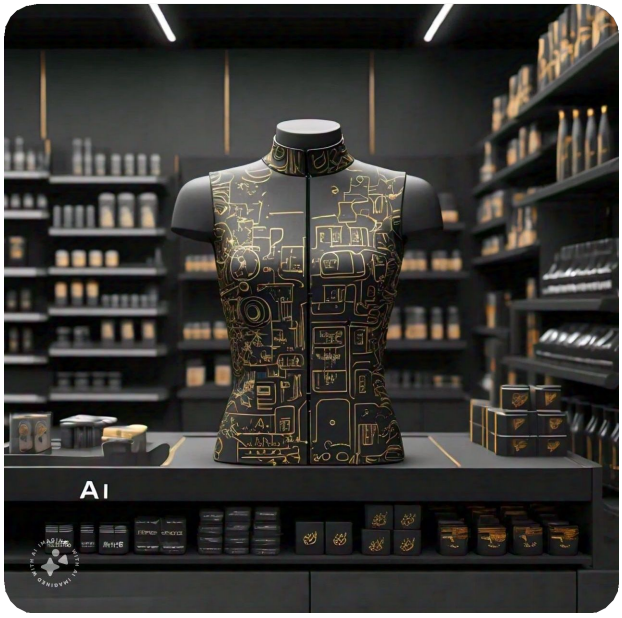

Key Takeaways

Key Takeaways

HYPER-PERSONALISATION

N=1 [Hyper-personalisation]: Every consumer is unique and how you understand his/her needs will be key to the future of fashion industry.
“N=1” Approach is a hyper-personalisation strategy where each consumer is treated as a "market of one". The approach relies heavily on data collection and analysis about customers' preferences, behaviours, and past interactions.

RESOURCES ARE GLOBAL

R=G [Resources are Global]: Efficient supply chain that can deliver the personalised needs of your consumer Faster, Better and Cheaper will drive the success.
“R=G” suggests that companies can access resources globally in real-time, regardless of their location - whether it is talent, materials, data, or technology. This enables businesses to operate efficiently and deliver products and services on a global scale.

ECOSYSTEM AS A STRATEGY

Ecosystem as a strategy: How you harness the Innovation ecosystem around you to drive sustainability, forecast consumer demand and engagement will enable you to create a competitive advantage.
“Ecosystem as a strategy” refers to building and leveraging inter- connected partners and suppliers to create value. It aims to create a collaborative environment for agile innovation to respond quickly to market changes.

OpenI

We can enable your journey in this rapidly changing disruptive economy. OpenI Platform highlights:

- Next disruptor you must know about
- How your competitors are engaging with these disruptors/ innovators
- Startup ecosystem to drive your growth

Navigate with Confidence

BUSINESS GROWTH
Identify high potential startup investment opportunities

STRATEGY & INNOVATION
Source new business models, spot future competitors

BUSINESS OPERATIONS
Optimise business operations

MARKETING
Drive sales and customer engagement (D2C)

PARTNER MANAGEMENT
Procure and manage next-gen disruptors

ASK OUR ANALYSTS

White Space Analysis (Spidermap)

Ecosystem as a Strategy

Managed Sourcing

Corporate Venture

Competitive Analysis

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