

TITLE: SmartView XR Analytics Catalogue.

COMPANY NAME: XR DOCK

Problem Statement

“How can we create an immersive, interactive, and data-driven product catalogue that gives users a lifelike viewing experience while providing retailers with valuable analytics insights?” Traditional online product catalogues provide only 2D images and descriptions, which limits customer understanding of products.

Users cannot interact with products, visualize them in real space, or receive data-driven suggestions. Retailers also struggle to understand customer engagement patterns, such as which product is most viewed, interacted with, or ignored.

SOLUTION

The solution is an **XR-based virtual product catalogue with built-in data analytics**. Users explore 3D products in a virtual environment using, XR Analytics Catalogue while advanced analytics capture user interactions to support decision-making for retailers.

Proposed Solution / Concept

Smart XR Eco-Retail Hub is an immersive **XR-based virtual product catalogue** that allows users to:

USER FEATURES

- View 3D products in a virtual environment using XR devices (e.g., Vision Pro).
- Rotate, zoom, and inspect products with hand gestures.
- Place products virtually in their real environment.
- Access guided voice-assisted product tours.
- Compare two products side-by-side in XR.

SYSTEM FEATURES

A. User Features

1. **360° Product Interaction**
 - Users rotate, zoom, scale, and position 3D products using hand/eye gestures.
2. **Real-World Placement (AR Mode)**
 - The user places a virtual product in their real surroundings to understand size, style, colours, and fit.

3. Product Information Layers

- Tapping a product reveals:
 - Specs
 - Videos
 - Animations (e.g., opening a laptop screen)

4. Comparison Mode

- Two products appear side-by-side with synced interactions.

5. Voice-Guided Assistance

- Audio narration for each product.

B. Data Analytics Features

1. Gaze Tracking & Heatmaps

Shows what part of a product users look at the most.

2. Interaction Duration Metrics

Measures how long a user interacts with each item.

3. User Journey Mapping

Tracks the path users take inside the virtual catalogue.

4. Product Popularity Ranking

Automatically identifies trending or highly-engaged products.

5. Predictive Analytics

Uses machine learning to recommend similar products.

Analytics Features

- Real-time tracking of:
 - Product view time
 - User gaze direction
 - Interaction patterns
 - Most explored features
- AI recommendations based on user behaviour (example: “You seem interested in gaming laptops—here are similar products”).

Business Dashboard

- Retailers get a backend dashboard showing:
 - Most viewed products
 - Heatmaps of user interactions

- Conversion predictions
- Demand forecasting

This combines immersive experience + data intelligence to improve both customer satisfaction and business decision-making.

Technology Stack Used

- **XR Platform:** Apple Vision OS / Unity XR SDK
- **3D Engine:** Unity (C#)
- **AI/ML Analytics:** Python, TensorFlow, Scikit-learn
- **Backend:** Firebase / AWS Lambda
- **Database:** Fire store / MongoDB
- **Dashboard:** Power BI / Tableau
- **User Interaction Tracking:** Custom analytics scripts integrated with XR gestures, gaze tracking APIs

Benefits / Impact

For Users

- Realistic product experience before buying
- Better decision-making through 3D product visualization
- Personalized recommendations through analytics

For Businesses

- Data-driven insights into user behaviour
- Identifies high-demand products
- Reduces return rates
- Creates engaging virtual showrooms

Overall Impact

- Enhances future retail shopping
- Combines XR + Analytics for intelligent retail transformation