

Competitor Pricing Intelligence Vision Statement

Turning market chaos into clarity

Modern ecommerce merchants find themselves scrambling just to keep up with evolving markets. Tracking competitors, running promotions, adjusting stock, all in a fragmented process, with no unified signal on what data matters and clear insights on what to do next. Few existing tools are accessible to SMBs (small and medium-sized businesses); the few that are, are limited to simple monitoring, or naive, rule-based repricing that ignores cost, demand sensitivity, and strategic tradeoffs.

Building the intelligence layer for pricing decisions

Our product will dynamically ingest all available competitor data: prices, bulk tiers, stock availability, and assortment across any ecommerce site using a robust, generalizable scraping engine. This raw data is saved and transformed into structured histories, comparative analytics, and trend based insights that help merchants understand not just what changed, but why it matters in the context of their market.

On top of this foundation, we provide a decision engine that models demand elasticity, incorporates merchant COGS (cost of goods sold), and simulates pricing actions. Instead of blindly and indefinitely undercutting competitors, merchants see the expected outcomes of different strategies: margin impact, volume tradeoffs, and competitive positioning before making a move.

The mission

Our goal is informed pricing: giving merchants the same analytical leverage as enterprise retailers, without enterprise complexity or cost. The product bridges the gap between price monitoring and price intelligence—helping merchants move from reaction to strategy.

Big user stories

Big Story #1 (21 point estimate)

Competitor Data Ingestion & Scraping Engine



✓ Description

Goal

Enable the system to reliably ingest competitor product data from ecommerce sites.

In Scope

- Scraping product prices
- Detecting bulk / tiered pricing
- Capturing stock and availability signals
- Shopify/Woocommerce JSON-based scraping
- AI-based scraping for custom sites
- Store-level and product-level crawling
- Normalizing scraped data into a unified schema
- Detecting price and availability changes over time

Out of Scope

- Pricing recommendations
- Analytics and visualizations
- Alerts and notifications

Epic Acceptance Criteria

- Competitor data can be ingested from multiple ecommerce sites
- Data is stored in a structured and consistent format
- Scraping runs repeatedly without manual intervention

Big Story #2 (13 point estimate)

Competitive Intelligence & Analytics Platform



✓ Description

Goal

Provide merchants with tools to analyze and understand competitor behavior over time.

In Scope

- Historical price tracking and storage
- Competitor price comparison views
- Sorting and filtering by product, competitor, and time
- Visualization of price changes
- Assortment gap analysis (what competitors sell that the merchant does not)

Out of Scope

- Pricing optimization or AI-driven recommendations
- Alerts or notifications

Epic Acceptance Criteria

- Users can view competitor price history
- Users can compare competitors across products
- Analytics are usable without requiring ML knowledge

Big Story #3 (21 point estimate)

Pricing Decision Intelligence & Simulation Engine



✓ Description

Goal

Help merchants make informed pricing decisions using competitor data, demand sensitivity, and cost awareness.

In Scope

- Demand elasticity estimation
- Cost-aware pricing logic (COGS-aware decisions)
- Pricing recommendations (non-automatic)
- Scenario simulation (e.g., "If price is set to X, expected outcome is Y")
- Support for different optimization objectives (margin, volume, competitiveness)

Out of Scope

- Fully automated repricing
- Billing or subscription management
- Multi-channel marketplace pricing

Epic Acceptance Criteria

- System generates explainable pricing recommendations
- Recommendations consider both cost and demand sensitivity
- Users can simulate outcomes of different pricing strategies

Big Story #4 (14 point estimate)

Alerts, Integrations & Merchant Workflow



✓ Description

Goal

Integrate the platform into merchants' daily workflows through alerts and platform integrations.

In Scope

- Price change alerts (email, Slack)
- Threshold-based notifications
- Alert configuration and user preferences
- Store data integration (Shopify)
- Competitor and product tracking configuration

Out of Scope

- Billing and payments
- Enterprise API access

Epic Acceptance Criteria

- Users receive timely and actionable alerts
- Alerts are configurable to avoid noise
- Platform fits naturally into daily merchant workflows

ITR1 Stories

Scrape Competitor Product Price (Shopify/Woocommerce JSON)



✓ Description

As a system,
I want to scrape product price data from Shopify-based competitor stores using JSON endpoints,
so that competitor pricing can be collected reliably.

Acceptance Criteria

- Given a Shopify product URL, price is extracted correctly
- Handles single-variant and multi-variant products
- Fails gracefully if product is unavailable

Normalize & Store Scraped Product Data



✓ Description

As a system,
I want to normalize scraped competitor data into a consistent schema and store it,
so that historical analysis is possible.

Acceptance Criteria

- Data stored includes product ID, competitor, price, timestamp
- Schema supports future extensions (bulk pricing, stock)
- No duplicate entries for same scrape cycle

Schedule Periodic Scraping (Cron / Worker)



✓ Description

As a system,
I want competitor scraping to run automatically on a schedule,
so that pricing data stays up to date.

Acceptance Criteria

- Scraping can be triggered on a fixed interval
- Failures are logged
- Multiple competitors can be scheduled independently

Store and Query Price History



✓ Description

As a system,
I want to store historical competitor price data and support querying it by product and competitor,
so that price changes over time can be analyzed and visualized.

Acceptance Criteria

- Price history is stored for each scrape cycle
- Queries return correct, ordered time-series data
- Supports filtering by competitor and product
- Data persists across application restarts

Price History and Data View (Basic UI)



✓ Description

As a user,
I want to view ingested current and historical data in the UI,
so that data correctness can be validated.

Acceptance Criteria

- Displays competitor name, price, timestamp
- Data matches backend records
- No advanced visualization required

Detect Price Changes Between Scrapes



✓ Description

As a system,
I want to detect when a competitor price changes between scrapes,
so that future alerts and analytics are possible.

Acceptance Criteria

- Detects price increase and decrease
- Ignores unchanged prices
- Change events are stored or logged

Manual Competitor Configuration



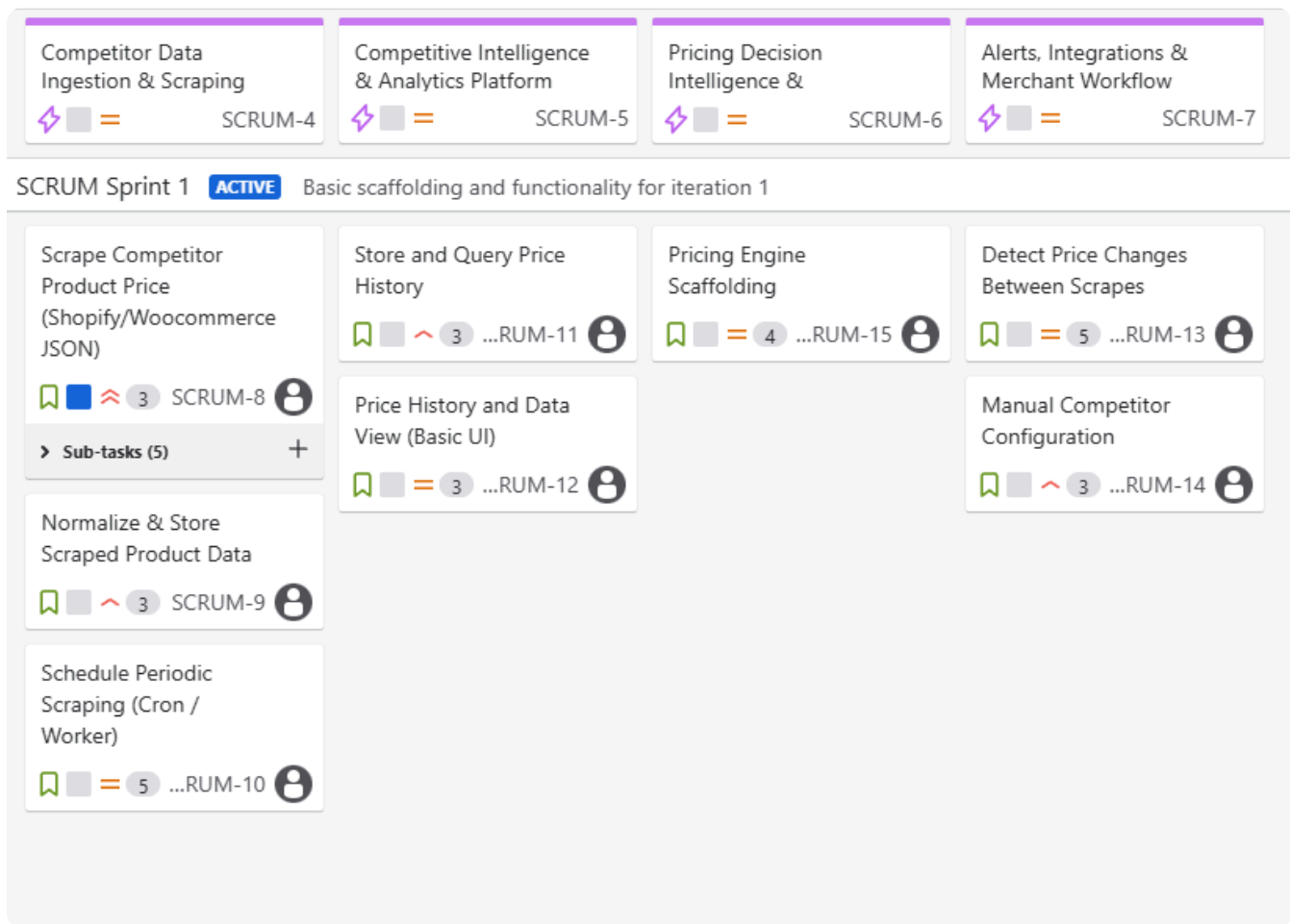
✓ Description

As a user,
I want to manually configure competitor product URLs to track,
so that the system knows what to scrape.

Acceptance Criteria

- User can input competitor product URLs
- URLs are validated
- Configurations persist across restarts

Overview of Stories



Video

!! To remain confidential, video will be submitted on eclass