

# Wayfair Rugs Market Intelligence: AI Agent Demo

By Paulo Maia

# Executive Summary

## Overview of Market Intelligence Agents

### Objective:

Build an AI-powered market intelligence system that helps Wayfair's Rugs category team detect trends earlier, monitor competitors, and turn insights into action — faster than traditional research workflows.

### My Solution

Built four connected AI agents that feed into one Market Intelligence Dashboard.

### Core Outputs

- ✓ Trend Discovery Agent - [View Output](#)
- ✓ Competitor Monitoring Agent - [View Output](#)
- ✓ AI Insights & Content Agent - [View Output](#)
- ✓ Integrated Dashboard - [View Dashboard](#)

### Key Insights

- Early signals show design trends and materials gaining traction before widespread adoption.
- Competitor analysis reveals pricing strategies, assortment expansion, and feature emphasis shaping the market.
- Customer reviews highlight recurring preferences and unmet needs, revealing whitespace opportunities for Wayfair.

### Future Improvements

- Create a single, dynamic branch in the workflow that scrapes data from multiple competitor websites based on a prompted input.
- Add scheduled refreshes and prioritization to surface the most actionable insights.

# Agent 1: Trend Discovery Agent

From Prompt → Trends Analysis Report

## Objective:

To help Wayfair's Rugs category team detect emerging design and product trends faster than traditional research methods, enabling smarter merchandising and quicker product decisions.

## Input Prompt Example

“Amazon product link

Amazon collection link

Find key product trends and attributes like size, color, material, and pattern.”

## Keep in Mind / Input Notes

- Prompts should remain **short and high-level** — the agent is optimized for discovery, not deep manual querying.
- The agent primarily analyzes **predefined sources**, including:
  - Design and industry blogs
  - Google Search
- Amazon product and collection links can be added when **SKU-level signals** are needed.
- Best for **on-demand research** or **recurring (weekly/monthly) trend scan**

## Improvements / Expansion

### Opportunities

- Allow users to scrape data from multiple competitors beside just amazon.
- Automate scheduled scans (weekly/monthly) to track trend momentum over time.
- Integrate Wayfair SKU performance data to connect trends with real sales impact.

 [View JSON Workflow](#)

 [View Sample Output](#)

# Agent 2: Competitor Monitoring Agent

From Prompt → Trends Analysis Report

## Objective:

To monitor major online competitors, by analyzing product listings, new launches, pricing changes, and customer feedback in order to uncover competitor strategies and identify whitespace opportunities for Wayfair

## Input Prompt Example

“Amazon product link  
Amazon collection link  
Find key product trends and attributes like size, color, material, and pattern.”

## Keep in Mind / Input Notes

- This agent is designed specifically for major online competitors, with a current focus on Amazon.
- Users must provide valid product or collection URLs to initiate scraping and analysis.
- The agent extracts and analyzes:
  - Customer feedback and review signals
  - Product features and positioning
  - Pricing changes

## Improvements / Expansion

### Opportunities

- Track historical pricing and assortment changes over time to identify long-term patterns.
- There are a few fields in the report that are not collect - could update report logic to only display sections when real data exists.
- Expand monitoring to additional competitors beyond Amazon for broader market coverage.

 [View JSON Workflow](#)

 [View Sample Output](#)

# Agent 3: AI Insights & Content Agent

From Prompt → Trends Analysis Report

## Objective:

To synthesize trend and competitor data into strategic insights and creative marketing concepts that help Wayfair's Rugs category team respond quickly and effectively to market signals.

## Input Prompt Example

“Amazon product link  
Amazon collection link  
Generate two creative ideas (one blog, one social caption) based on identified trends.”

## Keep in Mind / Input Notes

- This agent combines **trend signals** and **competitor intelligence** to produce data-grounded creativity.
- Users must provide **valid product or collection URLs** from major competitors such as **Amazon and Walmart**.
- Outputs include:
  - Strategic insight summaries
  - Creative marketing concepts
  - Content and messaging directions

## Improvements / Expansion

### Opportunities

- Could connect to Wayfair's internal SKU data for deeper insights.
- Connect outputs to performance metrics to evaluate which ideas resonate most.
- Generate channel-specific outputs (e.g., PDP copy, email themes, social concepts).

 [View JSON Workflow](#)

 [View Sample Output](#)

# Market Intelligence Dashboard

Bringing All Agents Together → Live Insights for Wayfair's Rugs Team

## Objective:

To unify trend discovery, competitor monitoring, and AI-generated insights into a single, always-up-to-date Market Intelligence Dashboard that supports faster, more confident decision-making for Wayfair's Rugs category team.

## How This Works

- Aggregates outputs from all AI agents into one centralized dashboard.
- Automatically updates multiple intelligence streams, including:
  - Trend signals
  - Competitor activity
  - AI-generated insights and content ideas
- Presents information in a **Google Sheets dashboard** designed for quick scanning and comparison.

## Keep in Mind / Implementation Notes

- The dashboard is designed for on-demand refresh, allowing teams to pull the latest intelligence when needed.
- Serves as a **single source of truth**, reducing reliance on static reports or manual updates.
- Enables cross-agent visibility.

## Improvements / Expansion

### Opportunities

- Enable scheduled refreshes (daily or weekly) for continuous monitoring.
- Add filtering and prioritization to highlight the most impactful signals.
- Integrate performance metrics to connect intelligence with downstream outcomes.

 [View JSON Workflow](#)

 [View Dashboard](#)

# Reflections & Future Improvements

What I Learned and How I Can Make It Better



## Key Learnings

- Developed a stronger understanding of how trends, competitor behavior, and customer feedback inform merchandising and marketing decisions.
- I understood how data informs design, assortment, and pricing decisions.
- Gained hands-on experience designing connected AI agents that move beyond isolated outputs and operate as a unified intelligence system.
- Learned how to translate large volumes of unstructured market and competitor data into clear, actionable insights for category teams.
- Learned the importance of prompt design, data normalization, and consistency when building AI systems intended for business users.



## Future Improvements / Next Steps

- I plan to integrate SKU performance metrics to connect trends with real sales data.
- I'd like to expand data sources to include social media for better trend discovery.
- I want to refine AI prompts for more brand-aligned and creative content suggestions.
- Enable scheduled dashboard refreshes to support continuous monitoring rather than only on-demand use.
- Add prioritization and scoring to highlight the most impactful trends and competitor moves
- Allow users to scrape data from multiple competitors beside just amazon for my Trend Discovery and Competitor Monitoring agents

*Thank  
you!*