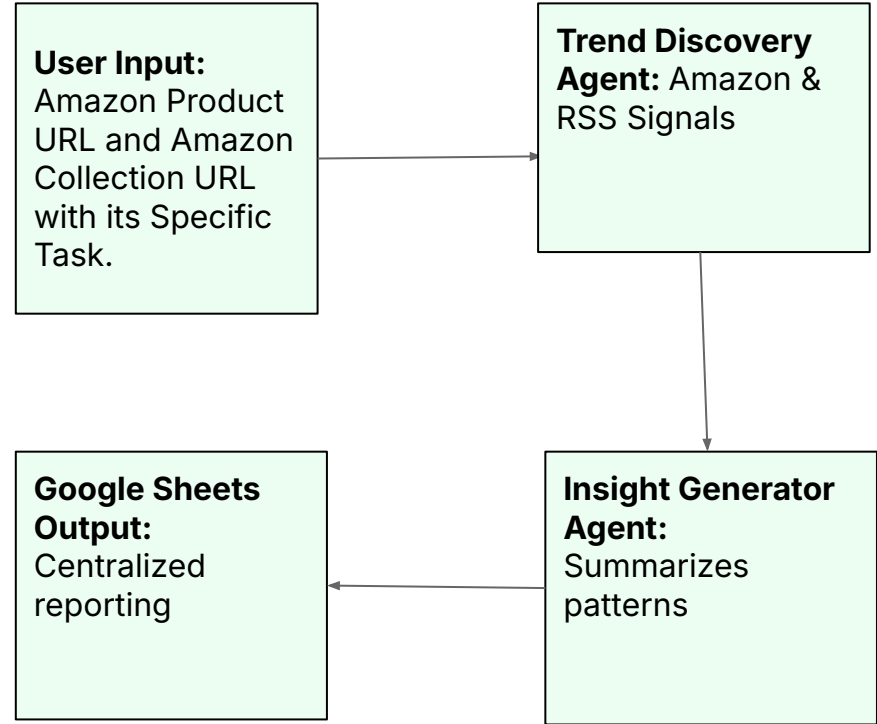# Wayfair Rugs Market Intelligence: AI Agent Demo

Name: Kayla Colletti
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User Input: Amazon Product URL and Amazon Collection URL with its Specific Task.

Trend Discovery Agent: Amazon & RSS Signals

Insight Generator Agent: Summarizes patterns

Google Sheets Output: Centralized reporting

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Executive Summary

Overview of Market Intelligence Agents

🎯**Objective:**

Help Wayfair Rugs category team automate trend discovery, monitor competitors, and transform market signals into clear, decision- ready insights.

🧠**My Solution**

Built three connected AI agents that collect market and competitor data, store structured intelligence in Supabase, and surface actionable insights through a centralized Market Intelligence Dashboard.

⚙️ **Core Outputs**

- ✔ Trend Discovery Agent - Output Link
- ✔ Competitor Monitoring Agent - Output Link
- ✔ AI Insights & Content Agent - Output Link
- ✔ Integrated Dashboard - Output Link

🔍 **Key Insights**

- Washable, low-pile, and non-slip rugs are gaining traction due to demand for practicality and easy maintenance.
- Neutral-tones Bohemian, Moroccan and modern abstract rugs are expanding across both value and premium price triers.
- Competitor volatility and review sentiment reveal opportunities for Wayfair to differentiate through quality, durability and messaging.

🧠**Future Improvements**

- Integrate Wayfair performance metrics to connect trends with sales and conversion impact.

- Automate insights prioritization based on estimated revenue and customer impact.

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Agent 1: Moodboard Generator

From Design Prompt → AI-Curated Visual Mood

🎯**Objective:**

To transform simple text prompts into AI-generated moodboards that reflect emerging rug design styles.

🧠**Input Prompt Example**

"Bohemian rugs, neutral tones"

⚠️ **Keep in Mind / Input Notes**

- Keep prompts **short (under 10 words)** and **specific** — e.g., "eco-friendly jute rugs," "modern geometric rug."
- Use **clear style + material keywords** (e.g., color, texture, tone).
- Avoid subjective adjectives like "beautiful" or "nice."
- 🧩 **Free-Tier Limitation:** Google Gemini's image generation API currently allows **up to 20 image generations per day (free version)**.

Output Example:

NATURE'S EMBRACE: RUGS FOR WHITE LIVING ROOMS
A COLLECTION BY [EESIGN NAME]

📄View JSON Workflow

🖼️ View Sample Moodboard

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Agent 2: Trend Discovery Agent

From Market Signals → Emerging Rug Trends

🎯Objective:

Identify current and emerging rug trends by analyzing competitor product listings and industry content, helping Wayfair Rugs team anticipate shifts in consumer demand.

🧠Input Prompt Example

Amazon Product URL and Amazon Collection URL for rugs with its specific task- Find key product trends and attributes like size, color, material and pattern.

⚠ Keep in Mind / Input Notes

- Insights are generated when triggered by input.
- It is designed specifically for the Rugs category.
- Trends are detected based on attributed, not band performance.
- Outputs reflect a weekly snapshot of market activity.

💡 Improvements / Expansion Opportunities

- Expand inputs beyond Amazon to include social and search trend data.
- Automate historical trend tracking to measure momentum over time.
- Extend agent logic to additional Wayfair categories beyond rugs.

📄View JSON Workflow: Project 2 JSON Link

🖼 View Sample Output Link: Trend Signals Link

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Agent 3: Competitor Monitoring Agent

From Competitor Listings → Pricing & Assortment Groups

🎯 Objective:

To benchmark Wayfair rug products against key competitors by analyzing pricing, reviews, promotions, and product positioning to uncover competitive gaps and opportunities.

🧠 Input Prompt Example

Using the same Amazon Product URL and Amazon Collection URL for rugs with its specific task- Based on these links compare Wayfair rugs with Amazon rugs and identify gaps in style or pricing.

⚠ Keep in Mind / Input Notes

- Insights are generated when triggered by input.
- Focused on Amazon as a primary competitor, but also adaptable to others.
- Comparisons are most effective when products are closely matched by size, style and material.
- Review sentiment and velocity are used as quality signals, not absolute performance measures.

💡 Improvements / Expansion Opportunities

- Add Automatic alerts for major competitor price changes or new launches.

- Incorporate richer review sentiment analysis at scale.

- Track competitor marketing language to inform PDP optimization.

📄 View JSON Workflow: Project 3 JSON Link

🖼 View Sample Output: Competitor Moves Link

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Agent 4: AI Insight & Content Agent

From Trends & Competition → Actionable Decisions

🎯 Objective:

To synthesize trend and competitor signals into clear, prioritized insights that guide merchandising, marketing and content strategy for Wayfair Rugs team.

🧠 Input Prompt Example

Using the same Amazon Product URL and Amazon Collection URL for rugs with its specific task- Generate two creative ideas (one blo, one social caption) based on identified trends. .

⚠ Keep in Mind / Input Notes

- Insights are generated when triggered by input.
- Requires the same input format as other agents (product and collection URLs).
- Designed to balance assortment decisions and marketing activation equally.

💡 Improvements / Expansion Opportunities

- Tie insights to Wayfair's performance metrics of sales, conversion and inventory.

- Add prioritizing scoring based on estimated revenue impact.

📄 View JSON Workflow: Project 4 JSON Link

🖼 View Sample Output: All Insights Link

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Market Intelligence Dashboard

Bringing All Agents Together → Live Insights for Wayfair Rugs Team

🎯 Objective:

To unify trend, competitor and insight data into a single dashboard that enables Wayfair Rugs team to quickly interpret market intelligence and make confident decisions.

⚙️ How This Works

The dashboard does not require a manual input. When executed, it pulls structured outputs from all agents stored in Supabase. Data is aligned, validated and transformed into readable tales and summaries. The final, stakeholder-facing view is delivered in Google Sheets.

⚠ Keep in Mind / Implementation Notes

- Insights are strongest when multiple data streams reinforce the same signal.
- Supabase acts as the single course of truth; Google Sheets is the viewing layer.
- Designed for quick scanning, not deep technical analysis.

💡 Improvements / Expansion Opportunities

-Incorporate SKU- level performance metrics to tie insights directly to actual sales.

- Add predictive trend modeling to forecast upcoming shifts in customer behavior.

- Connect dashboard outputs directly to internal Wayfair tools or BI platforms.

📄View JSON Workflow: [Sheets Integration JSON Link](#)

🖼 View Dashboard: [Executive Summary Link](#)

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Reflections & Future Improvements

What I Learned and How I Can Make It Better

🧭 Key Learnings

- Leveraged automation to integrate multiple data streams and generate actionable insights.

- Gained experience in competitor monitoring and identifying market opportunities.

- Recognized the importance of structured inputs for accurate, decision -ready insights.

- Developed skills in designing and implementing AI workflows for real-world applications.

🚀 Future Improvements / Next Steps

- Integrate SKU performance metrics ad expand data sources, including social media, for richer trend analysis.

- Refine AI prompts to generate brand-aligned and more creative content suggestions.

- Enhance automated insight generation to reduce manual input and improve efficiency.

- Develop intuitive dashboards and implement feedback loops to improve visualization and recommendations.

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Thank you for your time!

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