A FIELD GUIDE TO REIMAGINING THE RETAIL VALUE CHAIN FOR THE AGENTIC ECONOMY

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MILO AND THE RETAIL MARKETPLACE.

PART 3: AGENTIC AI DEEPENING SUPPLIER-RETAILER PARTNERSHIPS

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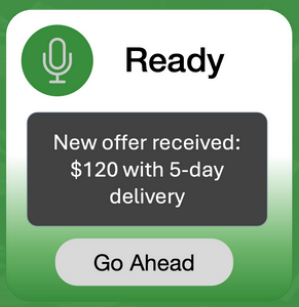


PREFACE: WHAT HAPPENS NEXT IN RETAIL

Retailers are under pressure to deliver more automation, more personalization, and more efficiency. Most efforts focus on improving what already exists. But a different model is taking shape—one where AI agents act on behalf of customers, working across systems to complete real tasks with minimal input.

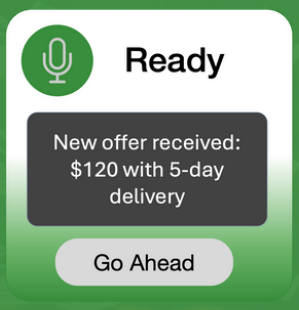
This paper introduces a set of ideas that help explain how this shift will unfold. It is not a technical manual, and it does not assume implementation is around the corner. Instead, it offers a way to think differently about the systems we build and the assumptions we carry into that process.

The underlying technologies are already here. They are not yet reliable enough to manage mission-critical operations at scale—but they are improving fast. Every month, what was previously experimental becomes product-ready.

The deeper shift is in how collaboration between retailers and suppliers happens. Instead of relying on meetings and contracts, agents negotiate, coordinate, and solve problems together in real time. These agents operate across company lines, linking retailers, suppliers, logistics networks, and payment systems through structured, machine-readable requests.

To support this, organizations need shared protocols, interoperable data models, and the confidence to let agents act without constant human supervision. This approach enables faster decisions, more accurate responses, and scalable coordination across the entire value chain.

This paper is written for decision-makers who want to stay ahead of that curve. Not to react later, but to prepare now.



7. RETHINKING VERTICAL INTEGRATION: LINKING RETAILERS AND VENDORS

THE LIMITS OF SILOED OPTIMIZATION

Retailers and vendors rely on the same supply chain, but often move in different directions. A retailer wants to avoid lost sales, so it builds buffer stock in its distribution centers. This protects availability, but it ties up capital and increases waste, especially with perishables.

On the other side, a vendor might optimize for full truckload deliveries or batch-based manufacturing, even if that introduces lag between real demand and actual production. Both sides act logically, but the result is a system with unnecessary friction, where one party's efficiency becomes another's inefficiency.

These trade-offs are not caused by poor decisions. They are the outcome of incomplete visibility and delayed coordination. Every player is optimizing within their lane. But no one is orchestrating the whole.

AGENTS AS CROSS-BOUNDARY OPTIMIZERS

AI agents shift the center of gravity. They are not limited by org charts or quarterly review cycles. A retail agent that monitors store sell-through can share that data directly with a vendor agent managing production or distribution. This link allows actions to be taken while the data is still fresh.

In this setup, the retailer becomes a signal amplifier. It stops holding inventory for every possible scenario and starts passing structured intent upstream. The vendor can use that intent to plan manufacturing, adjust shipment timing, and reduce overproduction. Some elements of this model are already in place. Retailers like Walmart share sales data with strategic vendors through systems like Retail Link. But these platforms

still rely on human teams to log in, analyze trends, and make decisions after the fact. Agents can eliminate that delay. They respond as events unfold, not hours or days later.

INTENT AS SUPPLY CHAIN INPUT

When I asked Milo to find the pink Sambas, I wasn't trying to trigger a warehouse restock. But that is exactly the kind of signal that systems have never had access to. Milo held the request quietly. It knew my budget, my size, my preferences. And it waited until a seller offered the right combination of quality, price, and trust.

Multiply that behavior by millions. Each personal agent holding structured demand, across categories, geographies, and budgets. These aren't casual preferences. They are organized requests, set by real people, persistent over time, and waiting for fulfillment.

If retailer agents can gather those signals, and pass them to vendor agents in real time, the entire value chain becomes coordinated. Production can shift before shortages happen. Logistics can adjust to meet emerging demand. Pricing strategies can flex without blunt promotions.

Milo is not just helping me buy. It is showing what is wanted, where, and when. These intent signals are more valuable than any historical sales graph. They give the supply chain something it has always lacked — clarity before commitment.

And when every link in the chain is agentic, those signals can flow without friction. Consumer agents initiate, retailer agents interpret, vendor agents respond. It becomes a conversation, not a cascade.

That is how demand begins to guide supply, in real time, without adding more dashboards or manual analysis. It starts with a single agent holding a request. And it scales from there.

THE AGENTIC STORE AS INTERFACE

Physical stores are part of the supply chain, but they've long been treated as endpoints. The concept of the agentic store changes that. Sensors detect inventory levels. Shelf agents monitor customer interaction. Checkout agents log not just the transaction, but the conditions that led to it. These signals are structured and can be picked up instantly by upstream agents.

Now imagine that store-level

activity being interpreted by a network of agents. A surge in local sales triggers a delivery from the closest warehouse. That signal also reaches the vendor agent, who shifts production to meet the change in demand. No weekly report required. No spreadsheet needed. The store becomes a live interface between the customer and the factory.

Agentic systems also act within the store itself. Shelf prices can be updated dynamically based on local conditions. Staff can be directed to restock or reface products where shelf activity suggests high demand. In time, foot traffic and purchasing behavior could shape staffing levels or even store layout. The store becomes an orchestrated environment — responsive, adaptive, and aware.

That is the difference between reacting to lagging indicators and responding to active signals. The store is no longer a black box. It is a sensor in the system.

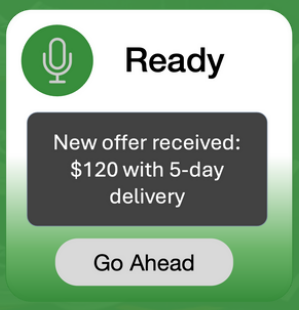
REWIRING RETAIL AROUND SHARED INTELLIGENCE

When agents are embedded throughout the value chain, the goal is no longer to optimize each part in isolation. It is to create shared intelligence. Each organization maintains its focus, but now works with access to richer, more relevant signals from the rest of the system.

Forecasts become rolling conversations. Production becomes a response to actual demand, not assumed patterns. And replenishment happens with less waste, because it starts earlier and fits better.

The infrastructure is changing. Milo may be acting on behalf of one person, but the effects ripple outward. A request held by an agent today is a production input tomorrow. That is the beginning of a system that learns not just what has happened, but what is about to happen — and prepares accordingly.

That is what agents make possible. Not faster transactions. Smarter collaboration.



8. FROM EDI TO SEMANTIC SUPPLY CHAINS

THE LIMITS OF EDI IN AN AGENTIC WORLD

Retail supply chains have long depended on Electronic Data Interchange, or EDI. It works. It moves inventory, coordinates logistics, and connects retailers to suppliers through structured fields like SKU, quantity, delivery window, and price. For decades, it's been the language of operational efficiency.

But EDI wasn't designed for Personal AI shoppers. Milo isn't placing bulk orders. It isn't trying to refill a warehouse. It's trying to fulfill a specific customer request — down to the size, color, condition, shipping timeline, and price point. That level of precision can't be handled with just a SKU and a product ID.

In traditional systems, product information lives inside human-readable pages or internal systems optimized for batch processing. That's fine when the buyer is a person reading a product description. It fails when the buyeis a machine that needs to reason, compare, and act.

Agents need structured meaning, not just formatting. They must interpret nuance across product variants, delivery options, and seller terms. That requires a product catalog built for reasoning, not just for display.

This is where semantic infrastructure becomes critical. Because once agents are involved in retail — not just as tools, but as buyers — the way we represent products will need to change.

THE PINK PROBLEM: WHEN SEMANTICS BREAK DOWN

When I asked Milo to find the Messi Edition Adidas Sambas in Inter Miami pink, size 41, the request was clear. That colorway is specific. The product name, the label, even the SKU often contain "pink." But that's not always the case.

In many ecommerce catalogs, product colors are named with a blend of marketing flair and brand nuance — Coral, Rose, Blush, or Sunset Peony Whisper. A human shopper sees the image and knows what they're looking at. They don't need the label to match their intent exactly. But Milo does.

Milo can process product photos, but it doesn't rely on them. It works from structured signals — tags, attributes, metadata. If a site calls something Coral but the request is for Pink, the agent may discard the match, not because it failed to understand, but because the data was too vague or too stylized.

Now imagine Milo searching for Coral lip gloss across multiple vendors. Without a standard definition of Coral or a consistent way to express it, the agent either over-filters and finds nothing, or under-filters and returns too much. Neither outcome builds confidence. Milo will favor the sites that describe products in terms it can interpret precisely and consistently.

This is what makes semantic product data a new competitive advantage. When an agent is acting on behalf of the customer, a missing tag or ambiguous term is the equivalent of not being on the shelf.

BUILDING PRODUCT DESCRIPTIONS FOR AGENTS

Most product descriptions are designed to appeal to human shoppers — optimized for persuasion and SEO. But agents like Milo are not skimming or browsing. They are evaluating. They parse structured data, match constraints, and make decisions. What agents need isn't marketing language — it's structured facts they can act on.

1. Use structured schemas
Apply standards like Schema.org/Product to define attributes such as brand, size, color, and availability. Format data in JSON-LD or microdata so agents can parse it directly.

2. Write declarative, standardized content
Use one feature per sentence and standard units. Section headers like "Product Features" or "Care Instructions" help agents extract information efficiently.

3. Declare compatibility and context
State clearly if the product works with other items, apps, or collections. Agents rely on explicit links to recommend and assemble complete purchases.

4. Make constraints explicit
Indicate non-negotiables such as return policies, authenticity guarantees, or quantity limits. Agents treat these as filters, not optional details.

```
{
  "@context": "https://schema.org/",
  "@type": "Product",
  "name": "Adidas Samba OG - Messi
Edition - Inter Miami Pink",
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  },
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  "sizeEquivalent": {
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    "UK": "7.5",
    "EU": "41"
  },
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  },
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not machine wash","Store in a dry, cool
place"
  ],
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app",
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  "releaseDate": "2025-06-01",
  "itemCondition":
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discounted items",
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guaranteed by authorized Adidas
distributor",
  "purchaseLimit": "1 per customer"
}
```

Structured, clear product data lets agents transact confidently, enabling trust and scale.

MCP AND A2A: POWERING AGENT AUTONOMY

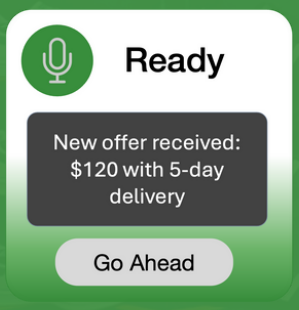
For agents to operate independently across the web, they need more than access. They need a protocol to request and interpret structured information, exchange credentials, and coordinate with other agents securely. That's where the Model Context Protocol (MCP) and Agent-to-Agent (A2A) communication come in.

MCP allows Milo to query retail systems in a structured way — not just by parsing HTML, but by sending a formal request for size, color, delivery time, price range, and proof of authenticity. The vendor's system responds with standardized, machine-readable product data. This removes the ambiguity of human-facing pages and replaces it with data designed for direct evaluation.

Color must be defined using shared standards. Authenticity should come as a verifiable claim, not a logo. Reviews must be traceable to real customers. MCP enables this by delivering product details in structured, machine-readable formats that agents can act on immediately — without guesswork, without scraping, and without ambiguity.

A2A extends this further. Milo may be dealing with more than one agent — a payment agent from Mastercard, a logistics agent from the delivery service, and product agents representing various sellers. Milo can now compare offers across vendors, run apples-to-apples evaluations, and select based on the preferences and constraints I've provided. Each interaction is conducted through authenticated, permissioned messages. Capabilities are declared, tasks are assigned, and the full purchase process is executed through coordinated agent action.

Enablement of autonomy is the foundation of agentic commerce: structured data, shared protocols, and a network of interoperable agents that can transact with confidence and precision.



9. WHAT NEEDS TO CHANGE TO BUILD AGENTIC RETAIL

STILL SHIPPING, BUT RETHINKING THE SIGNAL

Retail leaders still face real, operational challenges. From last-mile logistics to inventory shortfalls and channel conflict, the work of refining the physical engine is far from over. But while these issues remain urgent, a second shift is beginning to take shape — one that moves deeper than logistics or fulfillment.

When Milo found the pink Sambas, it wasn't driven by promotions or digital targeting. It responded to a structured expression of intent, and matched it with the right supply at the right moment. That interaction didn't require a human interface. It required systems that could hear demand in real time and respond intelligently.

This opens the door to a tighter relationship between retailer and vendor, not mediated by attribution models or conversions, but by structured signals that reflect actual customer intent. What we've described in this paper is not yet the norm — but it is increasingly possible. The technology is maturing. The patterns are emerging. And the lessons from other industries suggest that this shift, while not yet here, is coming soon.

FIVE FOUNDATIONS FOR AGENTIC RETAIL

To make agentic commerce real, retailers must prepare core parts of their stack to work with software agents. Five transformations matter most.

1. SEMANTIC PRODUCT DATA

Agents need data they can process, not descriptions meant to persuade. Product size, color, availability, constraints, and pricing must be declared in standard formats. Schema.org, JSON-LD, and consistent taxonomies turn listings

into machine-readable truth. Milo only succeeds if the product describes itself in clear, structured language.

2. AGENT-READABLE INTERFACES

Agents do not use browsers. They interface directly with services. MCP and A2A protocols let them log in, check stock, validate warranties, request service, and place orders. These protocols replace scraping with clean access. Milo can move through a transaction without guesswork or workarounds.

3. INTEROPERABILITY INFRASTRUCTURE

Agents need a way to find one another and route requests. Three pieces matter:

Agent Marketplaces are where verified agents can be published and discovered. Zencoder's Zen Agents has already launched for software teams. Milo searching for a modular sofa doesn't scroll listings. It finds brand agents in a marketplace who confirm materials, availability, and delivery options.

MCP Registries help Milo navigate complex ecosystems like Amazon, where different agents manage payments, subscriptions, shipping, and returns. Rather than guessing which interface to use, Milo consults a registry that maps agent roles, capabilities, and access endpoints. NANDA project from MIT extends MCP with discovery protocols so agents can find each other, search mechanisms to query distributed knowledge, secure authentication to verify legitimacy, and traceability for full accountability in agent-to-agent interactions. NANDA creates a structured, searchable layer for agentic services, much like DNS did for the internet.

NL Web gives long-tail sites a simple way to respond to agent requests using natural language. Developed by Microsoft, Natural Language (NL) Web enables businesses to expose their content and services using structured, natural interaction without having to build a full agent stack. Sellers that cannot build a full agent can still answer Milo's question: do you stock this item, in this size, at this price?

4. OPERATIONAL PARTNERSHIPS

Coordination happens through interoperable agents that go deeper than EDI and shared dashboards. Retailer and vendor agents can align stock, pricing, logistics, and promotions without waiting for human approval. This requires clear policies, mutual

trust, and shared protocols. It also means acting on real-time data, not reports

5. TRUSTED AGENTS

Security is the missing piece in most agentic conversations. When autonomous agents act on behalf of real people, retailers must distinguish between legitimate actors and bad ones—before any transaction occurs. A trusted agent is formally registered, linked to a verified organization, and audited for how it handles credentials and consent. Platforms like Sardine are already developing directories that track agent identity, operational history, dynamic trust scores, and fraud exposure. Permissions are scoped and time-bound. Trust is not a feature. It is infrastructure.

FIVE FOUNDATIONS FOR AGENTIC RETAIL

Every transformation in retail has followed a familiar pattern: the tools evolve, the expectations shift, and the leaders are those who respond with intention. We're standing at that edge again.

Your customer is no longer just browsing. They are delegating. Their agent is out in the world, making decisions, narrowing options, and negotiating outcomes. That agent will not wait for login screens or filter menus. It will choose systems designed for autonomous interaction.

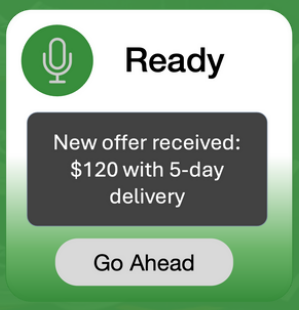
You've spent years and millions building ecommerce systems for people. That investment brought reach, efficiency, and performance. But the edge is shifting. Developing for agents is no longer speculative. It is now a question of readiness.

The core technologies are in place. Open protocols like MCP and A2A are maturing. Structured data models are standardizing. Agent marketplaces and registries are being launched. The toolchains for building, deploying, and governing agents are forming fast.

This isn't just a new channel. It is a new model of commerce—driven by interaction between systems, not just clicks from users. It is a shift from transactions to trust, from conversion funnels to continuous intent.

So what happens next is not a technology decision. It's a leadership one. The opportunity is real. The window is open. And the organizations that act now will shape the standards to come.

The rest will adapt on someone else's terms.



WHAT COMES NEXT

THE IMPLICATIONS FOR LEADERS

Agentic commerce is not a theoretical model. It's a structural shift in how demand is expressed, matched, and fulfilled. This shift affects more than just consumer interfaces. It changes how internal systems, external partners, and data flows align. The goal of this paper was not to advocate for immediate implementation, but to prompt serious thinking. Are you preparing your organization for a world where intelligent agents represent buyers, partners, and suppliers?

WHERE THE TECHNOLOGY STANDS

At the time of publication, the core technologies — Model Context Protocol (MCP), Agent-to-Agent (A2A) communication, and registries like NANDA — are still evolving. Personal agents like ChatGPT and Gemini already operate in limited capacities. Voice commands can lead to purchases. Payments can be tokenized. But enterprise-scale commerce requires more: traceability, fault tolerance, recoverability, and secure interoperability. The tools are not enterprise-ready yet. But they will be, and they are improving quickly.

WHAT IS ALREADY POSSIBLE

Agents today can compare prices, evaluate reviews, and fill out purchase flows. Some interact with screen elements, others can act through APIs. Wallets are beginning to hold verifiable credentials. Payment agents are becoming capable of completing secure transactions. These capabilities exist — imperfect but usable — and they are showing up inside organizations through employees and consumers. Many companies are already engaging with agents, even if unintentionally.

A DIFFERENT KIND OF READINESS

Traditional tech adoption follows a steady curve. Build the tool, optimize the process, harden the practice. Agentic commerce breaks that cycle. The technology changes fast. Capabilities extend into new areas monthly. There is no fixed state to build around. Instead, readiness becomes a habit: the ability to act with confidence even as the foundation moves. Agentic systems will impact not just marketing and merchandising, but fulfillment, support, and planning. Just as SEO and SEM forced continuous adaptation, agent-based commerce will demand the same — across every function.

WHAT TO DO NEXT

The right approach depends on where you are. If your systems are modular and your data is clean, start experimenting. Structure your product data, build agent-ready interfaces, and test how systems respond to agent traffic.

If you're dealing with technical or operational debt, invest there first. Modernize your architecture. Push for standards. These actions create near-term value and long-term readiness.

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If you take a late-mover stance, stay alert. Watch the metrics. Track adoption of wallets, agent-based referrals, and vendor-facing agent interfaces. Being ready to respond quickly is still a form of leadership

WHAT TO DO NEXT

Three indicators signal that agentic commerce is gaining ground:

Digital Wallets Go Mainstream
Once 30% of mobile users adopt wallets that store verifiable identity and preferences, agents will have the foundation to act autonomously.

Search Attribution Begins to Blur
A 10 to 15 percent decline in SEO/SEM traffic, replaced by "unknown" or direct agent-originated sources, signals a change in discovery behavior.

Vendors Launch Agent Interfaces
When suppliers and logistics providers begin offering agent-compatible APIs, the infrastructure is no longer experimental — it is operational.

You do not need to jump in blindly. But you cannot afford to look away. If you want help figuring out what readiness looks like in your context, let's talk.

Gam Dias - Principal, Agents Unleashed

Gam Dias is one of the leading voices on Agentic AI. With more than two decades in data and technology strategy, he now advises global organizations on how to prepare for a future shaped by intelligent agents.

Gam is co-founder of Hubbl Process Analytics, a process mining platform built for the Salesforce ecosystem, helping companies get automation-ready. Previously, he led data strategy at Aviva and designed the IBM AI for Leaders program, guiding executives to apply AI responsibly and at scale. His work sits at the intersection of business transformation, responsible innovation, and real-world AI deployment.

To Kim - Principal First Retail Inc.

To Kim is the go-to technology advisor for a growing list of ecommerce businesses and their vendor networks. Known for his clear, pragmatic guidance, he helps organizations navigate change across SaaS, analytics, and enterprise architecture.

First Retail is a specialist consultancy focused on data and technology transformation. From Silicon Valley platforms to global industrials and high-growth startups, the team at First Retail has designed scalable digital roadmaps, delivered enterprise-grade infrastructure, and led applied data science projects. Clients benefit from Big 5 experience delivered by senior experts, without the overhead.

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