

Future-Proof Your Bike Business: How Smart Product Data Management Ensures Your Products Are Chosen by AI, Agents & Automated Commerce

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1. The Coming Shift: AI Prompts & Agentic Commerce Will Choose the Winners

The bicycle industry is entering a transformation more significant than the jump from paper catalogs to e-commerce. Consumers will increasingly rely on AI assistants, personal buying agents, and automated recommendation engines to choose bikes, components, gear, and accessories. Product discovery won't start with Google or YouTube—it will start with a prompt, such as:

- "Find me the perfect gravel wheelset for rough terrain and a \$700 budget."
- "I need a comfortable commuting bike that fits a 180 cm rider and has low maintenance."
- "What brake pads fit my 2021 Shimano 105 calipers?"
- "Order a replacement tire compatible with my e-bike."

AI will generate a shortlist and sometimes place the order automatically. **AI, not the consumer, becomes the first decision-maker**, meaning only products AI can accurately identify and match will be recommended.

The New Reality: If Your Product Data Isn't AI-Ready, You Don't Exist

AI systems don't "guess" what your product is. AI systems rely on structured information, compatibility details, clear descriptions, and rich attributes. Incomplete or inconsistent data means your products won't be considered—no matter how good they are. Forward-thinking companies that invest in modern product data management will:

- Appear in AI-generated product lists
- Show up in prompts
- Become the "default recommendations" AI agents trust
- Capture more automated, high-intent sales
- Reach new customer segments
- Reduce dependency on traditional marketing channels

AI Discovery Unlocks Entirely New Customer Segments

For decades, cycling has sold primarily to enthusiasts who understand technical standards. But the industry's growth potential lies far beyond this core group: new, less-technical customers who will rely on AI to choose bikes or components. They won't decode specifications—they'll trust AI. To reach them, brands must ensure their

products are discoverable, understandable, and AI-ready. Without clean, rich data, your products simply won't appear in the searches of this next wave of consumers—leaving enormous growth on the table.

We're rapidly entering a world where AI systems don't just recommend products—they *purchase* them on the consumer's behalf. Once an AI agent understands your bike, components, tire sizes, gear preferences, and riding style, it becomes your automated shopper.

That means winning is not just a marketing game, it becomes a data game.

What Platforms Like Shopify Are Already Doing — and Why It Matters to You

Leading e-commerce platforms are already laying the groundwork for this shift. Shopify recently introduced a structured, unified product-data index, known as the Shopify Catalog, along with tools such as "universal cart" and integrated checkout that let AI agents discover and surface merchant products in real time.

Thanks to that infrastructure:

- AI-driven tools and chatbots can access live product data — including pricing, availability, variants, images, and structured attributes.
- Merchants on Shopify potentially appear directly in AI-driven recommendation flows and conversation-based shopping experiences, such as those powered by ChatGPT / OpenAI, without needing separate feeds or manual reformatting.
- As more AI agents and platforms hook into this infrastructure, the importance of structured, complete, AI-ready product data becomes a key competitive advantage for any retailer or manufacturer.

Why Acting Now Is Critical

AI engines are already being trained on available product data today. The companies preparing their product data now will:

- Shape how AI agents understand their products
- Lock in visibility across automated systems
- Gain early-mover advantage before the industry catches up

Those who delay risk watching their competitors become the only options AI recognizes and recommends.

2. The Bicycle Industry's Product Data Problem

While the industry innovates with lighter frames, smarter electronics, and improved aerodynamics, product data quality lags. Information is often fragmented, inconsistent, or re-entered across systems, making it incomplete or inaccurate. This has always been a challenge for the industry—but for AI-driven commerce, it becomes a critical barrier.

A Fragmented Ecosystem Leads to Fragmented Data

The bicycle industry has a unique complexity. Products aren't just simple article numbers—they're part of a web of hundreds of components, compatibility standards, fit requirements, and technical specifications. Yet today, most players still rely on:

- Spreadsheets maintained in different formats
- Information stuck in emails and people's heads
- One field in the ERP system that carries all key information
- PDFs with unstructured specs
- Legacy B2B portals
- Manual data entry at distributor or retailer level
- Product descriptions rewritten multiple times across the supply chain

The result: data that's inaccurate at best, invisible to AI at worst.

Inconsistent Naming, Specs, and Classification

The same product might be represented in dozens of different ways as it moves through the supply chain. For example:

- A tire labeled *"700×38c Gravel Tire"* by one seller appears as *"28×1.50 Touring Tire"* by another.
- A crankset described as *"170 mm, 50/34, 24 mm spindle"* elsewhere becomes *"Compact Crankset – Road"*.
- Brake pad compatibility lists are often incomplete or outdated, leaving retailers guessing.

When AI systems read this information, they cannot reliably match products or understand relationships—resulting in missed recommendations, lost visibility, and lagging sales.

Missing Attributes That AI Requires

AI models need far more detail than a typical e-commerce listing provides. Yet many bicycle product listings lack essential attributes such as:

- **Geometry / dimensions**
- **Materials and construction details**
- **Precise compatibility data** (hub standards, BB types, rotor sizes, tire clearance)
- **Performance characteristics** (stiffness, grip, intended terrain)
- **Rider use cases** (commuting, gravel touring, enduro racing)
- **High-quality, structured media** (images, 360°, video, alt text)
- **Complete and consistent technical specifications** across the entire category to make parts and bikes comparable

AI can't recommend what it doesn't fully understand.

The Impact on Each Segment of the Industry

Component Manufacturers struggle

- To introduce and stick to a consistent and harmonised naming and data structure across the entire portfolio
- To distribute clean, standardized data to hundreds of B2B partners along the entire supply chain worldwide
- To trace parts to bikes to manage repeated requests for clarifications on fitment, specs, or compatibility
- With misrepresentation of products—or no representation at all—across retail channels

Brands struggle

- To collect all necessary data in a structured way from suppliers - not just to produce the bikes, but bring them to market in an AI-ready way
- To align product teams behind the need for complete and consistent product data even when it is not needed to spec the bike in the first instance
- To keep a clean and harmonised record of each BOM/bike and its marketing specs along a hectic and constantly changing development process
- To establish a clear product data structure across the entire portfolio that is easy to maintain by the team and easy to understand by AI agents
- To identify missing attributes on component and bike level, leading to lost market visibility

- To keep product data and messaging consistent and AI-ready across marketplaces

Retailers struggle

- As they rely on the fragmented supply chain to get all the necessary product data
- To spend countless hours manually collecting and rewriting or correcting product information
- With missed sales because AI tools cannot confidently recommend products to customers

3. Why AI Agents Need Rich, Structured Product Data

We've established that AI and agentic commerce are the future of product discovery. But how exactly does AI "choose" which products to recommend? The answer lies in structured, rich product data. Without it, even the best bikes, components, or accessories can be invisible to AI.

How AI Interprets Product Data

Unlike humans, AI doesn't rely on intuition or experience. It relies on structured information—clear, consistent, and complete data points that it can analyze and reason with. For example, an AI agent can understand your product if it knows:

- **Attributes:** size, weight, material, color, compatibility
- **Relationships:** which tires fit which wheels, which brake pads fit which calipers
- **Use cases:** commuting, gravel, downhill, e-MTB
- **Performance characteristics:** stiffness, traction, durability
- **Media:** high-resolution images, 360° views, videos, alt-text

When these elements are complete and machine-readable, AI can confidently recommend products for specific scenarios, budgets, or user profiles.

Why Structure Matters More Than Ever

AI models generate recommendations by linking vectors of information. If data is inconsistent or unstructured, the AI may:

- Misclassify products (a gravel wheelset might appear as a road wheel)
- Miss key compatibility details (a hub or bottom bracket that doesn't fit)
- Fail to rank your product in recommendations at all

Structured data ensures that AI can “understand” every relevant product characteristic—turning raw specs into actionable insights for agentic commerce.

AI Shortlists Are Attribute-Driven

Think of AI agents as reasoning through a “decision chain”:

“User wants a gravel wheelset compatible with 12×100 front / 12×142 rear, 40–45 c tires, under \$800.”

The AI evaluates all available products against these criteria. If your data lacks hub dimensions, tire clearance, or price, your product is eliminated before the user ever sees it. Even a technically perfect product is invisible without complete, structured information.

4. What Bicycle Companies Can Do Now: A Clear Product Data Roadmap

The good news is that the solution to AI invisibility is straightforward: invest in clean, structured, and enriched product data. Component manufacturers, brands, and retailers who act now can position themselves as the default choices in AI-driven discovery and agentic commerce. Here's a clear roadmap.

1. Audit Your Product Data

Start by understanding what you already have—and what's missing. Conduct a comprehensive audit:

- Identify missing attributes, specifications, and media
- Assess inconsistencies across your product portfolio
- Map gaps in compatibility, sizing, and standards (hub spacing, BB types, tire clearance, etc.)
- Understand the process of product data management from start to finish; from engineering and design, to product development, compliance, marketing sales and customer support. This will help you identify challenges and where things get stuck or missing.

- Identify the cost drivers in that process and speak to your operational staff of what it is really like to manage that data.

An audit establishes a baseline and highlights the most urgent improvements.

2. Implement a Single Source of Truth and Automate Processes

One of the biggest challenges in the bicycle industry is fragmented data across teams, departments, and systems. By implementing PLM (Product Lifecycle Management) and/or PIM (Product Information Management) systems, companies can centralize all product data—across teams and marketing channels. Bike brands and manufacturers should especially consider a digital BOM tool that tracks product data and changes along the development process. Benefits include:

- A single source of truth for all product attributes, specifications, images, and media
- Process automation, reducing manual updates and errors
- Easy synchronization across internal teams and external partners
- Machine-readable, AI-ready data for agentic commerce

Automating workflows and enforcing data governance ensures that your product data is always accurate, complete, and actionable.

3. Adopt and Enforce Taxonomies

Standardization is critical for AI discovery. By aligning to a harmonised taxonomy and classification:

- Products are easier for AI to interpret and compare
- Compatibility and fitment are clear across the ecosystem
- Cross-platform integration (marketplaces, AI agents, e-commerce platforms) is seamless

4. Enrich Your Product Data

AI thrives on rich, descriptive data. Go beyond basic specs:

- Add **use-case descriptions**: “ideal for gravel racing,” “for commuting with panniers”
- Include **features and benefits** for each product

- Answer the **most common questions** your customers have
- Map **compatibility**: components, accessories, and replacement parts
- Provide high-quality **media**: images, 360° views, videos, alt text for accessibility and AI interpretation

Enriched data increases the likelihood your products appear in AI recommendations and conversions.

5. Prepare Media for AI Commerce

AI agents don't just read text—they interpret media. Ensure that all visual assets are:

- High resolution
- Labeled with machine-readable metadata
- Consistent across products and categories

Well-prepared media allows AI to showcase your products more accurately and persuasively.

6. Establish Continuous Data Governance

Product data isn't a one-time project—it's ongoing:

- Schedule regular updates and audits
- Automate validation and consistency checks where possible
- Ensure cross-department collaboration between product, procurement, marketing, sales, and IT teams

Continuous governance keeps your product data AI-ready and ensures long-term competitive advantage.

Bottom Line: Companies that centralize, enrich, and automate their product data now will dominate AI-driven product discovery. Those that continue to rely on fragmented spreadsheets and manual processes risk invisibility in the commerce of the future.

5. How the NOCA Portal can help you take charge of your product data

NOCA already offers exactly the kind of infrastructure component manufacturers and brands need to thrive in an AI-driven world. With the NOCA Portal you can create a single source of truth — centralising all product data (components, complete bikes, BOMs, specifications, images, documents, pricing, versions) in one unified, harmonized, and industry-specific structure. This eliminates fragmented spreadsheets, inconsistent data entries, and version chaos — creating a clean, machine-readable dataset that AI agents can reliably parse and recommend.

Beyond just data storage, NOCA helps you automate workflows across product development, procurement, marketing, sales and with supply-chain partners:

- BOM development becomes drag-and-drop like with automated cost and weight tracking;
- Marketing and spare-parts lists are generated automatically;
- Complex pricing models and version control flow through the system seamlessly.

For component suppliers, OEM brands, and assemblers, this means dramatically reduced manual workload, fewer errors, faster time-to-market — and most importantly, product data that is consistently clean, structured, and ready for AI discovery and recommendation.

Finally, because NOCA is purpose-built for the cycling industry, its data model reflects real bike terminology. That makes it far more easy and effective than a generic PIM/PLM system: right out of the box, you're aligned with the semantics and complexity of bike-specific data — meaning your products are maximally prepared to be found, understood and recommended by AI-powered commerce agents.

In short: NOCA doesn't only give you better data — it gives you a strategic foundation for the next generation of AI-driven product discovery and sales.