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DATA DEMANDS
OF MACHINE-INITIATED PURCHASES?

WHY CLEAN, SEO-OPTIMIZED PRODUCT DATA IS A NEW BUSINESS IMPERATIVE

retail
TouchPoints®

WHITE PAPER

As many as 50 billion devices may be connected to the Internet by 2020,[1] and the definition of "customer" has become much more complicated. That seismic shift in who — or possibly what — handles the purchase decision is having both short- and long-term ramifications for retailers. Chatbots and smart assistants that use machine learning are seeping into the retail shopping journey as new purchase decision-makers.

Significantly elevated in importance by this evolution is **product information** (the digital data about a product, including title, description, images and reviews/ratings, as well as wide-ranging attributes such as size, color, dimensions and price). Rich and accurate product information (also often referred to as "product data") is essential to success in an increasingly competitive and technologically savvy marketplace. Incomplete, inaccurate or improperly tagged product data can cost retailers millions in lost sales by preventing people and machines from finding the items they're seeking.

Better product data improves merchandise search and discovery, drives e-commerce traffic, decreases returns and increases customer loyalty. This iPaper outlines the benefits of investing in the systems and technologies that will elevate the quality of your business's product information, and explains why it will prepare you for a future that combines machine-initiated decisions with human interactions.

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Now Is The Time To Optimize Product Data

Accurate product data is essential to customer engagement and conversion. Consumers will go elsewhere if the information they see on your web site lacks detail or is incorrect. Almost 80% of consumers say that product information is very important when making purchase decisions, according to a recent study.[2] Poor product content also has a negative impact on returns and brand loyalty/trust, with more than 42% of consumers stating they had returned an online purchase in the past year specifically because of poor product content. 87% said they would be disinclined to give a retailer a second chance if they were given bad product information for a purchase.[3]

In the not-too-distant future, the Internet of Things (IoT) and smart devices — appliances, phones and digital assistants like Amazon's Alexa — will be making many purchase recommendations and decisions. These AI-powered smart devices leave little room for incomplete or inaccurate product data — if the product information does not align with the machine's interpretation of the shopper's needs, then that product will be ignored as a viable purchase option.

IoT devices further extend the reach of the machines into product purchases. In fact, consumers are the fourth-largest market for IoT spending (after manufacturing, transportation and utilities), according to the International Data Corp. (IDC).[4] Retailers ignoring the current and future value of IoT will risk losing business to the competition. "Retailers that hesitate to develop an IoT strategy will open the door for competitors — old and new alike — to swoop in and capture early IoT mindshare and market share," wrote Jonathan Gregory, author of an Accenture report on growth in IoT.[5]

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The Intersection Of Better Product Data With IoT

As IoT devices take on more responsibility for purchases, retailers will need to understand how machines make decisions when evaluating and ultimately buying products. In the early stages, it's likely that these devices will purchase using simple, basic product information, such as preferred colors and brands. But as the industry matures and IoT platforms become more sophisticated, AI and machine learning will factor a larger mix of data into purchasing decisions. This will present an opportunity and a challenge for retailers.

The shift from a human audience toward one populated by devices will demand a different approach to data delivery. Detailed product information with easily searchable and structured attributes will be more important than ever, because it better enables machines to sort through product offerings and make the right choice.

Unfortunately, great digital product information isn't born at the manufacturer. It's made great by retailers and merchants. As such, retailers must recognize and invest in making their digital product information as robust as possible. Without that investment, products will not stand

out when grouped with similarly identified competitors' products, and that decreases their chance of being recommended by the machines. A more effective and cost-efficient solution involves teaming up with third-party sources, like Indix, that gather and structure product data on millions of products and can supply UPCs, Manufacturer Part Numbers (MPNs), standardized attributes, and even NLG (Natural Language Generation)- generated and SEO-optimized titles and descriptions.

AI/machine learning also can be used for **cleaning and structuring product information**. In some cases, a product may not have been categorized correctly for optimum SEO or for a faceted search experience. An AI-powered solution can assign products to proper categories, including subcategories. For example, "NIKE SF AIR FORCE 1 MID" and "NIKE COURSE CLASSIC" could be simply categorized into "Shoes." AI, however, would understand that the first also belongs in Women's Shoes, while the second can be part of Men's Shoes as well as Golfing Equipment. The Indix platform offers 7,000-plus categories, which assists with SEO, navigation and overall product discovery.

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The Benefits of SEO-Optimized Product Data: Today and Tomorrow

There are several strong arguments for ensuring that an ecommerce site features more accurate and robust product data — today and in the future.

Current Benefit 1:

Helping Shoppers Find the Right Products

Investing in improved product data equals an increased likelihood that both people and search engines will find your products. Page and site ranking hinge on accurate product information to avoid sending shoppers to irrelevant products and quickly causing them to go elsewhere.

Case in Point

Footwear retailer **Zappos** understands the value of robust product information. The retailer has constructed unique and detailed product descriptions that expose better product data for search engines, to improve page rank and drive the right customer to the right product page. For example, the company weaves in technical details and often a video modeling the shoe. Suggested complementary fashion items are also listed. The additional information paints a picture of the shoe and provides more entry points for searches to land on the page.

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Current Benefit 2:

Better Conversions, Fewer Returns

Getting a shopper to a page is one thing, but getting that shopper to buy (convert) is the real goal. Detailed product descriptions, developed from accurate product data, will help the shopper feel more confident about a purchase decision and less likely to bounce before completing a sale. Poor product descriptions are one of the top three reasons shoppers abandon shopping carts.[6] A web site that features better information will result in more satisfied customers. That improved data also will decrease the number of returns from dissatisfied customers.

Case in Point

Home Depot's web site is known for its lengthy, detailed product descriptions, which provide better, more unique product data for machine-based decision-making. That data, along with moves to improve the mobile experience for users, has helped boost the home improvement retailer's conversion rate in recent years and increase online sales 19% in the most recent calendar year.[7]

CASE STUDY

Automated Data Strategies Improve Product Discovery

A Tier 1 retailer looking to compete online built a marketplace with more than 1 million products, but subpar data was keeping the site from performing at its best. Riddled with incorrect UPCs, inadequate product descriptions and incomplete product attributes, the marketplace was underperforming. Efforts to fix it were labor- and time-intensive and relied on variable-quality, seller-provided product information.

Given the choice between poor performance and building a huge team to fix the data manually, the retailer sought to automate the process more efficiently.

Partnering with Indix, the retailer improved product data with a solution that combines Indix standardized attributes and Natural Language Generation (NLG) capabilities from Indix partner Narrative Science. The solution matched marketplace products against its deep and rich taxonomy, then identified products with standardized attributes. Narrative Science's Quill platform ingested products with these standardized attributes and created SEO-optimized, unique descriptions that reflected the retailer's brand voice. As a result, the retailer gained better product discoverability and ultimately better conversion rates, while saving time and money in automating the process.

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Current Benefit 3:

Optimized Inventory Assortment

Working with a company that has a robust product database can help retailers identify their own brand gaps as well as competitors' weak spots in terms of categories, brands or products. This analysis results in a more effective product assortment, allowing retailers to set themselves apart from the competition.

Adding new product records to the digital catalog is faster and cheaper thanks to AI-standardized product attributes and NLG-created, SEO-optimized product titles and descriptions. Better product data together with AI can also help track purchasing patterns to project sales, determine the best pricing, actively promote underselling items to avoid markdowns, and forecast when popular items will need replenishing.

Case in Point

With advanced product data at the ready, retailers can make better decisions across the realm of business. **Rue La La**, for example, has tapped machine learning to help predict demand and assign pricing more effectively. As a flash sale fashion retailer, Rue La La must determine prices and forecast demand for one-time items it has never stocked before. Working with MIT, the retailer used machine learning to identify the product data that would more effectively estimate historical lost sales and predict demand for new items as well as provide data for competing styles. As a result, Rue La La created an algorithm to set optimal prices. The analysis made it clear that demand for individual items depended in part on prices of other items in the same category. The research team estimated that better pricing could increase the company's revenue by nearly 10%, with minimal impact on the quantity sold.

AI's Impact on Retail's Bottom Line

AI and machine learning can deliver significant results for retailers, including:

✓ Products and services at the right price, with the right message, to the right targets

✓ Accurate demand forecasting, smart sourcing and enlightened R&D

✓ 20% stock reduction using deep learning to predict e-commerce purchases

✓ 2 million fewer product returns per year

✓ Higher productivity and minimized maintenance and repairs

✓ 50% improvement in assortment efficiency

✓ 4% to 6% sales increase using geospatial modeling to improve micro-market attractiveness

✓ 30% online sales increase by using dynamic pricing and personalization

Source: McKinsey Global Institute: "Artificial Intelligence: The Next Digital Frontier?"

Future Benefit 1:

More Targeted Product Recommendations

With the IoT automating decisions that were previously human-controlled, retailers need to be able to satisfy the unique demands of machines. Three retail functions that IoT could improve upon are **supply replenishment**, **purchasing optimization** and **new product acquisition**. All of these functions can be optimized by automating the delivery of better product data.

Building upon the availability of automatic replenishment subscriptions, next we'll see machine-initiated replenishment. For example,

refrigerators will keep tabs on inventory and order groceries, washing machines will know when the detergent is about to run out and add a replacement to the shopping list, and a bed will track a child's growth spurts and determine when new clothes are needed.

Enabled with automated, SEO-optimized product data, the IoT will allow machines to act as the personal shopper that we have always wanted, learning our habits, likes and dislikes, brand preferences and more. It also will optimize sourcing to find the best deals and the products that most closely align with our preferences.

CASE STUDY

How Chatbots Win with Better Product Data

Machine-driven shopping — in the form of chatbots, among other things — is a new future reality for commerce. Boston Retail Partners' 2017 survey of 500 top North American retailers found that 14% have embraced AI-powered chatbots and digital assistants; another 32% plan to join them over the next three years.

Companies like Yellow Messenger are leveraging artificial intelligence to design curated personal shopping assistants to surface products within a chatbot. Users are able to conduct searches to learn more about brands as well as find the latest deals, discounts, freebies and promos from brands and businesses in real time.

These companies not only answer customers' questions, they're integrated with the inventory and ordering systems of clients' brands. So, for instance, if a Bloomingdale's customer is looking for a blue shirt, a chatbot like Yellow Messenger's will ask a few questions about style, size, price points, fabric and so forth, then return a number of links with recommendations to a selection of shirts that fit those specifications.

For this new form of shopping to succeed, platforms like Yellow Messenger will need clean, rich, structured product data. Retailers will have to standardize structured product attributes and brand information to surface offers for e-commerce companies' shopping bots, powered by companies like Yellow Messenger.

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Future Benefit 2:

Next-Gen Personalization Opportunities

Today's consumers want to do business with retailers that know their likes and dislikes and provide a more meaningful shopping experience. Brands that use personal information to make shopping experiences more relevant are acquiring more loyal, long-term customers. These achievements depend on the ability to make better, more relevant product recommendations based on better product data.

In a peek into future possibilities, chatbots already are leveraging better product data to provide targeted recommendations to shoppers. The North Face's chatbot asks a series of open-ended questions designed to narrow down the selection to relevant apparel. In another

example, Shop Direct, a UK-based online retailer, introduced the idea of fully personalized home pages that proactively reflect the registered user's habits and interests and serves up products that align with them.

In both of these examples, the companies must combine personal information with the right product information. With an automated solution in place, retail teams can abandon past systems: arduous manual processes to research and often guess which products should be delivered in these experiences. By tapping instead into data provided by Indix, for example, queries can be answered more effectively and in a fraction of the time. With AI-generated data, shoppers receive personalized product information, which builds brand loyalty.

Future Benefit 3:

Machine-Initiated Product Acquisition

Ultimately, robust product data could allow IoT machines to be proactive. For example, they could automatically order dinner to be delivered on a particularly busy day when the refrigerator or stove has gone untouched at dinnertime. By using machine learning to review and assess shoppers' habits and preferences, retailers will be able to provide more advanced data to IoT technology products, enabling the machines to make smarter recommendations and purchase decisions.

A similar process could apply to **Amazon**, which already alerts shoppers when the price of items in their shopping cart drops; instead of the alert, the virtual assistant could simply purchase the item and let the shopper know when to expect delivery. This capability has applications in many customer-facing businesses beyond traditional retail. In the **travel industry**, for example, airfare trackers keep tabs on price trends and recommend the right time to book a flight. In the future, thanks to AI, a personal buying assistant could not only detect a low fare, but also check it against desired travel dates and book the tickets automatically.

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3 Steps to a Better Product Data Strategy

1. **To Make Great Product Information a Strategic Imperative, Answer These 5 Questions:**

1. Do we have a company-wide shared understanding of the value of a great product catalog?

2. Do we know how our company's product information stacks up against the competition?

3. Is our product information strategy "digital first"? Or do we adapt product information from our brick-and-mortar operations?

4. What are the sources of product information, and are they elevating our quality or lowering it?

5. Is there clear and accountable ownership for all aspects of the product data? How do we approach management, storage and improvement of our product information? Is there a PIM system, and a clearly defined taxonomy and product schema?

2. **Invest in Product Information Operations Excellence**

Once you know the strengths and weaknesses in your product data approach, you can build a strategy that focuses on consolidation, quality and efficiency. That means looking at data sources, bringing them together under one platform, creating guidelines around execution and assigning responsibility for each aspect to a person/team. To be successful, all key stakeholders will need to buy into the importance of product data, specifically how it impacts SEO, conversions and revenue.
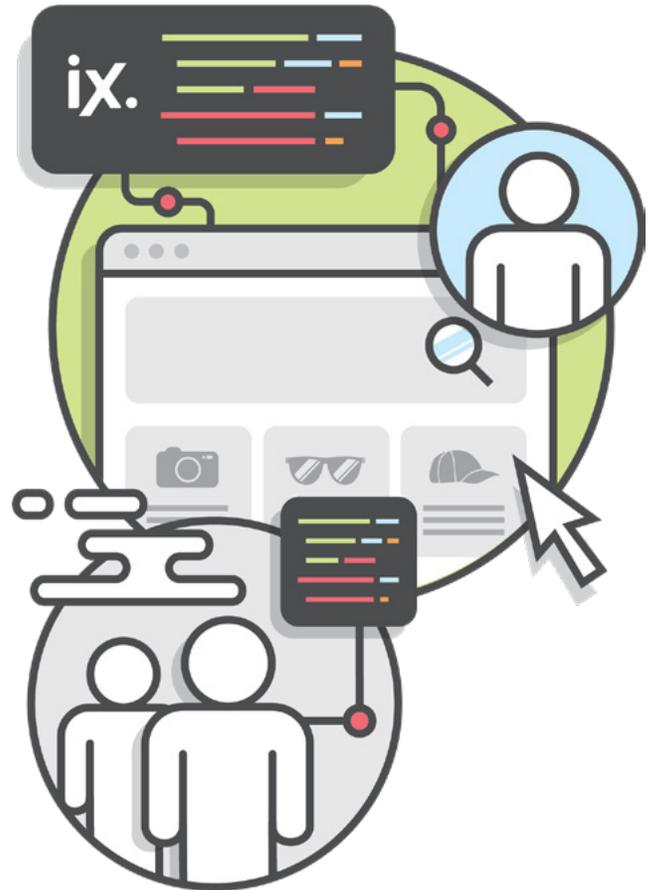
3. **Add Expertise and Innovation from the Right Partners**

With a strategy in place and the team on board, it's time to seek third-party companies that can elevate your performance: New product data vendors, PIM providers and strategists can help establish the infrastructure to make your company's vision a reality.

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Conclusion: Optimizing the Convergence of Humans and Machines

As more buying power shifts to IoT devices, retailers will need to recognize the opportunity and position their product offerings with distinct audiences in mind: humans and machines. Building a foundation of clean, SEO-optimized product data is an investment that will enable retailers to serve both groups effectively.

The benefits of optimizing product information include better conversions, fewer returns, improved product mix and smarter product recommendations. Arguably the biggest barrier to improving product data is the laborious manual process, especially for retailers that stock tens or hundreds of thousands of products. Product data aggregation specialists, using AI, machine learning and natural language processing, can take much of the pain out of modernizing ecommerce sites, making them more effective and improving competitive positioning.

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Indix is building the world's first Product Information Marketplace. Through a combination of the web and partners, Indix collects offers data such as price, availability, and seller information in addition to catalog data like code-based identifiers and attributes to create the single largest source of structured product information. Using data science and machine learning, Indix cleanses, structures, and refines the data, and then make it available through Indix Data-as-a-Service. By connecting to the Indix Product API and Product Feeds, businesses and developers harness the power of product information to make better decisions, drive innovation, and create new models of commerce. With more than 35 billion product offers from 1,000+ sites and 50,000+ brands, only Indix has the scale and quality of product information needed to power the next generation of commerce.

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