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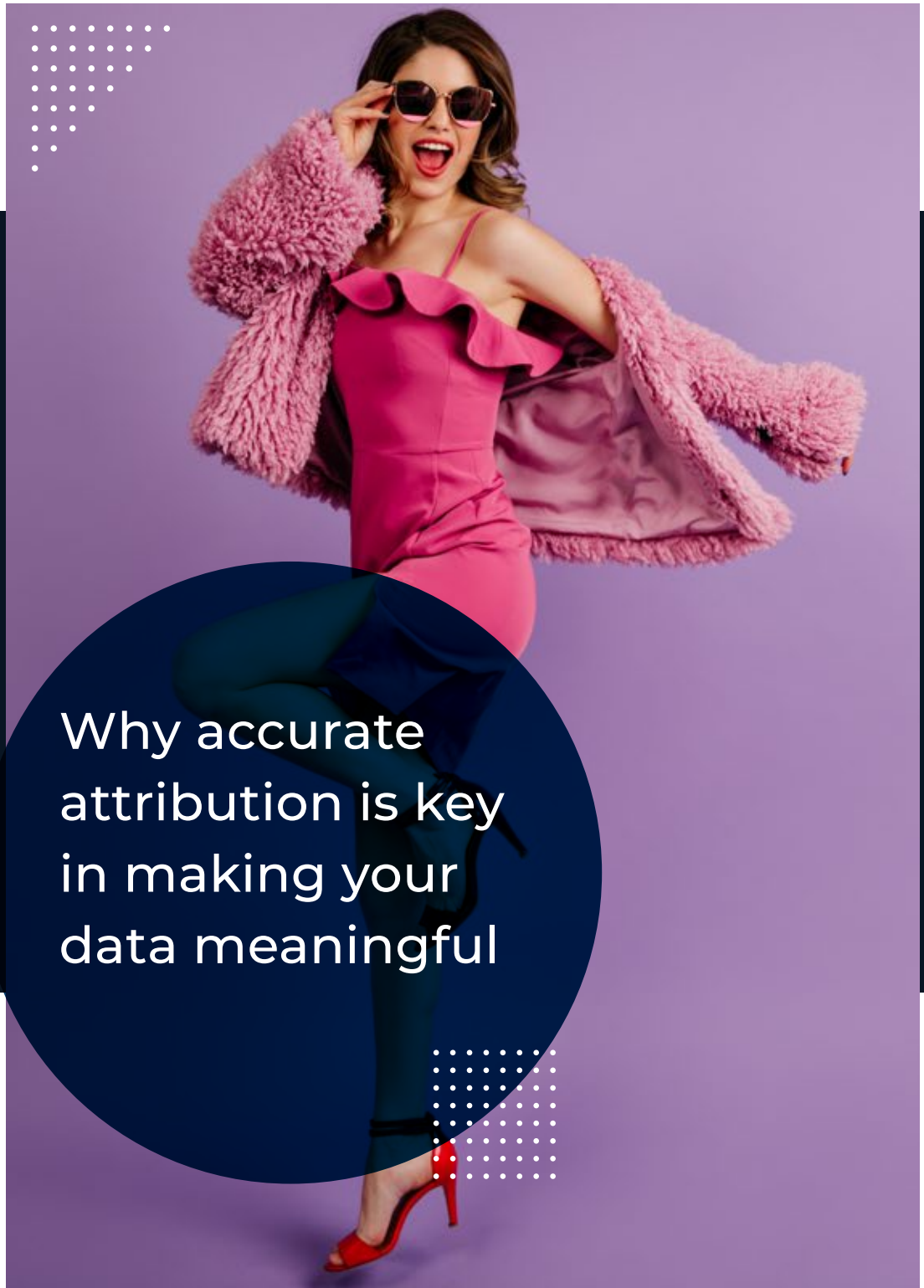
AUTOMATING PRODUCT ATTRIBUTION



Why accurate attribution is key in making your data meaningful

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Winners have the best attribution – and are increasingly automating the attribution process

Across most industries, and certainly, all data-driven, online, or direct sales businesses (B2B, B2C, or B2B2C) have detailed information about products, services, or inputs allows for more robust solutions. These are sometimes customer-facing, but as often are behind the scenes driving the end experience. Solutions that require product attribution include next-generation onsite or offsite search optimization, website nav, supernav, and facet optimization, assortment planning, pricing, allocations, forecasting, markdowns, and much more. If your business is sticking only to basic descriptions like category, color, and size you are missing the opportunity to make decisions or allow customers to make decisions based on the way customers actually buy products.

The reason most businesses have poor product attribution isn't for lack of desire . . . it's because this is extremely hard to do at scale. Especially in complex businesses where there is SKU density across multiple categories or formats, and where products may be coming from multiple sources or vendors. This is where automated attribution comes in. Rather than relying on brute force labor, with all of its compliance and accuracy risks, leading companies are starting to turn to machine learning and artificial intelligence to drive outcomes.

Read on to find out how automated product attribution works, and why it can be a huge driver of profits for your business . . .

The drudgeries and costs of manual tagging of product attributes

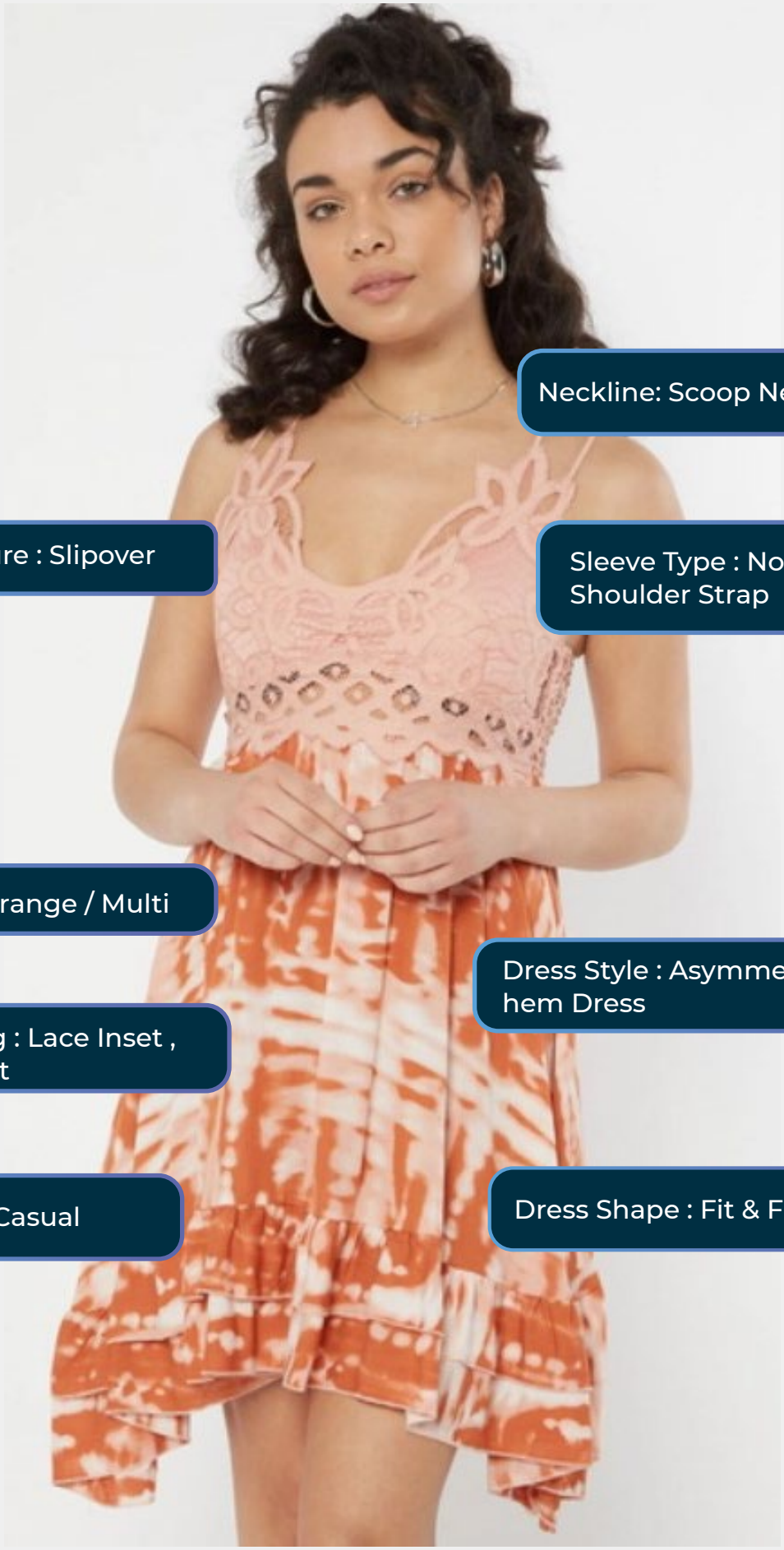
Effective catalog management requires standardized, complete, and up-to-date attribute tags for all products. However, modern supply chains are complex. Most retailers only have simple and incomplete information about their products that don't align with how customers actually see their products. This is a clear indication of the inherent problems that manual tagging comprises, and its inability to accomplish improved outputs. Let's understand in detail the challenges of Catalog Management for Fashion Retail -

Time-Consuming and costly: Many retailers, or similar businesses, have central data management teams that collate this information and manually update attribute data. If this describes your business, chances are that you are investing significant manual labor and time to manage and streamline the various aspects of your catalog. Not only is manual tagging tedious and time-consuming, but also prone to human errors. An HBR study suggests that data workers spend ~50% of their time hunting for data, and identifying and correcting errors in the data.

Vulnerable to Human Error: Much of the product categorization in the real world today happens either in the buying cycle where merchants place descriptions on a purchase or during the copywriting phase of preparing an item for sales online. This often leads to errors where something as simple as a misspelled keyword can mistakenly place a product in the wrong category, or create new unintended category variations like Apple, Apl. Apl, Appl, ApDirSc, AplDS, and so on, in some cases creating hundreds of related categories. This type of error can occur at each step of the attribution process, ranging from color to fabrication, silhouette, detailing, to dozens of other common attributes.

Lack of Scalability: Manual attribute tagging takes >30 hours a week and yields only 200-300 new product tagging a day. This results in most retailers taking on average 30-60 days to move a product from offline to online - an expensive price to pay in the new world where a shorter time to market is the real competitive advantage.

For most retailers, the data required for effective catalog management is extremely broad-based - in source and nature of acquisition - coming from multiple vendors, or even at times, user-generated content communicated in non-standard formats over various channels. Therefore, the need for more accurate, comprehensive, and automated product categorization is one of the main reasons why AI-powered product attribute tagging is becoming increasingly important.



Neckline: Scoop Neck

Closure : Slipover

Sleeve Type : No Sleeve , Shoulder Strap

Color Family : Orange / Multi

Dress Style : Asymmetrical hem Dress

Surface Styling : Lace Inset , Gathered waist

Occasion : Casual

Dress Shape : Fit & Flare

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Why accurate attribution is key in making your data meaningful

Product attributes are the specific features of a product that set it apart from other products in its category. For example, a product might have a unique design, be made from premium material, or have a special feature that makes it easier to use.

The attributes of a product can tell you a lot about the personal values of the customer who is buying it. By understanding the attributes of a product, you can better segment your customers and create more personalized products for them. Additionally, understanding product attributes can help you make better decisions about what products to offer and how to categorize them.

Finally, understanding product attributes can help you create a product taxonomy that is more in line with the personal values of your customers. Customers invariably see products differently than the way businesses attribute or manage them. Consumers don't know the difference between knits or wovens, or between different fabrications or stitching. But they do know what they like and use their own language to describe those products.

Using an automated attribution solution drives categorization and taxonomies that match how customers actually use and see products, meaningfully improving business outcomes.

Importance of attribution for driving a meaningfully improved customer experience

Rich product descriptions are the essence of building an optimized shopping experience and driving sales. According to one survey of online shoppers, no matter where consumers shop, product content drives the sale.

87% of consumers rated product information as “extremely important” or “important” when making a purchasing decision, regardless of where they buy it. 69% of consumers stated the reason behind their cart abandonment was the incompleteness of information or details on the product page. A detailed product description is the second most important factor while buying apparel, electronics, or groceries online, with the other factors being price, ratings, and reviews.

Detailed product information is key at every stage of making a successful and satisfying customer journey. Photos, videos, technical information, or product stories create a flawless journey that leads to every company's end goal, a sale. This is why it is impossible to talk about creating an online shopping experience without focusing on rich product attribution. Adding complexity to the situation, consumers report a high intention to continue with omnichannel shopping even after the pandemic. This escalates the need for not only rich attributes but also consistency across them.

Finally, site search performance, which is one of the most important drivers of customer experience and website conversion, benefits enormously from an attribution that matches the consumer’s own language.

Product attribute metadata: Anatomy of good metadata & benefits

Some of the aspects that constitute a good quality attribute metadata are-

- Scalable with the ever-expanding product catalog
- Unbiased to represent the brand identity
- Standardized to maintain a single source of truth for the products coming in from different sources such as brands, vendors, and sellers
- Well structured, multi-layered, and mapped well with no overlaps or duplicates thereby becoming the canonical list
- Searchable and sortable for the final users across brands and categories in the product catalog
- Enable the products to be retrievable quickly
- Has adequate breadth and depth of attribute

Attribute Depth is essentially the number of values within each attribution. If you have five types of sleeve lengths available but only include three of those attributes in your assortment—*short sleeves, long sleeves,* and *no sleeves*, then you are dismissing the key attribute for a customer who wants to purchase blouses with *cap sleeves*.

Breadth of Attribution refers to the different types of values assigned to each product. Items that have three or four basic attributes, such as neckline, sleeve length and pattern, won't show up in results when a customer wants to filter by style indication. *For example, if a customer is driven to your online store through an online ad that displays cocktail dresses, but they are unable to find them on the website, it will not only increase your churn rate but also cause you to lose your traffic to your competitors.*

Adding attribute metadata helps brands, retailers and market places to:

Product Discovery

Improve search functionality, SEO product ranking and personalisation for customers browsing their websites. Deploy hyper-personalization through email and print channels by re-targeting post website visits or searches and carousels that include product suggestions based on website behavior - views, clicks, searches, orders and other important KPIs.

Demand forecasting

Understand the shopping trends better- Further helping merchandising teams to streamline inventory management and directing buying teams during future assortment plans.

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The business case for automating product attribution

While the task of attribution is quite repeatable, businesses typically desire a high level of accuracy and consistency to deliver intended business outcomes. This makes attribution a perfect candidate for automation. The same AI models that help Tesla run flawlessly on auto-pilot can be leveraged to visually identify product attributes from pictures and videos. It can also help maintain standard category-level taxonomies and can generate contextual and rich tags from product descriptions.

Here is a comparative analysis of how AI based automated attribution fares as compared to legacy approaches –

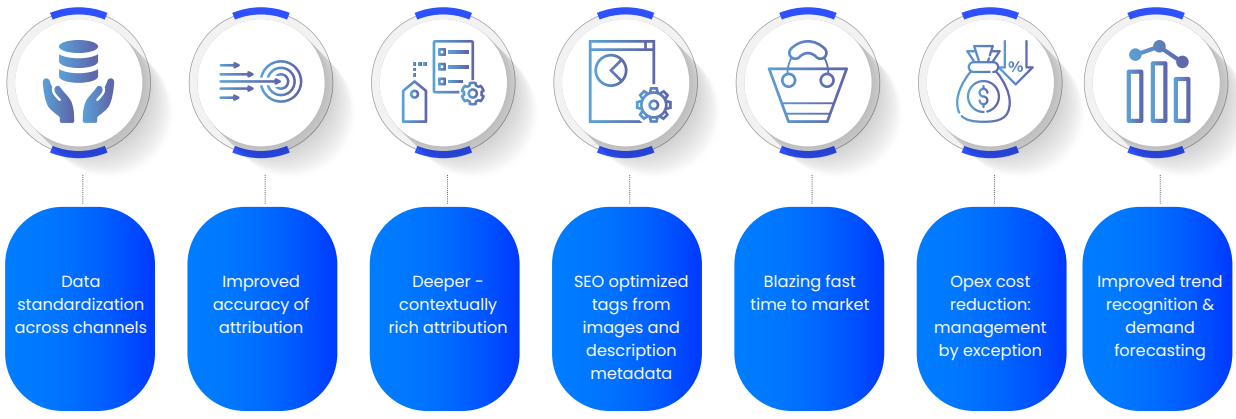
Features	AI-based solutions like AttributeSmart	Manual (MDM team) - Multi-brand Retailers; Tool-excel or another custom app	Manual (MDM team) - Multi-brand Retailers; Tool-excel or another custom app	PLM or RMS - Mono Brand	PLM or RMS - Multi brand
Unbiased Attribution	Yes	Mostly no, data is collected separately and collated manually from multiple brands.	Difficult to contemplate, Subjective to category's width; Can be better in case of small assortment.	Partially, handled by multiple stakeholders	Mostly no, data collected and collated from multiple brands and sources.
Accuracy	TBC (up to 90%)	Partially Accurate	Difficult to contemplate, Subjective to category's width; Can be better in case of small assortment.	Partially Accurate	Partially Accurate
User Interface and ease to use	User Friendly	Excel- user-friendly. User training may be required to use a custom app.	Excel- user-friendly. User training may be required to use a custom app	Complex modules; User training is required	Complex modules; User training is required
Image View to Tags Review	Almost like an image repository; Multiple images with similar attributes can be grouped and viewed in one go.	Only a few images can be seen on the screen at a time. Feature - a custom grouping of styles may not be present.	Only a few images can be seen on the screen at a time. Feature - a custom grouping of styles may not be present	Limited Flexibility, Image visibility is subject to the user's input. The attribute filter option is there.	Limited Flexibility, Image visibility is subject to the user's input. The attribute filter option is there.

Tag's Edit and finalization	Simplified; Flexibility to define and customize the attribute tree for each product identifier. Easy to keep a tab on reviewed styles	Excel - Chances of error if editing too many rows and columns at a time. User training may be required to use a custom app.	Excel - Chances of error if editing too many rows and columns at a time. User training may be required to use a custom app.	Interface- Too many fixed columns and headers; Complex upload format	Interface- Too many fixed columns and headers; Complex upload format
Output Data consumption	Easy to understand and consume; can be used as-is by diff. teams for attribution purposes.	Excel- Easy to use and consume. Other custom App - Subjective to client's requirement	Excel- Easy to use and consume. Other custom App - Subjective to client's requirement	Too many columns and headers, may not be relevant from an attribution perspective. Few modules do provide flexibility to download data in the custom format	Too many columns and headers, may not be relevant from an attribution perspective. Few modules do provide flexibility to download data in the custom format
Other features	Attribute edits of style variants at one click				

Retailers have observed ~60% reduction in opex costs, reduction in time to market by ~Y% while seeing increased conversion rates by ~Z% on online stores on account of better product discovery.

According to one study published by ScienceDirect, retailers discovered that automated attribute tagging led to an increase in cross-platform application streamlining by 70%. Not only that, AI-powered automated product tagging has yielded more enhanced search and discovery, inventory optimization, and hyper-personalization.

Benefits deep dive: Accurate , faster, cheaper, deeper attribution with AI



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The anatomy of AI powered automated attribution : how it works

TAXONOMY

Standardized and rich attribute dictionary

- 10k+ attributes specific for fashion and home verticals curated by retail experts
- Custom training available

AI MODELS

Image recognition and Natural Language Processing (NLP) models

- Trained, out of the box models
- Self-learning based on minimal feedback by the taxonomy management teams
- Models maintained and hosted by IA

WORKFLOW

Prioritized reviews based on attribute confidence levels

- Users can review, edit and finalize attributes at scale using exception management and confidence metric
- Collaborative workflow

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A southern department store reduces operational costs by 60% with AttributeSmart

Opportunity

With a growing digital presence, this Southern department store was managing 350k+ products added per year, 50+attributes and 500+tags tomaintain. This expanding product portfolio made them realize the need for standardized data attributes, improved data quality and better governance structure.

Their yearly addition of 2Mn+ products with ~350K active products took 20mins per product leading to 550 man hours per week with their currentmanual process. This volume also led to incorrect attribute data and inconsistent metadata for clean catalogs which made them recognize the need to standardize product attributes across multiple brands.

Action

They achieved rich and standardized product metadata of 50+ Attribute types and 500+attribute values by implementing attributeSmart. Through automated tagging, they realized a quicker time to market and faster product onboarding. By enabling annotation, back-tagging of historical products and review of tags in the least amount of time possible with utmost accuracy, they saw significant savings in productivity of their teams.

> “Attribute$mart will help any organization overcome the obstacles in maintaining and managing good quality product attribute data sets. Robust attribution will drive productivity through advanced analytics and optimizations such as Assortment Planning. This web-based tool will provide an easy, centralized way to manage this process that typically is a struggle”

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Outcome

By generating a wide set of attributes and values, AttributeSmart not only helped cut down the review time, but also became the singular source of truth into inventory for the company.

~60%
reduced operational costs

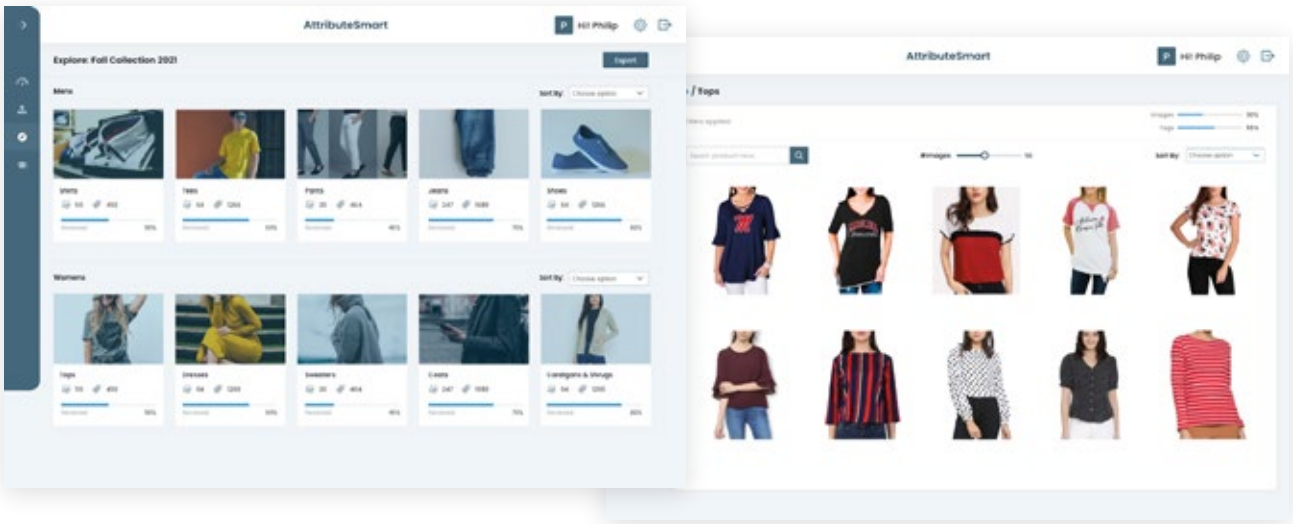
~70%
increase in productivity

90%+
accuracy across multiple categories

What's Next?

Help leverage the attributes by merchandising and e-commerce teams.

- Merchandising - Localized assortments with better product mix
- Improve product discovery and navigation on the website
- Improve conversions and AOV on e-commerce through SEO ready tags and rich catalog data



Here at Impact Analytics we believe that strong attribution can mean the difference between good and great business performance, and our AttributeSmart TM product is the way many of our clients are delivering improved planning, pricing, forecasting, allocation, and markdown decisions using our product suite to drive performance across their business. Let us show you how we could do the same for your business, please connect with us and schedule a demo.

Schedule a Demo

References

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*3: *https://www.sciencedirect.com/science/article/abs/pii/S0148296319302607*

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Ranked #51 on Financial Times' America'sFastest Growing Companies 2020

#263 in Inc 5000 list of fastest growing companies in US

Featured among the top 25 machine learning companies to watch in 2019

#74 in Deloitte Fast 500 list of fastest-growing companies 2019

Visit us

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About Impact Analytics

Impact Analytics is a proven leader in enterprise AI SaaS solutions, that combines the art and science of merchandising and supply chain optimization. Our cloud-native integrated platform's planning, pricing & promotions, inventory management, and intelligence suites, are built on the foundation of an innovative AI & ML-guided forecasting engine with robust predictive algorithms. Impact Analytics is a trusted partner for top retailers across the globe and is empowering them to make smart data-based decisions, unlock process efficiencies, transform their businesses and achieve unparalleled business benefits. Our unique engagement model allows for implementations to be executed in a quick and cost-efficient manner.

You can reach Impact Analytics at info@impactanalytics.co and can learn more about the impact of our solutions here.