

Top 7 AI tools for your eCommerce business

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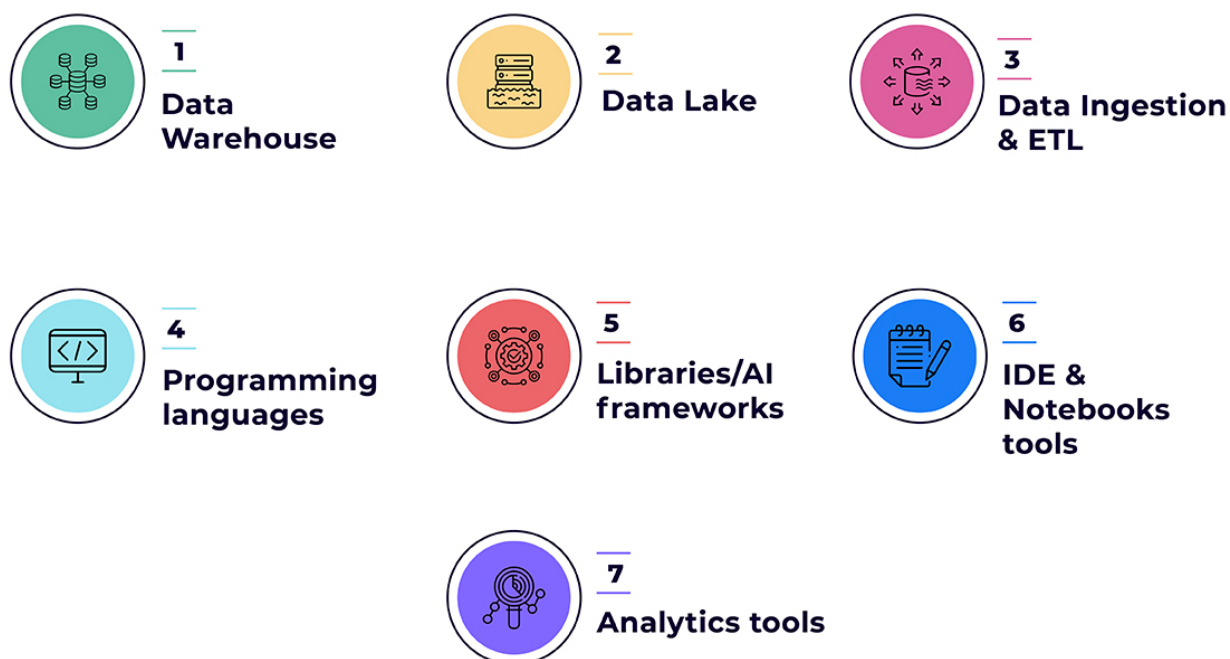
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The 2020 global health crisis sped up the adoption of omnichannel shopping and fulfillment. Consumers spent \$791.70 billion online with U.S. merchants in 2020, a **32.4%** rise compared to 2019. To keep up with this digital shift, offline businesses have substantially moved investments to online infrastructures for everything from e-commerce platforms, product recommendations, inventory management, and communications. AI tools for eCommerce have played a major role in helping businesses in the digital shift.

However, the benefits of setting up e-commerce stores are potentially outweighed by the increased costs. As markets transition to online retailers, they must learn to efficiently collect, secure, and analyze data coming in from multiple sources. Strategically approaching the data problem with artificial intelligence (AI) can help better serve customers, gain a competitive advantage, and drive loyalty.

In this blog, you will learn about seven data and AI tools for eCommerce businesses:





Seven Data and AI tools for eCommerce businesses

1. Data Warehouse

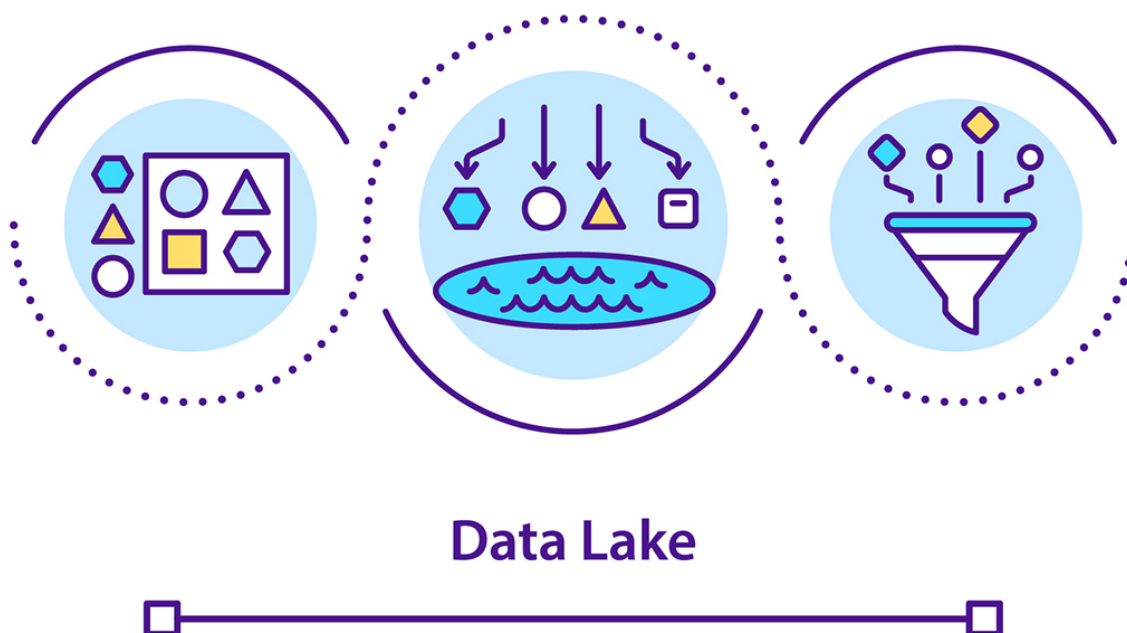
Data is the one advantage that eCommerce merchants and marketers have over brick and mortar retailers. When buyers are from the internet, eCommerce retailers can collect data and measure almost every aspect of their interactions. However, that advantage is worthless unless there is a system to make sense of the data they collect. Companies assume that they have a sound system in place. But, what they have is a network of silos. In such a system, data sticks to different platforms like Google Analytics, Shopify, or Klaviyo and can't move to deliver valuable insights. Funneling all your data into a single location for your eCommerce stores is the right way to go. Data warehouses centralize and merge a plethora of data from various sources, helping organizations to derive valuable business insights and improve decision-making.

Data Warehouses support real-time analytics and ML operations quickly & are designed to enable and support business intelligence (BI) activities like performing queries and analysis on a colossal amount of data. Data could range from customer-related data, product or pricing data, or even competitor data.

However, the time needed to gather, clean, and upload the data to the warehouse is a time-consuming process. Here's where **DataWeave's AI-Powered Data Aggregation & Analysis Platform** can help! Get critical insights

on your competitor's pricing, assortment, and historical sale trends with a real-time dashboard. **Build a winning eCommerce strategy with market intelligence** without the need to store your data.

2. Data Lake



A data lake is a centralized repository that can store structured and unstructured data at any scale. Companies don't have to provide a schema to the data before storing it, but they still can run different analytics and ML-related operations. However, it takes more time to refine the raw data and then analyze or create ML models for predictions.

An **Aberdeen survey** saw businesses implementing a Data Lake outperforming similar companies by 9% in organic revenue growth. The organizations that implemented Data Lake could perform various analytics over additional data from social media, click-streams, websites, etc. A Data Lake allows for the democratization of data and the versatility of storing multi-structured data from diverse sources, improving insights and business growth.

eCommerce businesses can collect competitors' data in data lakes like their popular products, categories, landing pages, and ads. Analyzing competitors' data helps retailers price their products correctly, helps with product matching, historical trend analysis, and much more. However, data lakes can also be used to store consumer data such as who they are, what they purchase, how much they spend on average, and how they interact with a company. Successful retailers leverage both competitor and consumer data to understand their consumers better, **what brands to carry, how to price each**

product, and what categories to expand or contract. Retailers also store identity data such as a person's name, contact information, gender, email address, and social media profiles. Other types of data stored are website visits, purchase patterns, email opens, usage rates, and behavioral data.

The major challenge with a data lake architecture is that it stores raw data with no oversight of the contents. Without elements like a defined mechanism to catalog and secure data, data cannot be found, or trusted resulting in a “data swamp.” Consequently, companies need teams of data engineers to clean data for data scientists or analysts to generate insights. This not only increases the turnaround time of gaining valuable information but also increases operational costs.

However, you can rely on platforms like DataWeave **that stores competitor pricing & assortment information at a centralized location**. You can leverage intelligently designed dashboards to get real-time insights into the collected data and make data-driven decisions without the need for storing, cleaning, and transforming the data.

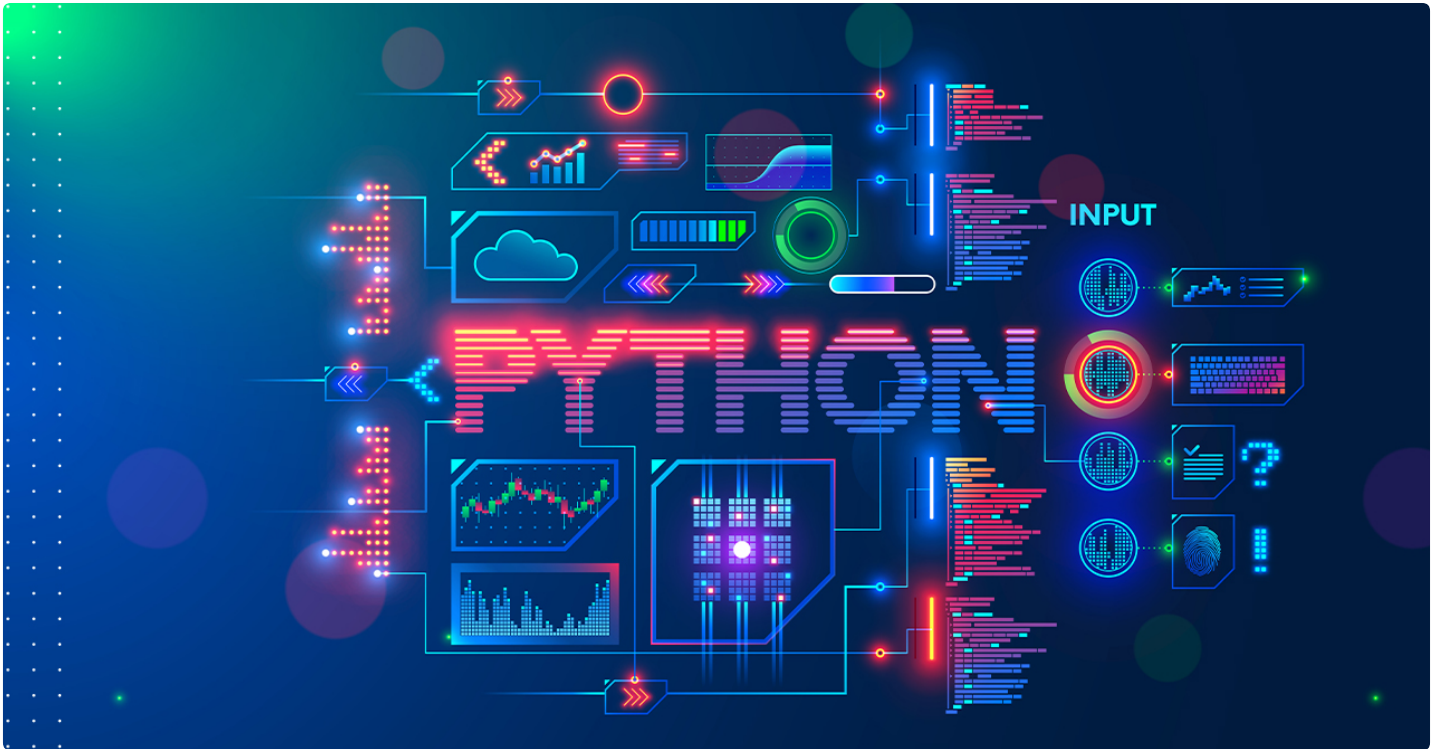
3. Data Ingestion & ETL

To churn out better insights, businesses need access to all data sources. An incomplete picture of data can cause spurious analytic conclusions, misleading reports and inhibit decision-making. As a result, to correlate data from multiple sources, data must be in a centralized location—a data warehouse or a data lake. However, extracting and storing information into these systems require data engineers who can implement techniques like data ingestion and ETL.

While data ingestion focuses on getting data into data lakes, ETL focuses on transforming data into well-defined rigid structures optimized and storing it into a data warehouse for better analytics workflows. Both processes allow for the transportation of data from various sources to a storage medium that an organization can access, use, and analyze. The destination can be a data warehouse in the case of ETL and a data lake in case of data ingestion. Sources can be almost anything from in-house apps, websites, SaaS data, databases, spreadsheets, or anywhere on the internet.

Data ingestion & ETL are the backbones of any analytics/AI architecture since these processes provide consistent and convenient data, respectively.

4. Programming languages



Programming languages are tools used by programmers to write instructions for computers to follow since they “think” in binary—strings of 1s and 0s. It serves as a bridge that allows humans to translate instructions into a language that computers can understand. Some common and highly used programming languages for building AI models are Python and R.

While Python is the most widely used language for training and testing models, R is mostly embraced for visualizations and statistical analysis. However, to productize the ML models, you would require Java programming language so that models can be integrated with your websites to provide recommendations.

5. Libraries/AI frameworks

An AI framework is a structure that acts as a starting point for companies or developers to add higher-level functionality and build advanced AI software. A framework serves as a foundation, ensuring that developers aren’t starting entirely from scratch.

Using AI frameworks like TensorFlow, Theano, PyTorch, and more saves time and reduces the risk of errors while building complex deep learning models. Libraries and AI frameworks also assist in building a more secure and clean code. They future aid developers in simpler testing and debugging.

Various open-source frameworks in the market also come with pre-trained models for specific use cases. Organizations can leverage off-the-shelf models and tweak with existing data to enhance the accuracy of the predictions.

6. IDE & Notebooks tools

IDE or Integrated Development Environment is a coding tool that allows developers to write and test their code more efficiently. However, notebooks are one of the most popular AI tools for organizations to execute analysis and other machine learning tasks. It offers more flexibility over IDEs in terms of exploratory analysis.

All the features, including auto-complete, that IDEs or notebooks offer are beneficial for development as they make coding more comfortable.

IDEs/Notebooks increase developers' productivity by combining common software activities into a single application: building executables, editing code, and debugging.

7. Analytics tools

CASH IN ON PRICING OPPORTUNITIES

| Price Competitiveness | | | | | | | | |
|-----------------------|------------|--------------|-------------|----|--------------|---------------|------------|-------|
| Compared Against | 30+% Lower | 10-30% Lower | 0-10% Lower | 0% | 0-10% Higher | 10-30% Higher | 30% Higher | TOTAL |
| Median | 11 | 110 | 11 | 9 | 41 | 21 | 7 | 172 |
| Lowest | 7 | 700 | 7 | 11 | 74 | 32 | 19 | 172 |
| Highest | 3 | 3 | 3 | 3 | 50 | 14 | 4 | 104 |
| Walmart | 5 | 5 | 4 | 4 | 44 | 18 | 6 | 98 |
| Amazon | 3 | 3 | 3 | 3 | 50 | 14 | 4 | 104 |

STAY RELEVANT AND TRENDY WITH SMART ASSORTMENT DECISIONS

| OVERALL POPULARITY INDEX 54.4 / 100 3.8 APPLE PHONES | | | | | Apple iPhone X 256GB - Silver SKU#123456789 PRICE £1,149.00 | |
|--|------------------|----------------|-------------------|--------------|---|----------|
| SOURCE | POPULARITY INDEX | INDEX CHANGE % | # PRODUCTS IN TOP | AVG DISCOUNT | RANK | DISCOUNT |
| Amazon | 65 | ▲ 3.3 | 10 | 8.5 | 2 | 7.01% |
| Argos | 45 | ▼ 10.0 | 14 | 5.5 | 8 | |
| Tesco | 40 | ▼ 12.5 | 10 | 2 | | |
| Currys | 73 | ▲ 27.5 | 16 | 6.3 | | |
| Costco | 49 | ▲ 6.6 | 8 | 8 | 1 | 33 |

Data Analysis transforms raw data into valuable statistics, insights, and explanations to help companies make data-driven business decisions. Data analytics tools like PowerBI and Tableau have become the cornerstone of modern business for quickly analyzing structured and semi-structured data.

However, these platforms aren't optimized specifically for the eCommerce industry. Consequently, you should embrace analytical tools particularly designed for eCommerce companies **to make better decisions about product assortment, pricing, and promotions**. With data analytics, companies can gain insights into the most popular and discoverable brands on their own and competitors' platforms. Paired with attribute matching, competitive intelligence gives a deeper understanding of the latest trends and why certain products are popular with your customers. Some more meaningful metrics that retailers can track are discount gap, price gap, catalog strength, and product type gaps.

Competitive pricing is another benefit of data analytics with which retailers can identify gaps and keep up with actionable pricing insights. Retailers get to maximize profits and respond to demand by cashing in on insights into rivals' pricing. With the right analytics tools, they can also track changes in pricing across crucial metrics such as matched products, recent price changes, highest price positions, stock status, and much more.

Analytics tools can also help eCommerce companies to capture information about competitors' promotional banners through AI-powered image analysis.

It can provide insights into how and where to spend promotional expenditure.

Conclusion

This listicle discusses some of the AI and data tools commonly used by the eCommerce industry. Data analytics has become a popular method for retailers to understand their customers and boost productivity. Data analytics help companies improve customer experience, improve customer loyalty, generate insights, and advise on data-driven actions. Business intelligence tools can help companies monitor key performance indicators (KPIs), perform proper data analyses, and generate accurate reports.

Want to learn how DataWeave can help make sense of your and your competitor's pricing, promotional, and assortment data? [Sign up for a demo](#) with our team to know more.

- Osheen Jain

Osheen is an experienced content writer who is interested in the intersection of robotics and Embodied Cognition. She has a PGD in Cognitive Science, a Master's in Philosophy, and enjoys reading immensely., 5th Dec, 2021

