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ANALYTICS

Recommendation Engine

Transform Shoppers into Loyal Customers

"How can I help you?" is one of the most essential interactions a company can have with their customers to improve sales and increase satisfaction. In the modern world of ecommerce this duty is fulfilled by recommendation engines and so often we interact with them without ever realizing it. Today our movies, music, fashion and shopping decisions are all affected by recommendation engines working in the background to deliver personalized content.

Traditionally when we recommend a product to a person we find people with similar interests, gain an understanding of their behavior and make our suggestions. Recommendation engines work much in the same way, algorithmically delivering product suggestions based on user similarities, product associations, web history and other online behavioral information.

Personalized product and content suggestions automate both cross-selling and up-selling on a tremendous scale, resulting in increased sales, improved return on investment and increased customer satisfaction. The objective of this document is to provide an overview of recommendation engines, the benefits they provide, and explore use cases of the various methodologies.

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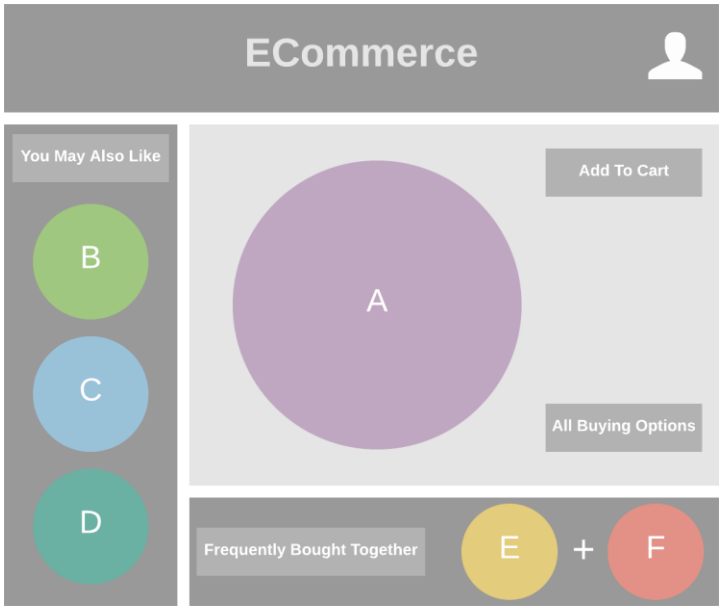
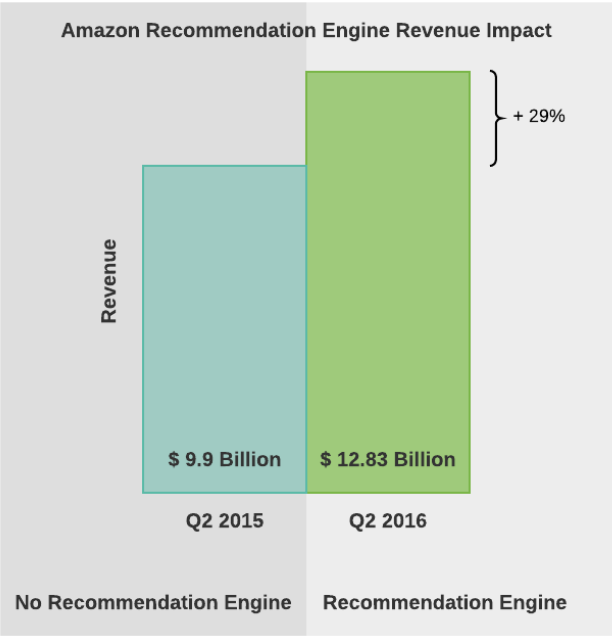
Applications & Benefits

The foundational concept of recommendation engines is the autonomous delivery of personally relevant products. The process of which provides significant advantages to both the shopper and the company selling the products.

Shoppers given relevant content become increasingly engaged and feel personally valued, cultivating customer loyalty. The logistics of the shopping process are improved and streamlined by the immediate delivery of related and complimentary goods, reducing the stress and confusion of the shopping process.

The use of recommendation engines in the shopping experience results in a powerful boost to profits and gain in ecommerce efficiency. The improvements are due to increases in average order value, greater number of items per order, and enhanced likelihood of purchase.





Recommendations can be informed by company goals to deliver product and inventory initiatives. In turn, suggestion metrics can also inform company inventory planning, algorithmically ensuring sufficient supply based on customer demand.

Companies best known for their use of recommendation engines are Amazon, Netflix and YouTube. McKinsey & Company Consulting Group estimates that 35% of consumer purchases on Amazon come via product recommendations and estimate the resulting profit increase is around 29% on their bottom line. Similar gains have been realized by countless ecommerce platforms that have implemented the use of recommendation engines.

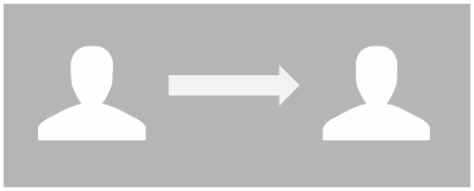
Recommendation Engines

Collaborative filtering is the underlying concept that drives today's most innovative recommendation algorithms. The strength of collaborative filtering is that it only requires behavior and not historical context, allowing the user to immediately receive related and complimentary product suggestions the moment they show interest in a particular item.

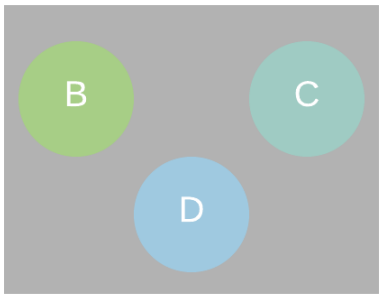
Suggestion relevancy is determined by building automatic predictions with collaborative filtering using multiple variable relationship viewpoints. The filtering process can be implemented with two viewpoints, item to item, or user to user.

Item to Item collaborative filtering involves rating item distributions by matching items purchased to similar items, combining like items in a recommendation list.

User to User collaborative filtering averages historical user ratings weighted by similarity to determine a recommendation list for target users by item.



Additionally, collaborative filtering can be supplemented by market basket analysis using association modeling techniques to automate the upselling process based on items that are most often bought together. Association model results can also be used to build customer profiles in addition to dynamic upselling recommendations.



Market Basket modeling involves the building of a sparse binary matrix that indicates whether an item appeared in a cart or not. The matrix is then analyzed to determine the items that most often appear together in a shopping cart.

Analysis Delivery & Next Steps

Our streamlined process involves a requirements gathering session for our team to gain an understanding of ecommerce practices, technology capabilities and data resources. Recommendation engine analyses will be based on customer need and can be delivered with automated reporting of the machine learning results into the future.

Contact Us

Schedule Requirements Session:

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About Us

We are a team of data science professionals focused on superlative computational mathematics and advanced data product solutions. The sole intention of our work is to serve our clients with actionable insight and honest transparency using genuine scientific practices.