



Building a better recommendation engine

Personalize the customer experience using affinity profiles powered by artificial intelligence

Knowing what a customer purchased three months ago will help a company market to that person today. That means employing customer data to fine-tune product recommendations and offers will break companies out of traditional, obsolete cycles and deliver personalized experiences that benefit the customer and the vendor. But not every company has a rich analytical ecosystem with a plethora of data to build on.

Digital technologies deliver data

Work from the Capgemini Research Institute shows customers are expecting more personalized experiences with every interaction. They also expect to interact with a brand in every channel. Happy customers are more loyal and spend more money. Personalization is a disruptive technology, but also a differentiator.

Artificial intelligence and machine learning are driving this move to personalization. Companies are also tapping into the power of the cloud, as on-demand services enabled with machine-learning capabilities become the backbone of data processing and insight generation.

Many companies have already built out Hadoop clusters or moved to cloud service providers to host their data and solutions. With the computing power of the cloud, digital marketing companies have more data – but the problem remains how to tap into vital customer information. They need to bridge the gap between methodology and technology.





Becoming the next industry disruptor

Few businesses approach the scale of Amazon, but there are benefits to thinking like the online behemoth, especially for new entrants in an industry with very little historical data. Capgemini’s recommendation engine, which employs Natural Language Processing (NLP), provides an effective way to install a similar system within an existing ecosystem to provide individual recommendations. The approach is flexible enough to accommodate minimal existing client data and leverage important external information sources at scale.

This improves on all aspects of the marketing cycle, including customer acquisition, conversion, engagement, and retention. From the moment a customer starts interacting with the company, the system begins collecting information to improve the experience. By allowing for a more personalized approach, companies can move away from traditional marketing methods and create the right experience for their customers.

Capgemini’s recommendation engine works in either on-premises or cloud configurations, providing flexibility without a significant investment in infrastructure.

While retailers like Walmart are being rewarded for investing in personalization of online shopping to complement their physical stores, customer personalization is reaching into other industries. For

example, the hospitality industry is leveraging customer data to deliver a better experience in an increasingly competitive marketplace. This industry’s target population and its needs differ from a traditional retail or sales environment. In many cases, there is no historical data available to perform traditional predictive modelling or collaborative filtering. Capgemini’s recommendation engine can solve this issue. Our solution overcomes the initial obstacle of a “cold start” where no historical data exists. Our methodology also makes ingestion of new products and services into the marketing cycle very natural.

Even without existing information, clients can use the system to accurately target customers and expand marketing exposure from spot engagement to a continuous cycle that presents personalized content on the web, mobile, CRM, and within actual facilities.

This is possible because Capgemini’s recommendation engine does not rely on constrained, collaborative, and content-filter methodologies. Instead, AI and NLP match consumers to content that is relevant to them on an individual level.

This flexible and autonomous approach allows businesses to address the lack of relevant internal historical data. The solution relies on available first-party data and third-party data sources to provide an in-depth view of a consumer and focuses on attributes that relate to individual affinities. This delivers a competitive edge.

Building affinity profiles

For example, if a consumer is known to have purchased camping or hiking gear previously, the system can collect this marketing data and further refine it to form a unique set of affinity attributes.

This “affinity fingerprint” is based on the concept of physical fingerprints, except that it focuses on an emotional and habitual profile of a consumer rather than the swirls on fingertips. Like fingerprints, no two people are alike, based on likes and dislikes. Capturing these preferences creates a unique consumer profile. By comparison, a traditional customer 360-degree view is limited. The affinity fingerprint is scalable to ingest numerous data sources. It is flexible enough to refine via clickstream and other business-specific data as they are generated. The more information collected and aggregated, the more robust the affinity fingerprint, the more personalized the recommendations.

Connecting customers and the intelligence of AI

NLP allows a machine to process spoken or written language and gain insights from it.

A machine provides the ability to manage more than one set of data at a time while extracting information faster. It can dynamically assess thousands of consumers and products very quickly. Elaborate profiles of consumers and products can be created based on available information, and these are then passed to neural networks which rank products from most to least relevant for an individual.

Our recommendation engine is ready to support multiple industries to break free from traditional targeting techniques. It is scalable and cloud ready. Your customers want a more personalized experience. This is how you deliver.





About Capgemini

A global leader in consulting, technology services and digital transformation, Capgemini is at the forefront of innovation to address the entire breadth of clients' opportunities in the evolving world of cloud, digital and platforms. Building on its strong 50-year heritage and deep industry-specific expertise, Capgemini enables organizations to realize their business ambitions through an array of services from strategy to operations. Capgemini is driven by the conviction that the business value of technology comes from and through people. It is a multicultural company of over 200,000 team members in more than 40 countries. The Group reported 2018 global revenues of EUR 13.2 billion (about \$15.6 billion USD at 2018 average rate).

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