

Accenture Interactive – Point of View Series

Personalized Recommendations:

Finding the needle in today's
ever-growing digital haystack

A man in a red plaid shirt and sunglasses is looking upwards. In the foreground, a large smartphone is held horizontally, displaying a video of a person holding a large, shiny trophy. The background is a textured, light-colored wall.

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Personalized Recommendations:

Finding the needle in today's ever-growing digital haystack

In a world filled with an ever-growing number of choices, time-starved consumers are looking for smart ways to find relevant products and services quickly. With online retailer Amazon's Kindle ebook library now featuring a mind-boggling 475,000 titles,¹ and Netflix, the world's leading Internet television network, listing more than 100,000 movie rental titles,² no wonder consumers are feeling overwhelmed with options.

Add to that the multiple deals, online and offline, and seemingly infinite variations of products and accessories being offered by companies, and the data deluge is enough to drown in. Finding the best cell phone, the perfect pair of shoes, or a fun movie to watch with the kids, can be a time-consuming and frustrating experience.

Wooing consumers with generalized campaigns—mass mailings, larger-than-life billboards across the city or blanket digital ads—is no longer an effective business strategy. Customer-centric companies have already started exploring innovative ways of increasing the relevance of the products and services they recommend to each consumer. They are investing in real-time technologies to anticipate and understand consumer behavior at a more granular level across channels and devices. The result? More personalized recommendations, delighted customers and increased sales.

Get to know me

Recommendation engines, with their ability to predict consumer needs based on previous purchase history, online behavior, ratings, reviews and other personalized attributes, are proving a key differentiator for businesses.

Besides keeping up with the ever-increasing range of products and services, recommendation engines need to track each customer interaction—login, casual browsing, price or product comparison, product selection for later viewing, purchase and other activity. The more adept a business becomes at analyzing this consumer data in real time, the better it will be at making relevant offers to each consumer. Today, however, most companies rely on static rules-based scenarios, which are unable to make relevant recommendations to consumers in real time.

There are four key challenges businesses need to address to deliver timely personalized recommendations across a vast range of products and services, multiple cultures and a growing number of channels:

1. Ability to process massive volumes of data that keeps growing, and is generated from all types of consumer interactions through offline, online, and mobile channels.
2. Interpretation of the results of consumer interactions in real time with micro-second response turn around, while drawing insights and recommending products and services that are highly relevant to each consumer.
3. Creation of a holistic, personalized and consistent experience across channels when making recommendations—not only in terms of products or assortment of products, but also in terms of presenting each consumer with an attractive design layout, offer and price.
4. Investment in advanced analytical methodologies to gain insights from the sparse data generated by the online and offline interactions of new and occasional consumers, as well as new and infrequent products, to make relevant recommendations.

¹ amazon.com, "Record-Setting Holiday Season for Amazon Prime," December 26, 2013, accessed February 4, 2014.

² Netflix, accessed February 4, 2014.



Not my cup of tea

Businesses used to make the bulk of their profits from the sale of a few products and services to a relatively small segment of customers—the 80:20 rule. The Internet and e-commerce are changing that. Companies are now exploring ways to tap into the “long tail”—selling a vast array of niche products, typically not seen or bought by consumers, instead of only selling large volumes of a reduced number of popular items to a few consumers.³

But making personalized recommendations at scale to the 80 percent is not easy. Suboptimal recommendation engines tend to promote the most popular, rather than most relevant, products and services—the “Harry Potter effect” (see side panel).

Irrespective of where consumers are on the site or what product(s) they are looking for, the suboptimal engine biases recommendations for the top-selling products. Such experiences risk turning off consumers who have little time and no patience for irrelevant offers.

These challenges are not specific to any particular industry. Most consumer-facing industries encounter similar problems, and require customized solutions. Businesses need to optimize their recommendation engines to handle recommending thousands and often millions of options across a multitude of channels, while reducing churn and enhancing customer experience.



The Harry Potter Effect

A fast-growing online retailer with more than one million products and over 14 million customers derives the bulk of its profits from approximately 20 percent of its customers. The remaining 80 percent—many of whom are new to the site—account for only 5 percent of the purchases. The lack of transaction volume, and therefore data, in the “long tail,” makes it difficult for the retailer’s recommendation engine to match a product or piece of content with the likes and preferences of potential customers.

For example, John is looking to buy a book on the C++ programming language. When he enters “C++” in the retailer’s search tab, the site can only recommend top-selling books in the category of educational books, which are not specific to John’s search. When John changes his search to a book on modern investment theory, he is again recommended the “popular” titles from the site, but still irrelevant.

The online retailer is eager to engage its customers through highly relevant offers based on an analysis of purchase patterns and product attributes. Next-generation recommendation engines have the ability to perform this analysis in real time, delivering tailored recommendations that resonate with consumers—providing as much as a 30 percent uplift in some cases.

³ For a basic description, see pcmag.com, accessed January 27, 2014.

Like that; want more

Rarely does the dream customer just happen—they are earned, and companies need to invest in getting to know them. By using a multi-tiered algorithmic approach to understand the personal context of each potential buyer, advanced recommendation engines can help companies earn customer engagement and loyalty, increasing sales.

A multi-tiered recommendation engine is imperative for curating a personalized experience as customers will have different levels of engagement and the amount of data available for each will vary. Based on years of experience and knowledge of his customers, the store owner provides informed advice and answers to customer queries or concerns, suggests relevant purchases and provides discount offers. Similarly, by understanding consumer preferences, analyzing purchasing behavior and building individual profiles, the multi-tiered recommendation engine helps guide consumers intuitively to take the next best action, recommending a purchase that meets their needs.

Experience the potential of personalized recommendation tools

Claire likes to visit her local personal care store to buy new products because of her allergies. She is looking for an odorless sun lotion for sensitive skin to take with her on her upcoming vacation to Portugal. Claire scans the Quick Response (QR) code of a sun lotion with her smartphone for more information, including ratings and reviews, and tries the tester tube for any reaction or adverse smell.

The retailer's mobile app on her phone returns detailed product information, highlighting the hypo-allergenic properties of the lotion. Recognizing Claire, and knowing her previous purchases, trending topics she follows, and online sites she visits regularly, the app also recommends several other products that consumers with similar preferences have bought and liked. The mobile app filters its recommendations by Claire's predicted needs, providing a "today only" 20 percent discount coupon from the manufacturer. It also syncs with the corporate inventory management system, and is able to offer a sale price on one item, due to excess store inventory. Claire is impressed! She purchases the sun lotion and the sale item.



Tailored to me

To make individually tailored and effective suggestions at scale in real time, next generation recommendation engines must be enabled by several key capabilities:

- **Understand context:** It is important to know the location of each consumer and what he is doing at a particular moment. What is relevant to a consumer at home in the evening with his family will be less relevant when he takes the metro to work in the morning or when he is on vacation outside the country. Using the power of analytics, recommendation engines need to understand the context in which an individual is living at a particular moment.
- **Adjust based on insight:** The recommendation engine needs to make automatic improvements based on feedback from previous recommendations. In addition, ongoing measurement and periodic tuning will be needed to ensure high performance in a world where consumer demands and product assortments are ever changing.
- **Scale and flex:** The sheer volume of data arising from multiple sources, and the analytics horsepower needed to provide relevant recommendations in real time will require a robust and dynamic technical architecture. As the customer and product base grows, and new channels emerge, the architecture will need to scale quickly.
- **Test, learn, earn:** The analytics behind recommendation engines is very complex. Having a solution that allows business users to quickly simulate performance before moving into production is crucial for minimizing risk at a critical customer touchpoint.
- **Be analytics masters:** To avoid the "Harry Potter" effect, recommendation engines must not only deal with the breadth of data on a very diverse customer set, but also work with very sparse data due to new or infrequent customers and products. This calls for both advanced analytics capabilities and a multi-tiered algorithmic approach—important for ensuring that the "one-size fits all" approach isn't force fitted across the most valuable and frequent customers in favor of the one-time visitors.
- **Support business users:** A highly effective recommendation engine does more than serve up relevant offers. It gives business users greater control over performance. This can be as simple as filtering recommendations based on what is in stock, tying supplier incentives to recommendations, or addressing internal needs such as excess inventory or revenue goals.

Customer relevance at scale

Companies aspiring to provide the right product at the right time through the right channel to each consumer, need to understand consumers in the context of the world in which they live. By learning about consumer preferences and adapting to changes in their lifestyle, interests, location or circle of influence, companies can significantly increase their ability to stay relevant, and competitive. Most importantly, companies that harness the power of advanced analytics to drive their recommendation engines will not only find, but also thread, the needle in the continually growing haystack of consumer data.

To learn more about how to harness the potential of advanced recommendation engines, contact:

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