The Path to Personalization for e-Commerce

North America Edition

Respect the Shopper:

The Path to Personalization for e-Commerce

Summary

Personalization is a top action item for retailers today not only for its significant potential in terms of business value, but for its proven ability to drive customer loyalty, build customer lifetime value and increase market share. Today, online retailers have multiple options when it comes to choosing a path to add personalization to their customers' online shopping experiences. This paper investigates various personalization technologies and vendor categories available to online retailers.

In the offline retail world, consumers flow through a store and savvy merchants place end-caps and promotions in strategic locations to capture the interest of passers-by. On the web, online merchants have a similar opportunity to capitalize on the use of "virtual end-caps" to generate interest and promote relevant content directly to consumers. Truly savvy merchants look for ways to personalize the shopping experience so that each online promotion or product placement is relevant to the wants and desires of the *individual* consumer.

In the early days of e-commerce, personalization was almost entirely based on the wisdom of the crowd, employing just a few simple collaborative filtering algorithms ("customers who purchased X also purchased Y", "Top Sellers", etc.). But, just as online consumers have grown more sophisticated, so have personalization solutions in their ability to better tailor a consumer's experience. Rather than merely reminding consumers of other users' past behavior, personalization solutions can now recommend items based on a much wider array of data. In addition to the wisdom of the crowd, solutions can consider behavior of the individual and relationships between products or groups of products to predict what items consumers might find compelling.

Today, online retailers have multiple options when it comes to choosing a path to add

personalization to their customers' online shopping experiences. "Personalization" is a broad category with solutions that vary greatly in approach. In it simplest form, personalization can involve shoppers creating personal profiles that outline the kinds of features or information they want to see. Other common personalization methods—some simple and others more complex—include:

- **Versioning:** displaying different versions of pages based on segmented customers

- **Product recommendations:** targeted merchandising based on anonymous data (implicit, explicit or both) gathered about a shopper.

- **Interactive filtering solutions:** displaying specific information based on a customer's directive

A successful personalization initiative can generate increased shopper engagement and conversions (as measured by length of visit and average order value), so choosing—and navigating—the right path should be a deliberate, strategic effort. This paper is designed to help online retailers consider the challenges before them and offer advice on how to pick a path to personalization that not only increases short-term revenue, but also strengthens relationships with consumers to increase their lifetime value.

> **Online Personalization Today**
>
> For the first time in the NRF/KPMG Retail Horizon's ten-year survey history, retailers' websites or online channels eclipsed physical stores as the top channel for marketers (81% for brick-and-mortar vs. 86% online). More than half (53%) of those surveyed say they will specifically focus on web personalization engines.[1]
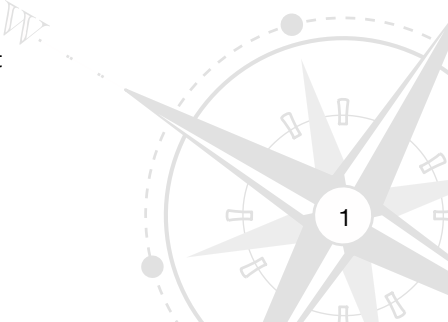
Challenges of Customer Engagement

Retailers face numerous challenges as they strive to engage shoppers online—in particular, how to meet user expectations and achieve merchandiser goals while maintaining a competitive edge. Balancing all three objectives is difficult in a world where the preferences of site visitors are largely unknown.

Rate of Adoption

A Retail TouchPoints study in September 2012 revealed that cutting-edge retailers utilize personalization as an integral part of the online browsing and buying experience, with 54.4% employing product recommendations.[2]

Meeting User Expectations

Each visitor arrives at a retail site with an agenda. Whether they clicked through a link from a search engine, were directed from an email campaign, or simply came to browse before making an in-store purchase, visitors arrive with a particular frame of reference that can be leveraged by the retailer to immediately begin personalizing their site experience. For example, consumers' search keywords on a search engine are available to retailers and can be used to inform display of relevant content when consumers click through search results to a retailer's site. Visitors clicking through from email campaigns can arrive on landing pages specifically designed for the campaigns as well as being populated with relevant content based on shopper's past purchase history and behavior. With the growth of e-commerce, personalization in various forms steadily increased and consumers now expect tools that help them find what they seek quickly—to complete their agenda. In particular, quality personalized recommendations and targeted relevant content have become effective alternative means of navigating a retail site, on par with the search and browse features of the site. Merchants who meet users' expectations with regard to these tools gain favor while those who fall short see higher rates of abandonment as consumers jump to competitor sites that better enable their shopping experience.

Achieving Merchandiser Goals

A common disconnect in the merchant–customer relationship occurs when merchants confuse shoppers by substituting their own goals for those of the consumer. For example, an online retailer with excess inventory of an item may use prime online real estate across a site to move it as quickly as possible. For consumers coming to the site looking for one category of products, being immediately presented items from another category—completely unrelated to their frame of reference—can be disorienting. A personalization solution can solve this conflict of interest by bringing the two sets of goals together. For example, promotional offers can focus on the specific customers that are predisposed to finding them relevant—thus increasing merchandisers' desired KPIs and driving sales without sacrificing the shopper experience.

Maintaining Competitive Advantage

Online retailers are highly competitive—trying to outpace rivals in page views, average order value, and sales volume. Personalization offers retailers the opportunity to deeply engage consumers, keeping them onsite to complete transactions instead of jumping to a competitor's site. The use of personalization on landing pages for SEO or SEM campaigns exemplifies this level of active engagement. When a shopper lands on such a page, a personalization system can show them not only the specific product they were searching for, but a range of alternatives and accessories they might not otherwise have been aware of. It can also do so in a way that modifies the landing page template, such that the searched item and corresponding alternatives are top and center on the page, honing in on the shopper's buying mindset. This not only reduces bounce rate, but also drives longer sessions and incremental sales, thereby reinforcing the retailer's competitive advantage with each individual sale.

The Potential of Personalization

Due to a lack of insight and tools to immediately respond to customer behaviors, retailers have found it difficult to simultaneously achieve the three goals listed above. The inability to craft customized responses forces online retailers to adopt generalized marketing campaigns that appeal to a broad audience. Personalization solutions offer a promising alternative to this hit-or-miss approach as retailers can not only access new data about their customers, but also respond to behaviors in real-time. Even the ability to respond to anonymous browsers (those with no recorded purchase history or behavioral information) is no longer out of reach; intent can be detected through their real-time behavior--which items are viewed and/or the paths they take through a site.

However, a personalization solution that is built or executed poorly can result in not just confused consumers but lost revenue. For example, when a solution neglects to consider context or is not fine-tuned to broader category attributes, inappropriate products may be paired. An accidental, inappropriate pairing between categories—e.g. adult content recommended on a children's product page—can defeat a whole project. Personalization, when done right, meets all the challenges noted above by correctly identifying visitors and targeting them with content that is more likely to engage them and spur a purchase.

Personalization Is Not a Checkbox

Personalization is a top action item for retailers because of its significant potential in terms of business value-add. However, it is not an addition that should be taken lightly. The most effective systems can collect enormous amounts of clickstream data and leverage numerous types of algorithms in real-time to create relevant product suggestions via standard recommendations modules while also customizing other aspects of a shopper's experience. This type of system demands constant administration and a high level of technological complexity.

Solution Administration

Complex solutions can oftentimes be difficult to maintain. Companies like Amazon.com have hundreds of developers who build, maintain, and operate their personalization capabilities—a commitment level few retailers are willing or able to engage in. The level of investment may even exceed that of many retailers who have teams of manual merchandisers who pour through reams of data to determine which products should appear together, how to rank them, and how to segment visitors in the hopes of hitting them with messages that matter.

In both cases, the administrative costs of personalization and even manual segmentation become prohibitive for all but the largest online retailers. Even for the largest retailers, the logistics of administering personalization can overwhelm their ability to effectively service their customers.

Solid Technology

Personalization is not for the faint of heart. Failure to take into account the many variables that affect the shopping experience can lead to underperforming personalization features or, worse, recommendations for products that are completely inappropriate—resulting in customer complaints and attrition.

In order to ensure quality, it is critical that a personalization system support rules that allow merchandisers to block certain products that make sense in the mathematical guts of the system, but not in the marketplace. For example, someone shopping for G-rated animated films for their children is not likely to appreciate a recommendation for R-rated action films, even if they or other customers commonly buy both. Essentially, the system needs to accommodate the construction of guardrails that prevent these types of scenarios.

In addition to getting the data and algorithms right, it is critical that a personalization solution be built on top of a robust scalable platform that is always available and can handle traffic spikes like those that occur during sales or holiday shopping seasons. Today, this typically means a distributed, cloud-based system, with guaranteed redundancy, geographic distribution, and high security.

Innovation

A committed personalization partner who is constantly developing new ways to engage the customer and boost conversion.

Intelligent Personalization

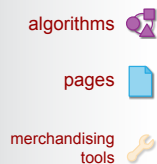15+ Algorithms in uniquely optimized placements on many pages. Numerous Merchandising Tools.

algorithms

pages

merchandising tools
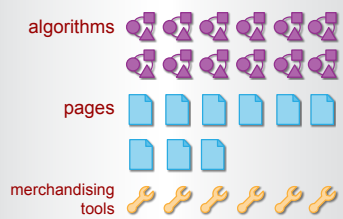
Add-On

3-5 Algorithms, still hard-coded to specific pages. Some basic merchandising tools.

algorithms

pages

merchandising tools

In-House

1-2 Algorithms, hard-coded on 1-2 pages.

algorithms

pages

merchandising tools

Personalization Landscape: What Are My Options?

Retailer choices for personalization fall into three distinct categories: rent the services from an existing platform vendor who offers some kind of personalization capabilities, build it yourself, or buy a best-of-breed solution. Each choice builds upon a common set of technologies with varying abilities to support them.

A Quick Look at Technology

Before we dive into these options, it helps to see how personalization has changed since its inception online. The earliest technologies behind personalization included:

- *User profiling:* using data collected from a number of different sites, which could result in the creation a personalized web page before the user has been formally identified. This kind of personalization typically requires actual user feedback, although tie-ins with social networks like Facebook can aid in the collection of data.

- *Data analysis:* used to predict likely future interactions. This is most commonly done through analytics tools that provide a historical perspective to personalization, but fail to address current consumer behavior and suffer from an inability to detect micro-trends.

Although the approaches above provided value, newer and more intelligent technology has broadened the range of options.

- **Collaborative Filtering.** This approach offers recommendations to users based on the activity of users with similar histories. Most Internet shoppers have seen this approach at work in recommendations delivered in the form of, "People who bought X also bought Y." Amazon popularized several variants of this approach in the late '90s.

- **Recent Behaviour Pattern Matching.** This approach analyzes real-time user behavior in order to choose products to recommend. The premise of this approach is that the manner in which people browse through a site contains clues as to the products they are most likely to eventually purchase. The system then gets these products in front of them quickly.

- **Visual Similarity.** This strategy uses the similarities of digital images to recommend similar products. Such an approach has the potential for quickly generating new lists of products that cut across traditional categories, such as a list of wooden products across Kitchen and Living Room categories.

- **Neural Network Modeling.** In contrast to the three approaches above—which are built to use specific properties of specific kinds of data, such as page views, purchase history, and so on—neural networks are a more general approach designed to learn patterns in any kind of data. The downside of this approach is that it is difficult, if not impossible, to explain why any given recommendation was made.

While each method for personalization has the potential to enhance the shopping experience, the most successful personalization solutions:

- Employ a variety of recommendation strategies

- Choose the right strategy, at the right time, in the right context

- Continually improve by incorporating dynamic user and product data

- Rebuild models many times per day to capture new trends and incorporate changes in inventory data

Now, let's take a look at the three basic options mentioned above.

"Add-on" Options

For retailers looking to create a personalized experience for their customers, using an add-on solution from either an analytics vendor or e-commerce platform provider may seem like the simplest and most convenient option. The platform is already installed and licensing the personalization feature may be all that is needed. However, while these providers excel at their core competency—be it delivery of content or analysis--they most likely only provide basic personalization capabilities that do not take advantage of all available personalization technologies (listed in the last section) in an integrated fashion. It is important to note that personalization "add-ons" are frequently acquired technologies and thus require additional installation. Another consideration is the level of support and flexibility that accompanies a standard add-on solution. For personalization tools, the ongoing investment made by a dedicated client support team is essential in a) customizing the system so that it achieves the best performance possible and b) meeting the specific set of criteria that a merchant might be looking for.

In-House Development

"We know our customers better than anyone else." Retailers often say this and it is usually true … in the aggregate. However, when we talk about personalization we are talking about delivering the most relevant product or content recommendations to *individuals.* No matter how knowledgeable large online retailers are about their customer segments, it is impossible for them to know everything about each shopper or to know anything about first-time visitors. This limits the effectiveness of manual merchandising and forces merchants to consider technology solutions.

Merchants who turn to technology to automate the process may be tempted to build their own personalization solutions. By all appearances this would allow them to take advantage of their manual merchandising teams while giving them the ability to identify individuals on site. A quick reminder: it takes dozens of developers with expertise in both application development and the science

of algorithms to build a first-generation personalization engine. Then, it takes years of learning to optimize the engine to current market capabilities. Few retailers can afford the years of development and learning that is required to become competitive online.

Personalization Vendors

With their focused investment in development and experience in providing an optimized solution, personalization vendors offer retailers the best choice to reach consumers with relevant product recommendations and content. However, even within personalization provider space, there are clear differentiators between vendors that should guide retailers in their decision-making.

Like platform vendors, many personalization solutions are adept at handling one or two of the technologies mentioned earlier in this document, but only a few handle all the technologies. Even fewer allow those technologies to compete and select the best-performing technology to power personalization strategies. Other key considerations regarding vendor solutions include:

- **Infrastructure.** Multiple data centers located across geographies provide faster response times and superior uptime.

- **Frequent updates.** Few personalization vendors rebuild models and data every few hours; most update nightly. Nightly updates fail to capture micro-trends that can occur throughout the day.

- **Segmentation.** Marketing teams run email campaigns and online promotions and need the ability to target their messages. A limited number of personalization vendors move beyond recommendations to include dynamic targeting and segmentation.

- **Transparency.** A key factor in deploying any personalization solution is the ability to understand the decisions made on behalf of the retailer. Lack of transparency often leads to distrust and a feeling that in-house development may be a preferable path to personalization.

Navigating the Path to Personalization

The following are key considerations to help guide your thinking as you decide how to personalize your online consumer shopping experience. While not an exhaustive list, it is broadly applicable to most retailers.

- **Resources**. Understand the resources you can devote to your personalization project. If you cannot field a team of developers and science/analytics professionals to build and maintain your own systems, consider a vendor. If you are a large retailer, you should also consider whether you need a vendor who has expertise in retail and can act as a full-service partner.

- **Reporting**. Reporting should allow a high-level view of shopper activity and an ability to drill down to activity at the category or even the product/item level. This enables the kind of transparency necessary to gain trust in the decision of any personalization engine.

- **Algorithms**. Changes in the algorithms used to determine what product or content recommendations will be displayed should be automated, not manual. Best practices allow algorithms to compete with one another so the best-performing one will always be used. To maintain transparency, whatever algorithm is used should be open to inspection by the retailer and not concealed behind a "black box" approach.

- **Expertise**. Regardless of the path you choose, ensure that the solution provider demonstrates expertise in dealing with online retailers. Algorithms are finely tuned to industry needs, and experience within retail ensures you are leveraging the technology to your specific business needs and objectives.

- **Client services**. No two retailers are alike. A personalization vendor should not only have expertise in retail, but also have a client services team that similarly possesses an expert awareness of the needs within your industry and the know-how to implement best practices for success.

- **Infrastructure**. Whether you build your own or choose a vendor solution, ensure that you have adequate infrastructure to meet the performance expectations of consumers. This includes regional data centers, the use of caching servers (e.g., Akamai) for static content, and implementation of back-end systems that can process peak loads and frequent model rebuilds without compromising response time.

- **Vision**. Personalization is often reduced to "recommendations." Consumer behavior can be applied to targeting for online promotions, segmentation of email campaigns, and even site monetization strategies. Consider the ways you might use personalization on your site and choose a solution that will help meet your goals both today and in the future.

Conclusion

By considering all these topics as you navigate your path to personalization, you will better engage your customers—and increase revenues as a result. It may be tempting to build your own personalization solution or adopt a "single-vendor" strategy and license basic personalization functionality from a platform vendor. But choosing a partner that can help you navigate the path to personalization will provide you with the superior results and return on investment that will help you maintain growth as your business evolves.

Endnotes

1   NRF. "For Retailers, 2012 All About Customer Interaction and Experience, NRF/KPMG Report Finds." 12 October 2012.
http://www.nrf.com/modules.php?name=News&op=viewlive&sp_id=1312

2   Retail Touchpoints. "Cutting-Edge Retailers Lead The Pack In Localization And Personalization." 12 October 2012.
http://www.retailtouchpoints.com/shopper-engagement/1877-cutting-edge-retailers-lead-the-pack-in-localization-and-personalization

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Dynamic Personalization for Commerce

RichRelevance delivers over one billion product recommendations daily, powering the personalized shopping experiences for consumers shopping the world's largest and most innovative retail brands like Walmart, Sears, Target, Marks & Spencer and John Lewis. Founded and led by the e-commerce expert who helped pioneer personalization at Amazon.com, RichRelevance helps retailers increase sales and customer engagement by recommending the most relevant products to consumers regardless of the channel they are shopping. RichRelevance has delivered more than $8 billion in attributable sales for its retail clients to date, and is accelerating these results with the introduction of a new form of digital advertising called Shopping Media which allows manufacturers to engage consumers where it matters most—in the digital aisles on the largest retail sites in world. RichRelevance is headquartered in San Francisco, with offices in New York, Seattle, Boston, London, Munich and Paris.

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