

Customers, Customers, Customers—Keep Them Coming Back

Architecting personalization into customer facing web sites can produce significant benefits.

Mike Vincent

Personalization

This morning I'm meeting with Bob Kelly, our marketing director, and David Campbell, a new software architect on our team, to review progress on a web improvement project for expanding accessory sales in our increasingly competitive market place. Adventure Works is the nation's second largest bicycle internet and retail company. Bob tells me that he will have the new line of Adventure Works branded clothing, helmets, shoes and components ready to launch in six weeks. Company growth squarely depends on successful execution of this new line. IT and marketing have been working closely together on a strategy that includes an upgrade of the Adventure Works public web site to have maximum immediate and long-term impact with our customers.

“Could you walk through the personalization strategy you outlined as a critical part of this project? How is it going to set us apart from our competitors as we launch our new line?” Bob asks.

“I'll be glad to. At a high level, personalization is the process of tailoring web pages to individual user's preferences and characteristics. The objective of personalization is to bring virtual *one-on-one marketing* to the user, similar to what we provide in our brick and mortar retail stores. We dynamically tailor the user's web experience in such a way, that the customer's needs are met in a more effective, efficient and personal manner. Interactions are faster and easier for the customer, providing increased customer satisfaction and likelihood of repeat visits.”

“Repeat visits! We need more of that. That's the key to increasing our accessory and component business,” remarked Bob.

Getting the User to Register With Us

“Let's look a little deeper at what we have in the works,” I replied. “We start by gathering user information. That begins with getting the user to register with us.”

“Our current home page seems to be a little plain here, just like our major competitors.” David observed. “There is a menu pad at the top of the page for ‘Your Account’, and a sign-up block at the bottom of the page to join our email list. What changes are planned for the upgrade to make this more effective?”

“Good observation, David. Our new upgrade will contain a content block on the home page called *My Adventure Works*, where the user can register or log in. It describes the benefits of

registering such as customized content, notification of new products and special events, with a quick and easy process. A link to *My Adventure Works* will also appear on all generic pages. When the user registers, we will provide a listing of preferences that can be checked. This will help us better connect with the user's needs and desires such as age, gender and other demographics, cycling preferences (recreational, kids, mountain biking, touring, road, triathlon, competitive cycling), cycling experience (novice, recreational, regular, competitive), cycling miles per week, cycling interests (clubs, events, clinics), along with email and newsletter options. We will then utilize this information to provide a customized experience."

Tracking Web and Purchase History

"And, you should note that making an on-line purchase includes either initial registration or validation of existing registration data. The customer profile initiated with the user fill-in form is only the beginning. We then build on that with things like purchase history and pages visited"

"Okay, let me be sure I'm following the direction here," said Bob. "The customer's purchase history and page-hits on our web site provides us with direct information for suggesting additional products that the customer may want to consider. For instance, if a customer is purchasing a new bike using our *customization and ordering wizard*, we can suggest clothing, shoes, helmets, tire repair kits, and maybe a cyclo-computer."

Users Dislike Reentering Information

"And," I explained further, "if a customer is in the middle of the bike *customization and ordering wizard*, he can exit and come back at any time and his information will be saved. Users dislike reentering information, so we make an extra effort to mitigate potential negative experiences. Using the delivery date of a new bike and the customer's estimated miles-ridden per week, we can suggest service and maintenance items. As the weather and seasons change, we can suggest appropriate apparel."

"Now I'm seeing some positive value added that really benefits servicing the customer." Bob continued, "In addition, if a customer visits or takes delivery of a new bike at one of our brick and mortar stores, we now have a great deal of information to provide a much higher level of personalized service."

Personalization Doesn't Have To Be Based Solely on Individual User Input

"What happens if the user doesn't register right away?" asked Bob.

"Personalization doesn't have to be based solely on individual user input. By tracking the user's behavior on our site, we can identify group membership with content designed for a predefined audience. This allows us to provide tailored content without having established a one-to-one relationship. For example, when shopping for a new bike, a customer will need to select gender then choose the type of bike such as touring, road or mountain bike she is interested in. We store a **cookie** on her computer, linking her to our tracking database, and next time she visits we already know something about her. We can do things like showing recently view items, not only in the current session but also on return visits," I added.

“This is great for gently building a customer relationship,” commented Bob.

“Does the user have to log in on each visit to our website to get the benefits of being registered or is there some other more transparent mechanism?” David asked.

“If the user accesses our Adventure Works site from a computer he used to previously log in, and cookies are allowed, he will be recognized with a personal greeting and immediately gain the benefits of the *My Adventure Works* personalization. We want to make the interaction efficient and satisfying for both parties.”

“Then that explains the note at the bottom of our new home page indicating that cookies must be enabled in order to experience the full functionality of our website,” observed Bob.

Building customer loyalty and trust, don't forget about security

“That brings up the issue of security. Are there special things that have to be implemented?” asked David.

“Any time during a session where a financial transaction is in progress, or sensitive information is being collected, we do require that the customer actually be logged in and the page will render in SSL mode to safe guard data,” I answered. “Users have become sophisticated in their internet use and will expect these safe guards to be in place.”

“Now we're making progress in differentiating ourselves from our competition,” said Bob. “We are building customer loyalty and trust. I can combine individual data, along with sales data, and page visits to see group trends on which we can base marketing decisions. We can then use this data to further enhance service to customers, and we should always encourage the customer to return. We are starting to make it compelling to do business with Adventure Works.”

Different Levels of Personalization for Different Situations

“It is also important for us to provide different levels of personalization focus for different situations. For bikes, we provide the *customization and ordering wizard* to facilitate the building of a detailed specific one-time purchase. Supporting this, is automatic persistence of the state of the user's choices, the ability to independently drill down on details of components without losing context, and side-by-side comparison of detailed specifications. For clothing, shoes, helmets and accessory shopping we provide user options for the number of items displayed on a page and the ability for side-by-side comparison of up to three items. For customer marketing and service follow-up, we can track purchases for email communication on service reminders, special events, and bike and accessory sales promotions.”

“Are there more sophisticated ways we can further personalize the user experience?” asked David.

“We can use techniques like data analysis, **user profiling** [Schiaffino 2006] and **collaborative filtering** [Bonnet 2006] to further dynamically refine how content is presented to customers. For example, using *collaborative filtering* we will be able to dynamically create a mash-up

displaying upcoming cycling events in the user's local area for display in our events content block.”

Analyze Your Data to Help Stay Connected With Your Customers

“We will be using *user profiling* to suggest new clothing and accessory purchases to customers based on all of the customer's available sales and dynamic profile. Knowing who our users are and what they want is a continuous evaluation process in which we apply techniques such as social filtering, Case Based Reasoning and Bayesian Networks to refine changes of interest over time. Behind the scenes we use **business intelligence** to analyze the data we collect to help us measure how well we are staying connected with our customers and to make strategic decisions on product and service offerings.”

“Okay, this project is really moving ahead nicely. Architecting for personalization will position us clearly ahead of our competition. We'll be able to engage users on our website, convert them to customers and get those customers to come back. We will be ready to launch our new line of Adventure Works brand clothing, helmets, shoes and components. Customers, customers, customers—we'll keep them coming back!” Bob exclaimed.

Review

Architecting your customer facing web sites for personalization can substantially contribute to building customer loyalty. In order to effectively implement personalization, you need to reflect on what creates satisfying experiences in the “real world” and create an electronic equivalent. Begin by understanding your customers. Strive to satisfy needs stated by your customers and anticipate their potential needs. Remember that every point of interaction with your customers must build on creating positive user satisfaction. Continue to gather intelligence from which to refine your business perception of customer needs.

The art of being a successful architect is effectively bringing together business needs and information technology. Architect for Personalization.

Critical Thinking Questions

- The Challenges
 - How do you determine and establish the user's needs from which you will build personalization services?
 - How do you provide personalization services so that they result in tangible benefits?
- Usability
 - How do you approach usability as part of your personalization strategy?
 - How do you validate your usability assumptions?
- Ethics (Privacy)
 - Have you provided appropriate security to protect user private information?
 - Have you published your privacy and security policies to your users?

- In what other ways can you demonstrate a high degree of ethics to users in your personalization strategy?
- Building Relationships
 - Are you able to deliver on everything promised and implied on your web site?
 - Do you continually test and validate that personalization services contribute to building positive relationships with your customers?
 - Have you implemented thorough testing to avoid any potential negative issues?
- Measuring Success
 - Are you capturing all the relevant data you need?
 - What steps have you taken to measure success of your personalization strategy?
 - Quantitatively
 - Qualitatively
 - Have you implemented business intelligence methodology to harvest information from the data you have collected?

Sources

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About the Author

Mike Vincent is a solutions architect with speakTECH, a Microsoft Gold Certified Partner in Orange County, California providing clients with enterprise and software architecture and development services, primarily focusing on Microsoft .NET technology. He founded and leads both the IASA SoCal Chapter and the Orange County C# Developers group. Mike is a frequent presenter at local and regional user groups and is a driving force for the SoCal .Net Technical Summit conferences.

Glossary

Business intelligence. A broad category of applications and technologies for gathering, providing access to, and analyzing data for the purpose of helping enterprise users make better business decisions. The term implies having a comprehensive knowledge of all of the factors that affect your business. It is imperative that you have an in depth knowledge about factors such as your customers, competitors, business partners, economic environment, and internal operations to make effective and good quality business decisions. Business intelligence enables you to make these kinds of decisions.

Collaborative filtering. A technique in which a filter is applied to information from different sites to select relevant data that may apply to the specific e-commerce experience of a customer or specific group of customers.

Cookie. Information that a web site puts on the user's hard drive so that can remember something about the user at a later time. They can be used to customize pages based on browser type or other information the user may have provided the web site. Web users must agree to let cookies be saved for them, but, in general, cookies help web sites to serve users better.

Customization. Customization is where a user can manually create an interface by adding, positioning and removing elements and persist to a profile. Customization complements personalization.

Data analysis. Tools used to predict likely future interactions

- Case-Based Reasoning provides a mechanism to acquire knowledge about user actions that are worth recording to determine his habits and preferences.
- Bayesian Networks provide a tool to model quantitative and qualitative relationships between items of interest. Information needed to build the BN is taken from cases stored in the case base.
- These techniques support particular user's routines and changes of interests over time.

User profiling. A process of gathering all known information about the audience of a product, and then breaking them into specific 'profiles'. These profiles, or 'personas', can then be used in the creation of personalized Web pages to ensure that the design will work for the intended audience.