

1 What Are Google™ Mashups?

introduction:

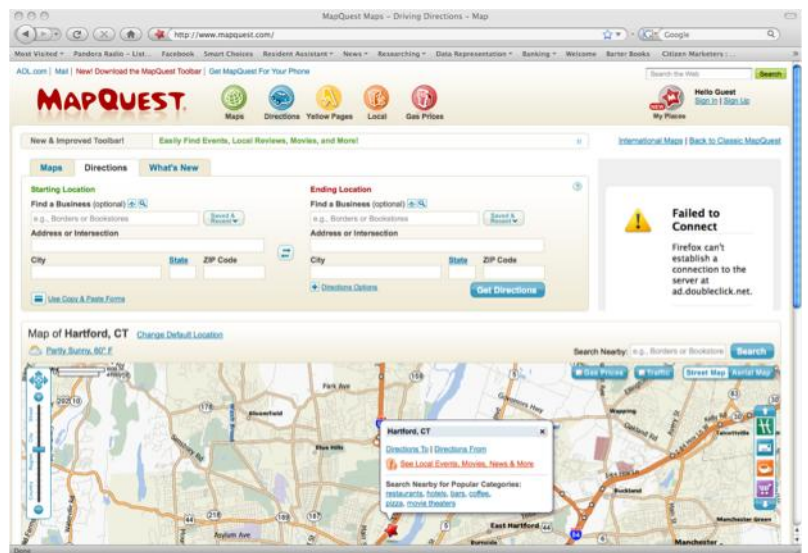
the age of customization

Our world is becoming increasingly customizable; the music we listen to, the features of the cars we drive, the articles we see when we log onto a news website, the content of online encyclopedias, and even the sounds our phones make when we receive phone calls.

The 1996 launch of GeoSystems Global Corporation's (GGC) *MapQuest.com*, which received one million viewers in its first thirty days of operation, is a prime example of the age of customization. The website (shown at right), purchased by America Online® (AOL) in 2000, allows visitors to enter a start address and destination and obtain personalized, step-by-step directions on the best route to take (Layton, 1998-2009).

Travelers no longer needed to depend on interpreting a generic road map to chart their routes, as they now had the capability to receive tailored directions at the push of a button.

This concept of a personalized map, however, is not a new one. For years, the American Automobile Association (AAA) has offered its members a service called "TripTiks®" with which individuals can provide AAA with basic information about their starting location and destination for a trip, and a AAA representative will plot the best route with a colored marker on a paper map. Online mapping technology has made this service more practical, as it no longer requires a paid individual with a map and a marker to plot the route. AAA now offers this service online, on a website that looks and operates much like MapQuest®.



MapQuest® Website
The website offers its users customized directions from point A to point B, even zeroing in on the estimated location of the user upon visiting the site.

Without a doubt, technology has made many expensive personalized services available to the masses. This paper will focus on one such example of customization, the Google Map™ mashup, and will explore the ways in which this kind of personalized online map can be used to make a significant difference in a community.

a product of the age of customization: the mashup

A mashup is defined as an online resource that combines data from multiple sources to create a more powerful, useful online tool. A term formerly used to define combinations of pre-recorded music, “mashup” is now used commonly to refer to online projects that amalgamate data from two or more preexisting sources to make one integrated product. In his book *Citizen Marketers: When People Are the Message*,” author Ben McConnell describes mashups as a by-product of the “Web 2.0” generation, wherein web users create a “hybrid combination of two or more data sources that when combined, create a new product or improve an existing one.” He describes the “Web 2.0” generation as “creating collaborative Web experiences when information is shared multilaterally.” Other “products” of this generation of web users include WebLogs (“blogs”), Wikis (like *Wikipedia.org*), and RSS (“Really Simple Syndication”) Feeds. He adds, “If “Web 1.0” was primarily one-way communication between Web-site owner and visitor, then Web 2.0 is multiple-way communication between Web-site owner and visitor, and visitors with other visitors,” (McConnell, 2006). In their paper “Map Mashups and the Rise of Amateur Cartographers and Mapmakers,” authors Elise Pietroniro and Darlene Fichter attribute the explosion of this kind of user-to-user information sharing to the expansion of Internet availability and the decrease in cost of personal computers, describing these as “fertile soil for the rise of citizen journalism and multimedia production by anyone for anyone” (Pietroniro & Fichter, 2007).

THE GOOGLE MAP™ MASHUP Google Map™ mashups, or “Google™ mashups,” use this mashup principle to create new maps by combining other sources of information with Google’s online mapping technology. While Yahoo!® and MSN® have also made their mapping systems available for use by the public, it is the simplicity of Google’s mapping technology that has allowed programmers to “borrow” its service for use in creating online map mashups (Miller, 2006).

Like ordinary maps, Google™ mashups display locations selected by the map's creator, but unlike most maps, anybody with Internet access can create a personalized map mashup, using one of several available websites designed to allow people to create their own personalized maps (some of which are shown later in the chapter, with more listed in the Appendix).

By and large, mashups reside on the website used to create them, and depending on the security settings selected by their creators, can often be edited by anyone with the correct login information (Hughes & Jackson, 2007). The result is essentially a three-layered online map, with Google Map™ technology at its core, the mashup website in the middle, and the mapmaker's personalizations on top (diagram shown at right).



Three Layers of a Google™ Mashup

A Google mashup consists essentially of three layers, shown in this diagram.

A BRIEF HISTORY OF MASHUPS The technology for personalized online maps first appeared in early 2005, when developers saw an opportunity to use the newly available online mapping capabilities to allow average Internet users to make their own maps (Hughes & Jackson, 2007). Miller (2006) explains,

Not long after the launch of Google Maps™, alien data (i.e., data not provided by Google™) began appearing over its maps (those hosted by other site, anyway). These data were by turns curious and serious, clever and vital. Google Maps™ mashups (a subset of mashups in general) are the resultant combinations of the existing Google Maps™ geospatial query/display engine with geospatial data provided by non-Google™ users. In many of these mashups, the data are not even provided by ordinary users but merely collected by them. In fact, some of the most compelling mashups so far are the combinations of Google Maps™ with some other data source for which the masher-up (I'm not sure a noun has been established to describe this person: "mashero," perhaps) has no real responsibility.

The popularization of Google™ mashups is attributed to software engineer Paul Rademacher after the creation of his website HousingMaps.com (shown below), which he created after becoming frustrated with the process of finding real estate listings in the newspaper and subsequently needing to look up the locations of each listing on Google Maps™. His website amalgamates real estate listings from Craigslist.com, a website that lists local classified advertisements in almost 600 cities worldwide, with Google™ map technology (Pietroniro & Fichter, 2007).

CHAPTER 1: WHAT ARE GOOGLE™ MASHUPS?

The screenshot shows the HousingMaps.com website interface. At the top, there's a navigation bar with links like 'For Rent', 'For Sale', 'Rooms', and 'Sublets'. Below that, a search bar is set to 'City: Boston' and 'Price: \$1500 - \$2000'. The main area features a Google Map of Boston with many yellow pushpin markers. A pop-up window for a specific property in Braintree is open, displaying a title '\$1,600 - 2bd Convenient to Braintree T (Red line) -', a location 'Liberty St & Matthew Ln Braintree', and contact details '781-356-1345 / email'. To the right of the map is a table of property listings with columns for price, bedrooms, description, city, and date.

price	bed	description	city	date
\$1550	1bd	711 or 811 Modern High-rise, walk to Harvard Square, parking incl.	Somerville	3/29
\$1800	1bd	All Utilities Included Great location Cambridge	Cambridge	3/29
\$1700	2bd	1Bed + Study + Spare Room, 7min to T, In-Unit Laundry, Dv, Ava 5/1 or 6/1	Somerville	3/29
\$1650	2bd	5/1 Giant Size 2 Bed+ Study +Renovated/New Dv/Fridge/Oven/ Lib +Garage	Boston	3/29
\$1845	2bd	1,300 Sq. Ft. // // Two Bedroom/Two Bathroom Corner Unit	Quincy	3/29
\$1700	1bd	Huge 907 sq ft One Bedroom, Fitness Center/Parking Included	Waltham	3/29
\$1560	2bd	2 Bed/2 Bath, Spacious, Free Rent! Pet Friendly!	Burlington	3/29
\$1635	1bd	Limited Availability! Spring Forward in Your New Home!	Bedford	3/29
\$1800	3bd	3/4 Bedroom 2 Bath 1,500 sq ft Ranch!	Oak Hill Rd.	3/29
\$1925	2bd	Large 2 BR - June 1st - Beautiful Location!	Boston	3/29
\$1600	2bd	2 plus bdrm Great Location! B&C Lines	Boston	3/29
\$1700		Modern Downtown Living!	Boston	3/29
\$1500	2bd	w/ 2 Full Baths	Boston	3/29
\$1700	2bd	Condo quality new 2 BR w/parking	Cambridge	3/29
\$1600	4bd	Luxury 4 Bedrooms Apartments	Lynn	3/29
		2bath/2orks/Heat & Wat.		

HousingMaps.com

The mashup shown above is the evolved version of one of the first instances of combining Google Map technology with information from another source. In this case, “mashero” Paul Rademacher combined Google mapping with real estate listings from Craigslist.com (Rademacher, 2009).

MAKING A GOOGLE™ MASHUP There are many available websites for creating Google™ mashups, such as *YourGmap.com*, *ZeeMaps.com*, and *MapBuilder.net* (each shown on the next page). Not every website follows the same format or provides the same features to its users. All Google™ mashup websites allow Internet users to input an address, which is then displayed on the map using a small pushpin-like marker (an example of which is shown at right), using Google map technology to place the marker in the right spot on the map. In many cases, several of a Google™ mashup’s features are customizable, such as the look or color of the pushpin markers, whether or not a map legend is included, and whether the map is displayed as a satellite image, a traditional map, or a hybrid of the two. Most mashup websites also allow users to decide what appears if the pushpin is clicked by someone viewing the map. Depending on the purpose of the map, the creator may choose to include certain details about the location, such as its address, a title (e.g., whose house it is or the name of the store or travel location), and perhaps more details specific to the purpose of the map, such as a review of the location, business hours, or a telephone number where appropriate. Many sites also allow users to upload pictures from their computers, so that corresponding images appear when a user clicks on each pushpin. What all Google™ mashup sites facilitate is the easy creation of Google™ mashups; individuals do not need any knowledge of html (HyperText Markup Language) or php (another scripting language) code to create somewhat complex web resources, and the maps’ visitors can easily navigate them.



Google™ Map Marker

When a location is plotted on a Google map, the default marker looks like the one shown above, with several available variations (image from Maps.Google.com)



Google™ Mashup Websites
 YourGMap.com,
 MapBuilder.net, and
 ZeeMaps.com (shown
 clockwise from top) are all
 examples of websites
 designed to let Internet
 users create their own
 online maps (Mashup
 Technologies, LLC, 2005-
 2009), (Zee Source, 2005-
 2009), (Gabor Cselle, 2006).

