

Mashups

What happens when location data get meshed up with other information on the web? Maps meet mashups!

—by Elena Malykhina

Take Web 2.0, mix liberally with local maps from across the United States or the world, and add information on restaurants, hotels, gas stations, real estate, or dozens of other potential sources. The result is among the hottest and most useful new generation of applications on the Web—the location mashup.

More than 35,000 location mashups—ranging from restaurant locators to celebrity trackers—have been created using Google Maps alone. Want to know where Madonna has been hanging out? Go to www.gawker.com/stalker, where you can get daily updates on the whereabouts of celebrities, with exact locations plotted on a map. Like much of Web 2.0, location mashups are the province of creative problem solvers who develop them independently. Some businesses have created their own, but many are a step behind the trend.

Mashups rely on Web 2.0 development technologies—Ajax techniques and Adobe’s interactive Flash software, for example—so they function more like interactive software than a static Web page. The user experience can include panning and zooming over a map [for zoomified maps, see <http://www.cartogis.org/>] or aerial view of the Earth; fine-detail maps that appear in small, secondary windows; and other types of dynamic information associated with points on the map.

Mashups typically reuse data and services from other Web sites and Web applications, and they can be created by people who aren’t professional developers. Since they’re assemblages of existing data and services, simple mashups generally don’t require a lot of additional coding.

New tools to build location mashups are emerging. Yahoo released Pipes, an experimental service that lets you remix data feeds and create data mashups in a visual programming environment. A drag-and-drop editor makes it possible to connect multiple Web data sources. Pipes supports GeoRSS—an RSS feed of location information—and the output can be displayed on Yahoo Maps as well as other mapping applications.

Startup FortiusOne is developing [as of March 2007] a public data-sharing service, called GeoCommons, for creating map mashups. GeoCommons is still in the works. FortiusOne also has developed a service, called GeoIQ, that lets developers

add geographic data visualization and analysis capabilities to online mapping applications. A beta version of GeoIQ was released in November 2006. It includes everything from facts and figures detailing the locations of spammers by street address to the incidence of West Nile virus and cancer mortality rates and the locations of bars in New York where single women hang out.

FortiusOne describes GeoIQ as “location intelligence for the masses.” FortiusOne’s APIs can be used by developers to highlight data using heat maps, which use color to represent data. An enterprise version of GeoIQ APIs is available to businesses and government agencies that want to combine and analyze geographic data. The Department of Homeland Security



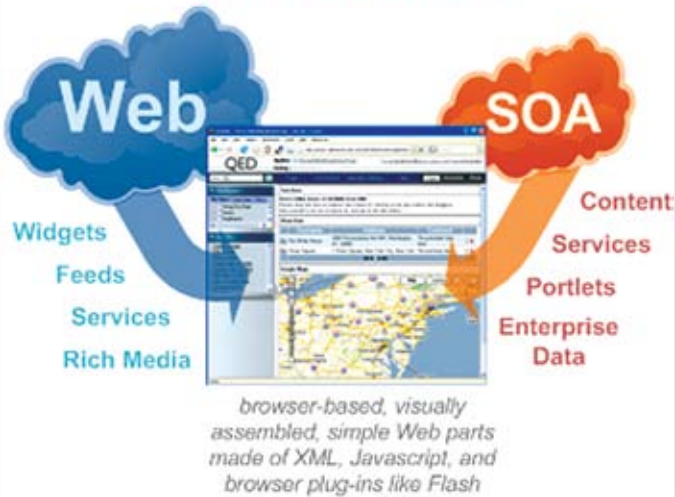
BP’s hurricane warning mashup combines weather, pipeline, and ocean data [source: <http://www.informationweek.com>]

and other agencies use GeoIQ to assess infrastructure vulnerabilities across the country.

MASHUP LAGGARDS

Some companies have developed location mashups to help customers or improve internal operations, or both. Following hurricanes Katrina and Rita in 2005, oil and gas company BP created a “hurricane management system” using Microsoft’s Virtual Earth that provides employees with frequently updated views of weather patterns in the Gulf of Mexico. It draws on geographic information from ESRI Data, a widely used source

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in the petroleum industry, and pulls together historical data on hurricanes, plus information on pipelines, buoys, vehicles, and offices. That's all combined with RSS feeds and information from weather bureaus, oceanographers, satellite images, traffic reports, and hotel vacancies. The system uses Microsoft SharePoint Server 2007 to present layers of information on a map, such as counties affected, weather patterns, and local population and other demographics.

But full-blown location mashups created by businesses aren't that common. In a recent survey of 250 business technology professionals by InformationWeek, only seven percent of respondents said their companies widely use mashup tools. "Businesses have bigger priorities at the moment than worrying how to mash up logistical data or workforce information into a mapping application," says Matt Brown, an analyst at Forrester Research.

Yet, given the relative ease with which location mashups can be created, and their high potential for both internal and customer applications, it's a good bet more companies will discover them. UPS is "playing" with both Virtual Earth and Google Earth, a spokeswoman says, but the package delivery company isn't quite ready to talk about what kind of location mashups it's developing.

Real estate companies are early adopters. John L. Scott Real Estate has integrated Microsoft's Virtual Earth services into its Web site, letting potential clients search for properties in the Northwest using three-dimensional aerial views and interactive maps (see www.johnlscott.com/SearchInteractive.aspx). The company's property search mashup boosted online visits, including return visits, which jumped by 46 percent, says John Chang, the company's VP of marketing and e-business. It took a team of three developers about a month to create the mashup, Chang says.

Microsoft's MapPoint Web service and Virtual Earth platform are used by hundreds of businesses, including Best Buy,

The building blocks of enterprise mashups
[source: <http://www.hinchcliffe.org>]

Century 21, DaimlerChrysler, FedEx, Kinko's, Ford, General Motors, H&R Block, Starbucks, and Target. Most are using them to help customers locate their stores—more practical than consumer mashups that point you to the nearest happy hour.

Starbucks integrated MapPoint into its Web site to make it easier for customers to find its locations, both domestic and international. When caffeine-deprived consumers click on one of the stores identified by Starbucks' locator, they get information on the store's facilities and the option to request driving directions and a route map. Customers can search for stores that have Wi-Fi hotspots, offer drive-through windows, or serve lunch.

Choice Hotels International, operator of eight hotel chains, including Comfort Inn and Clarion, uses MapPoint to let visitors search for a place to stop for the night. Its mashup includes trip-planning tools.

Transportation and logistics company Liaison Can./U.S. has created a location mashup for internal use. The company's dispatchers use the site to track trucks, monitor traffic, reroute vehicles, and cut delivery times. The mashup integrates radio frequency identification tracking data, aerial photography, and interactive maps from Microsoft's Virtual Earth. Additional data are presented below the map in a table; if a dispatcher wants to know more about one of the trucks, he can click on the driver's ID to bring up that information.

It's more common to find location mashups about the business world that have been created by independent developers, not the businesses themselves. A "deal map" at www.socialtech.com/intelligence/map, created with the Google Maps API, displays the geographic distribution of venture funding. Site visitors can narrow their results on a map by selecting an industry or a round of funding. And Ian Spiro, a



Availability of housing [source: <http://www.housingMaps.com>]



Tracking dengue fever on Healthmap [source: <http://www.healthmap.org>]

freelance developer in Silicon Valley, created a Google Maps mashup of fast-food restaurants in the United States. Spiro used data obtained from the Web, not directly from the restaurants.

CREATIVE COMBINATIONS

More than 4,000 “collections” are created each day by users of Microsoft’s Live Search Maps. Microsoft defines collections as “mashups for the masses,” says Alex Daley, lead marketing manager for Microsoft’s Virtual Earth business unit. Collections don’t require the programming know-how of a Web developer—no knowledge of Ajax required.

There’s no limit to how informative and creative consumer location mashups can get. Fans of HBO’s *The Sopranos* can pinpoint key events from the TV show at www.hbo.com/sopranos/map, while the site’s *Crime.Organized* feature combines, among other information, a map showing locations where bad things happen, such as the Bada Bing club’s parking lot or a cemetery.

A top pick on the Google Maps Mania blog is Healthmap (www.healthmap.org), a mashup that brings together data sources to present a unified view of infectious diseases around the world and their effect on people and animals. The mashup was created by Clark Freifeld, a research software developer with the Children’s Hospital Informatics Program at Children’s Hospital Boston, and John Brownstein, a pediatrics instructor at Harvard Medical School. Among the information

sources it pulls together are Google News, global electronic reporting systems that track disease outbreaks, and official alerts from the World Health Organization. The data are aggregated by disease type and displayed on a map; visitors can link to the original alerts from the map. The mashup is widely used by public health officials and international travelers.

A popular mashup created using Yahoo Maps is Runningmap (www.runningmap.com), which lets runners plot their routes and measure the distance. Developed by Randy Troppmann, founder of Web application development company Spin Technologies, the mashup contains a live chat window for sharing running tips and links or asking questions. The Yahoo APIs also were used to create the John F. Kennedy Center for the Performing

Arts’ synchronized map and time line, which lets visitors explore the life of William Shakespeare (www.kennedy-center.org/explorer/shakespeare). You can get a crash course in major events in Shakespeare’s life by clicking on the locations where his plays were staged.

To mashup or not to mashup? That is the question. Businesses need to stop pondering it and learn from consumer sites.

[Interested to pursue further information about mashups? Go to <http://www.informationweek.com/shared/printableArticle.jhtml?articleId=198001255>]

