

## **MAP MASHUPS AND THE RISE OF AMATEUR CARTOGRAPHERS AND MAPMAKERS**

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According to Wikipedia, a web ‘mashup’ is “a website, or web application that combines content from one or more sources”.<sup>1</sup> The word ‘Mashup’ comes from a term that is used in the music industry. In music, the term refers to a genre of popular music whereby the remixing of vocal and instrumental tracks from different songs to create a new song, is practiced. The inspiration for taking sounds that exist and integrating them to communicate a new sound has not been lost in visual communication. The transformation has extended to maps and geospatial content in the form of ‘Map Mashups’. Sites that offered online maps have always been popular online services, however rather than just viewing maps, Internet users can do so much more. This article will discuss map mashups, how they’re being used and their effect on maps and mapmakers today.

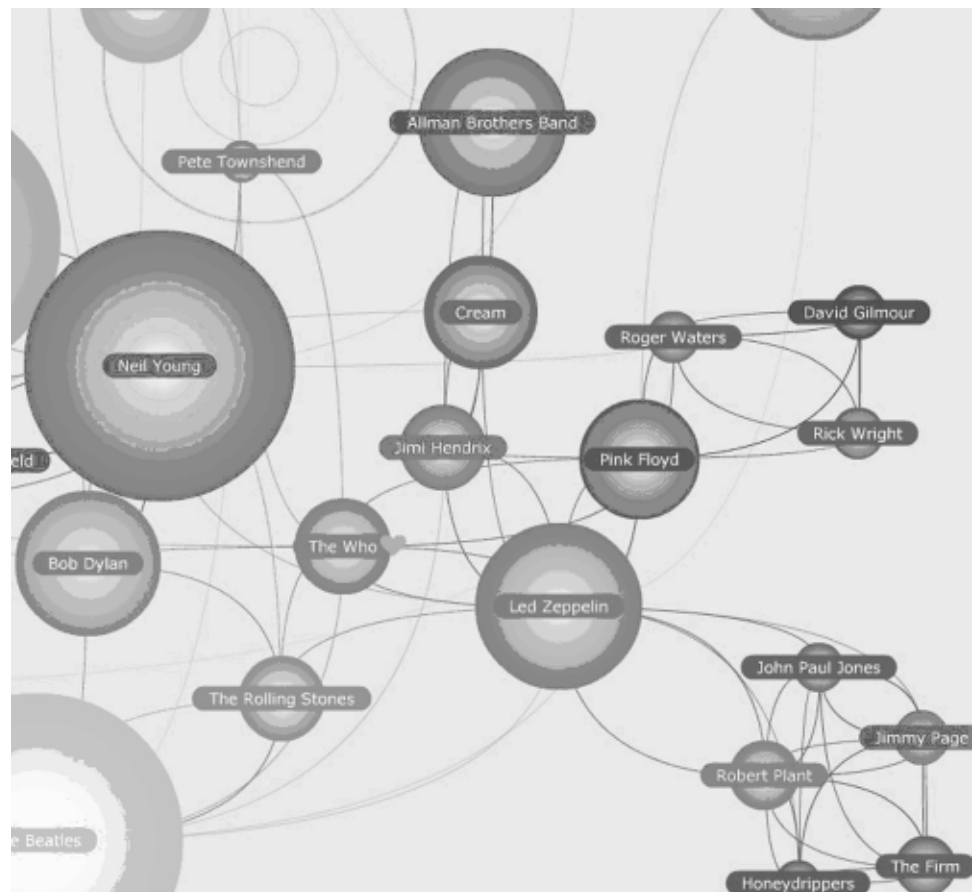
### **On-line Mapping and Acceptable Use Policy**

Production and use of maps is changing rapidly. Maps are being produced in far greater detail and are morphing from static objects to dashboard information systems that combine live event information. Real-time data is combined with digital maps on the fly to show everything from the locations of beer stores to online dating to earthquakes to real estate property values. The traditional ‘look’ of a map has evolved as well, from known geographical

locations to abstract relationships among like objects (Map 1: liveplasma.com).

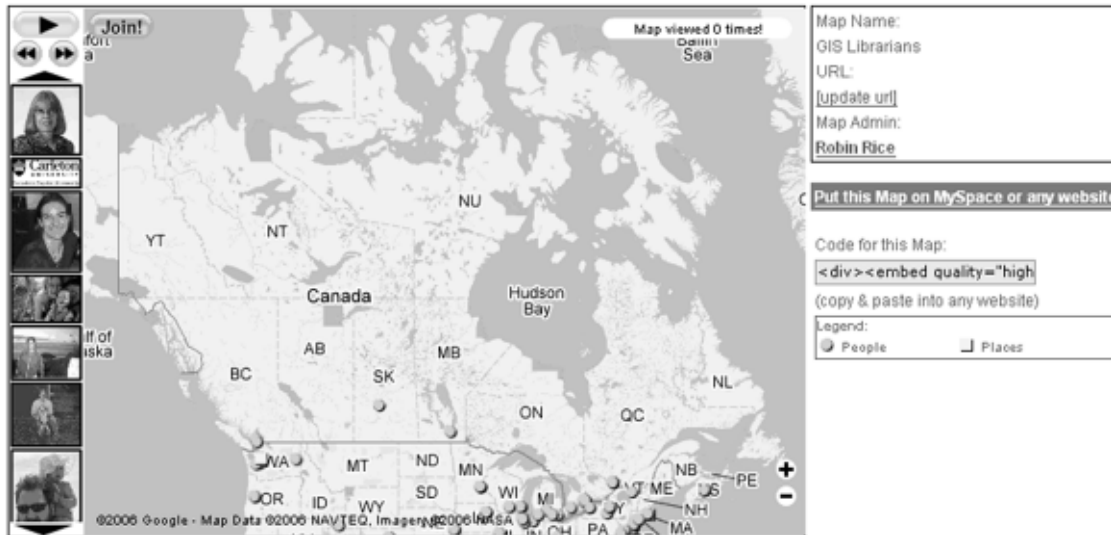
The Internet and cheap computers provide fertile soil for the rise of citizen journalism and multi-media production by anyone for anyone. Publishing and the media are being transformed along with many other content creation industries. This major trend has been dubbed “Generation C”, where the **C** stands for the avalanche of new **content** by Internet users. Anyone with a bit of creativity can create and publish content online, and millions do so everyday.<sup>2</sup>

In the same way that people can blog and share news stories, they are also creating online maps that



Map 1: Liveplasma <<http://www.liveplasma.com/>>.

GIS Librarians



Map 2: GIS Librarians <<http://www.frappr.com/gislibrarians/map>>.

can be a travelog, tour of their town or list of historical buildings. But average citizens can do more than manipulate and create new maps with geospatial data provided by companies like Yahoo! Maps, Google Maps, Google Earth and MSN Virtual Earth. With cheap GPS units, computers and the Internet, they can form teams of civilian surveyors that construct maps such as OpenStreetMap projects [www.openstreetmap.org](http://www.openstreetmap.org). OpenStreetMap offers geographic data that is free of any legal restrictions with their use. While this may provide opportunity to mislead, misinform and offend, licenses and user agreements with terms of use are implemented to quash these potential problems. Acceptable Use Policies in mashups need to be examined more closely in the future, however for the most part, map mashups have revolutionized on-line mapping. Though a few citizens have become amateur surveyors, many more are actually creating map “mashups” or uploading information such as photographs from GPS phones that can be added to collaborative online mapping sites, hence the rise of the amateur cartographer. Geocoding, although it is not clear that users know this is what they are actually doing, has been discovered by the masses and maps are fun!

### **Map Mashups – What’s a Map Mashup and Why Would I Want One?**

To get an idea of what a map mashup is take a look at site like Frappr! Anyone can create a map on any topic for free on Frappr! The map creator usually

invites visitors to add information to the map by creating pushpins or points on the map and adding some information. For example, Robin Rice created a GIS Librarians map shown above (Map 2). Map mashups combine at least one data source with a digital map to create a new map. Map mashups have exploded on the Internet because of the relative ease of overlaying all types of data on an online map with tools provided by Google Maps and Yahoo Maps, to name a few.

A mashup can be as simple as the location of three library branches in a small city or as extensive as a map of Canada and USA that shows all the Tim Horton’s and Starbuck locations (Map 3).

### **Where it All Started!**

Paul Rademacher, a software engineer, is credited with sparking the mashup explosion, when he combined real estate listings from craigslist with Google maps to make HousingMaps.com. Paul was frustrated with looking up real estate listing in the newspaper, then logging onto Google Maps to look up the property addresses.

Today, on the HousingMaps.com site, you can browse for rental suites or properties for sale by city, price range and other features. Properties that match your criteria are displayed as push pins on a Google map. Map 4 shows a search for a 2 bedroom rental property in San Francisco in the \$1250 - \$1750 price range. Clicking on a push pin will



Map 3: Find by Click coffee <<http://www.findbyclick.com/>>.

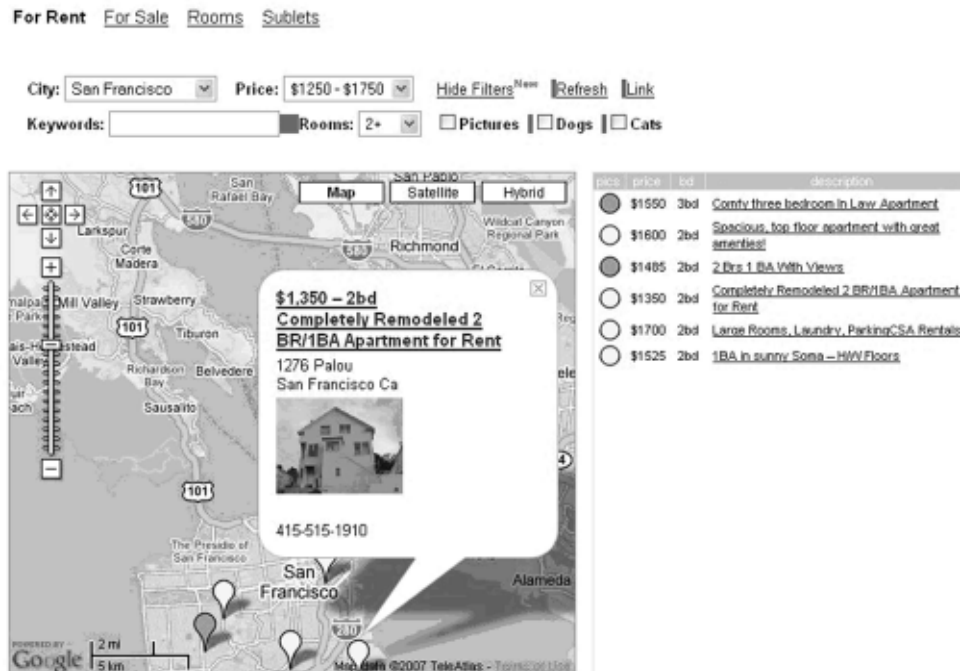
overlay a small callout window providing details about the rental unit. The bright yellow colored push pins indicate there are photos of the property.

**How to Build a Map Mashup**

Mashups start with an idea, almost anything a person can think of that will have some spatial relevance; the possibilities are endless. Most will first need to access at least two data sources that will be combined and applied through something like an API (Application Programming Interface), a source code that is provided to support the service being implemented. In many instances, the user must sign up for permission to use an API; most are free. There are dozens of APIs that are tagged as mapping according to programmableweb (www.programmableweb.com). The majority of APIs for mashups are mapping related, in fact, over 50% are Google Map APIs.

Virtual Earth and Yahoo! Maps make up another 7% of all APIs.<sup>3</sup> Map mashups on the whole make up over 25% of all mashups.<sup>4</sup>

It is important to identify a person’s skill level with regards to programming content for mashups. Mashups can be generated at many different levels, from on screen graphical user interfaces (GUIs) to straight-on programming. The easiest way to start



Map 4: Rentals in San Francisco.

building a mashup is to simply plot markers or 'push pins' on a map using known online map resources such as Google Maps, Google Earth or Yahoo! Maps. Some map mashups are GUI (Graphical User Interface) driven and very easy to use including 'Map Builder' using Google maps to interface with the data (<http://www.mapbuilder.net/>). Adding markers to these maps is as easy as typing in the province/state and country or a specific address, and clicking on the map at the chosen location. Simply 'Add' the information to upload the coordinates and a new mashup is created! Others are more involved. Many APIs require some programming. Cloning is a method whereby source codes can be downloaded and edited or updated for new content. For those who are ambitious, mashups can simply be programmed from scratch. Developer toolkits and API documentation is readily available online.

### **Open Source APIs**

Open source data sharing is ground-breaking, making free distribution of derived information possible through licensing. APIs for digital map services are developed as an open source, allowing many users to send geospatial information across cyberspace at no cost. Most on-line mapping sites offer open source APIs including MapQuest ([http://www.mapquest.com/features/main.adp?page=developer\\_tools\\_oapi](http://www.mapquest.com/features/main.adp?page=developer_tools_oapi)), Google

Maps (<http://www.google.com/apis/maps/>) and Yahoo! Maps (<http://developer.yahoo.com/maps>). The availability of open source philosophy has created a momentum that has allowed the sudden increase of Internet content; the evolution of "Generation C". Without open data and open code via APIs, the mapping mashup explosion would never have happened.

### **The Wonder of Real-time Mapping**

Real-time mapping allows you to view events as they are happening. Using this strategy in map mashups is becoming increasingly popular. One can imagine the possible uses of bringing real-time events to life on our computer screens. Information on hazardous weather tracking, transportation, and health alerts can quickly be obtained on line. Some examples of real-time map mashups include; traffic conditions such as My California Traffic ([www.mycaliforniatraffic.com](http://www.mycaliforniatraffic.com)), flight trackers like GMaps Flight Tracker (<http://gmapsflighttracker.com>) and for real-time locations of commuter trains in Dublin, Dartmaps (<http://www.mackers.com/projects/dartmaps/>).

### **The Buzz about Maps, GIS, GPS and Mashups**

On-line mapping and map mashups are quickly becoming an Internet trend. 'Google Trends' uses

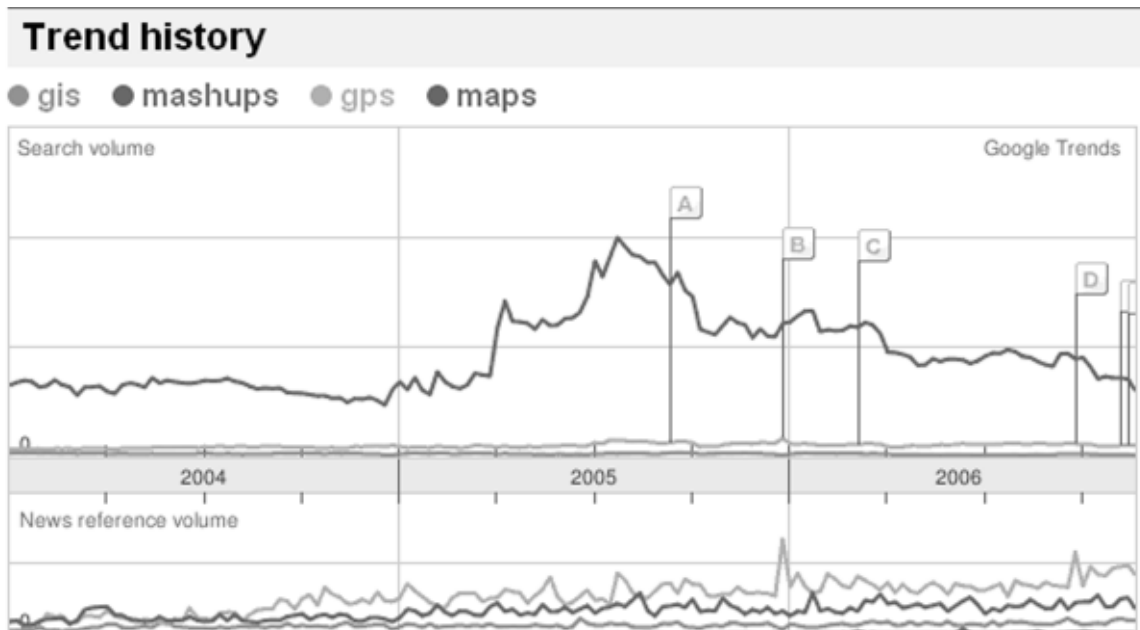


Figure 1: Google Trends – Region Canada, downloaded January 17, 2007 <<http://www.google.com/trends?q=GIS%2C++mashups%2C+GPS%2C+maps&ctab=0&geo=CA&date=all>>.

Internet searches to calculate how many searches are done on specific terms. The chart above clearly shows that maps have the highest search volume among these related terms. While mashups are still low on this list, they are a still a fairly recent phenomenon. There is opportunity for advertising and commercial uses with mashups as well, which is only now starting to be explored. "While mashups typically are labours of love created by passionate people who want to share information with others, businesses see the potential for highly targeted advertising and other lucrative applications." <sup>5</sup> Coupled with on-line mapping resources, open source APIs and possible lucrative business applications, this phenomenon has no where to go but up (Figure 1).

### Find Out More!

There are a number of resources both on and off line. To learn more about Map mashups and access to open source APIs, some on-line resources include: Programmableweb (<http://www.programmableweb.com/>) and Google Maps Mania blog (<http://googlemapsmania.blogspot.com/>). Another useful resource is the book from O'Reilly press: *Mapping Hacks: Tips & Tools for Electronic Cartography* by S. Erle, R. Gibons and J. Walsh.

### Notes

1. Define:Mashup – Wikipedia – The Free Encyclopedia <<http://en.wikipedia.org/wiki/Mashups>>
2. "Generation C". Trend Briefing from Trendwatching.com <[http://www.trendwatching.com/trends/GENERATION\\_C.htm](http://www.trendwatching.com/trends/GENERATION_C.htm)>
3. Programmableweb – API Dashboard <<http://www.programmableweb.com/apis>>
4. Programmableweb – Mashup Dashboard <<http://www.programmableweb.com/mashups>>
5. Mills, Elinor. Mapping a revolution with 'mashups'. CNet News, November 17, 2005. <<http://news.com.com/2009-1025-5944608-2.html>>

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for

## CARTO 2007

ACMLA Annual Conference  
And joint day with CAPDU  
**Wednesday, May 9 to Sunday, May 13**

hosted by  
McGill University, Montreal, Quebec

The tentative schedule is as follows:

### Wednesday, May 9

Pre-conference Workshops  
ACMLA Board of Directors Meeting  
Evening 5-7 pm—Icebreaker

### Thursday, May 10

Morning 1st Part—Opening Session  
(Guest Speaker)  
Morning 2nd Part—Paper sessions  
Afternoon—Sessions

### Friday, May 11

Morning—Paper sessions  
Afternoon—AGM  
Evening—Banquet

### Saturday, May 12

Field Trips

**Sunday, May 13** Joint day with CAPDU  
at Université du Montreal  
Morning —Sessions  
Afternoon—Sessions

The ACMLA conference will be followed by a DLI training day on Monday May 14; IASSIST pre-conference workshops on Tuesday May 15; IASSIST program runs Wednesday May 16 to Friday May 18

Local arrangements committee: Rosa Orlandini; Jean-François Palomino; Joséé Lambert; Stefano Biondo

Members are encouraged to apply to ACMLA for conference travel assistance. The travel policy can be viewed on the ACMLA web site:<http://www.ssc.uwo.ca/assoc/acml/travel.html>