Everybody Online, And Looking Good
My name is Michal Migurski, I’m the technical director at Stamen Design, a San Francisco data visualization studio.
Maps, Generally

Maps online are swiftly becoming the focal point for new thinking about data.

Broadly speaking, online geography and cartography are where the action is right now.

A few projects we’ve seen or done ourselves.
Tom Carden and Steve Coast:
An early rendering from OpenStreetMap, 2005 or 2006 showing GPS trails of couriers through London, and proving that dense street data could be extracted from crowdsourced GPS.

Made before Tom joined Stamen in 2006.
Andy Allan: Open Cycle Map
This is an award-winning custom render of OpenStreetMaps that illustrates why making your own maps from scratch is important: there are a lot of different kinds of geographic context out there, beyond just freeways and pizza places.
GraphServer: Routing

Brandon Martin-Anderson:
Shortest-path tree of San Francisco transit (red) and walking (black)
This is just transit, with an indication of walk + ride time, showing what’s possible when governments, agencies, and authorities open up data.
“Data *is* the public good.”
Shawn Allen, Stamen:
Shawn overlaid bike routes on contoured hill in SF, using data directly published by city government.
Heat Maps, Underneath

Oakland Crimespotting heat maps
Meanwhile, this is a heat map of crime in West Oakland with a thin layer of street context from OpenStreetMap showing a better way to layer continuous data and local context.
Black Box/Reach Through

“...scientific and technical work is made invisible by its own success. When a machine runs efficiently, when a matter of fact is settled, one need focus only on its inputs and outputs and not on its internal complexity. Thus, paradoxically, the more science and technology succeed, the more opaque and obscure they become.”

—Bruno Latour, Pandora’s Hope

What’s happening right now in online mapping is that the black box is being cracked open.
Two Things

Cartography: how maps look,
Delivery: how they get to you.
Cartography
How To Ditch Google Maps
This year, Stamen designed a set of base map styles for OpenStreetMap commercial offshoot Cloudmade.
In four years of work, the volume of data in OpenStreetMap has progressed enormously.
Some primitive early test rendering to test line weights, etc., using Mapnik + Cascadenik.

OSM has Baghdad.
OSM has London.
One of the final products: the “Fresh” map style.
Appearances Matter
Another final product: the “Midnight Commander” map style, a.k.a what would Jason Bourne use to navigate a new city?
Our work with San Francisco–based Real Estate information aggregator Trulia demonstrates the potential vastness of data online.

Trulia collects data about residential properties for the entire country, from government and private sources. They wanted to demonstrate the massive scale of this information collection by creating something that could be relevant and interesting to people who weren’t necessarily in the market for a home.
Hindsight is initially presented in the form of a blog, with posts about a variety of communities nationwide.
The interface shows colored dots for each home. You can immediately see construction patterns resulting from tract home development, where whole swaths of similar homes are laid down at once.

We used the standard slippy map interface, so it’s possible to move around the country and see construction for different zoom levels. Even when you look up your childhood home in an out-of-the-way town, you can see historical information, link to it, and share it.

This is the SF Bay Area, you can see how people started off living in SF and Oakland in the North in the late 19th century, and then slowly moved down the Bay filling in former farmland with homes. There is a massive bump immediately after World War II.
Exploration

It’s important to note that these don’t spring forth fully-formed, there’s a lot of exploratory work and dead-ends that contribute to the final piece.

This was an early sketch we did in Processing, showing data animated by house price, from cheapest to most expensive. It beautifully demonstrated animated sweeps, but home prices as a metric seemed insufficiently “real” for a final piece.
This is the same visualization style, also with just properties in San Francisco, now animated by construction date. This was a more satisfying visualization, the information presented is more directly relevant to people, because it’s possible to use it to tell a story about the city.
We added satellite imagery to the visualizations before, and quickly ran into a problem of accidental visual resonance. Prior to the last five or so years, the place most people encounter data visualization is through science, through the military, and through disaster response.
Accidental Visual Resonance (avoid!)

Hindsight looked too much like this NASA image of the fires in the Oakland Hills in 1991. You can pick out each home, and neighbourhood, clearly. “Accidental Visual Resonance.” In response, we removed red, orange, and yellow colors to keep it from looking like a fire.
This shows Plano, Texas - an example of suburban housing development.

At the bottom you can see a timeline of development - it's quite short, because these homes were all built around the same time, quite rapidly.
Delivery
Putting Maps Online
SFMOMA ArtScope

Immersive modern art browsing
http://sfmoma.org/pages/artscope

SFMOMA ArtScope.

This is a deep dive into the Museum Of Modern Art’s collection, most of which is not on display in the museum.

It doesn’t look like a map, but we’ve been exploring the use of development and publishing ideas from online maps and satellite images for other purposes.
This is an image from Microsoft’s Terraserver, from 2004. Prior to the release of Google Maps in 2005, this and MapQuest were the only good ways to get geographical information online. Interactions were slow, form-based, and limited. Imagery and map content was limited and poorly-designed.
Google’s maps were a massive step forward, because they allowed you to move the map in the page, zooming freely from one place to another.
The infinite, continuous road maps and satellite imagery are available over a regular broadband connection because Google serves them to you as small square images.
This idea can be applied to other kinds of deep navigation.
The actual ArtScope UI
You can move the magnifying glass around to see what’s in the Museum of Modern Art’s extensive collection, or use tags and text searches to the right if you know what artist you’re looking for, or are interested in browsing artwork by medium or subject.
Really though, it’s a kind of Google Maps for Modern Art.

All the familiar interaction metaphors – panning, zooming, small overview map – are there. There are certain interaction ideas popular on the web that are ripe for application to new contexts.
Part of what we do is to extract patterns from multiple projects, so we’ve been working on Modest Maps, the BSD-licensed Flash mapping library that we’ve used in a majority of projects since 2007 or so.

Modest Maps was pulled out of research project Oakland Crimespotting...
Oakland Crimespotting is another recent project that demonstrates depth of interpretation through a variety of views on information.
This is the state of the art in mapping crime information for cities in the US. Maps are designed by programmers and not fully resident on the web.

Generally speaking, it’s hard to link to things and hard to explore information laterally.
Crimespotting is heavily influenced by ideas from Tom Coates’s Native to a Web of Data.

“A web of data sources, services for exploring and manipulating data, and ways users can connect them together”
Another influential piece of writing in this space is from Dopplr CTO Matt Biddulph.

Matt describes a series of best practices around open data formats and permanent, guessable URL’s.
Crimespotting shows you a map *first* instead of faffing about with a wizard interface: “where are you, what crimes do you want to see,” etc.
Exploration of the data is direct: here we’ve moused over one prostitution report and shown how the remaining ones highlight.
Here we’ve hidden all the remaining reports.

These reports almost all happened on one day – prostitution in particular following this “sting” pattern.
Murder

Wednesday, Mar 5, 2008 5:48am

MURDER

Case Number 08-016924-003, Police Beat 06X.

3200 block of San Pablo Ave, Emeryville, CA 94608, USA

Scroll down to see related and nearby reports, or to leave a comment.

View an interactive map of this report.

Related Reports

These reports are directly related to the one above, and may be part of the same incident.

Aside from the map UI, Crimespotting helps push better geo data online in other ways.

First, there is a page for every individual crime report in the system.

This is the most basic building block of the site. Each one has a sensible URL that includes a map, connected reports, and nearby neighborhood information.
Second, there are listing pages that show collections of reports: by day, by type of crime, by police beat.
We're intentionally trying to stretch the definition of "API" here: the classic, Flickr-driven concept of an XML web service is definitely one Web 2.0 compliant way of looking at things, but Excel files and permanent URLs right there on the website is a broader concept that invites members of the non-geek public to join in. These have all been API-like "handles" that visitors can connect with.
Third, everything is presented on a map.
The map shows global context.
As well as the relative isolation of just one city of data.
Two Directions

Delivery is becoming standardized through basic techniques such as tiles, Cartography is seeing a rush of exploding diversity. This is normal.
Thank You

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