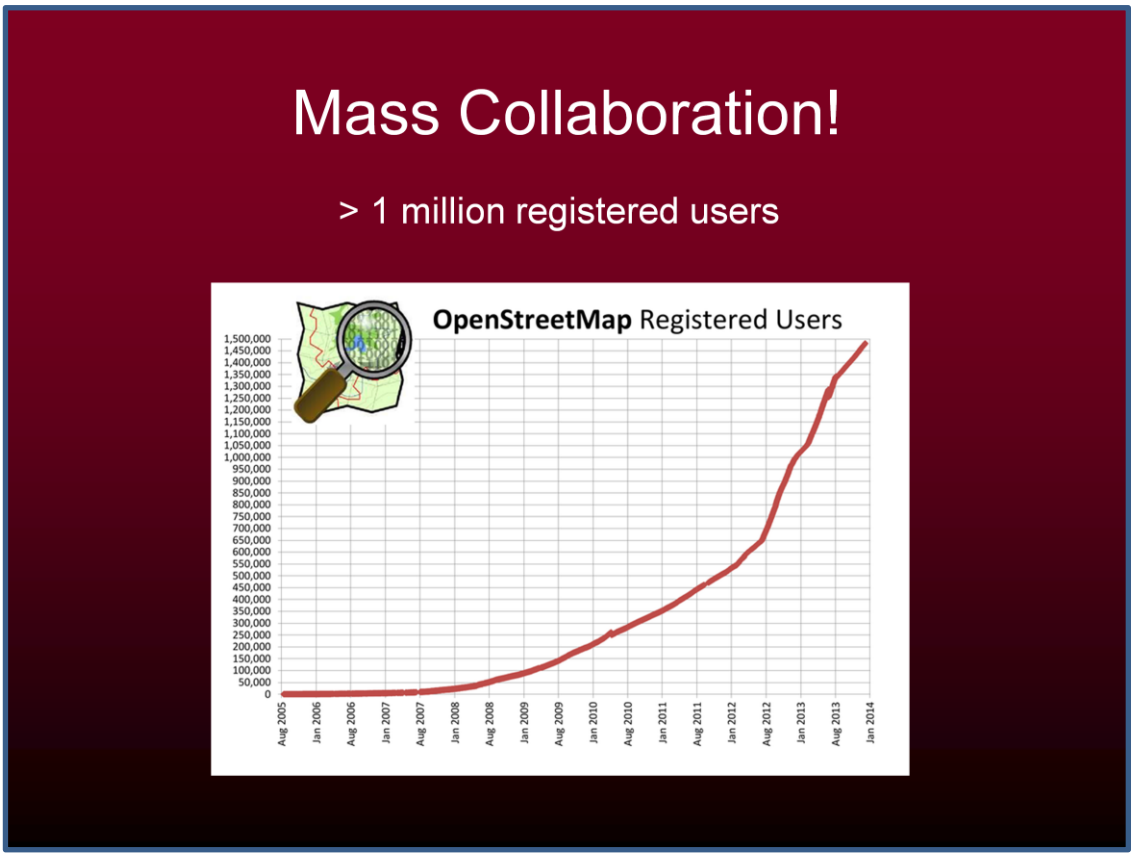
I'd like to present the Humanitarian OpenStreetMap Team or HOT for short. HOT is a not for profit 501c registered in the U.S., which is all about maps. We create and supply maps for crisis response and also generally mapping the developing world.

The 'O' in HOT is OpenStreetMap, which takes a bit of explaining

OpenStreetMap is map of the world, which you can view at OpenStreetMap.org and zoom and pan around just as you might with google maps. But this is different in many ways.

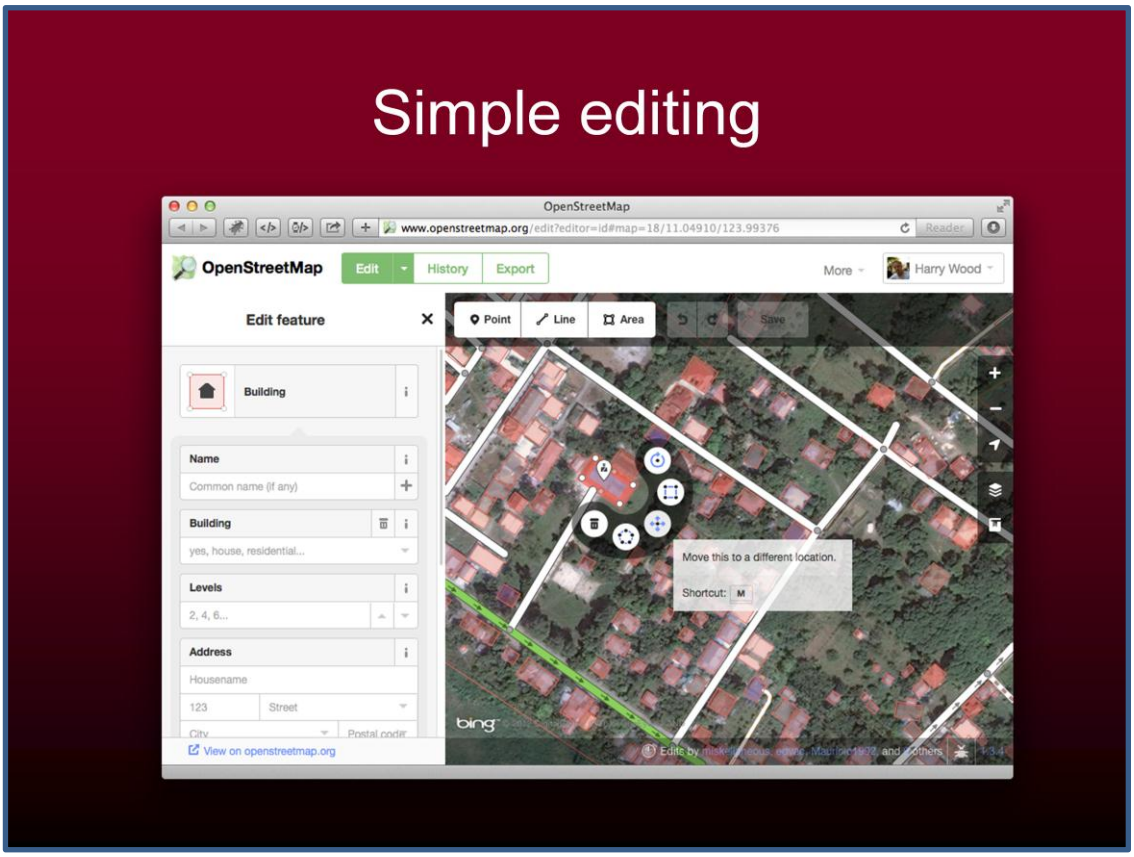
OpenStreetMap is an editable map. Anyone edit the map to add new details and contribute to it. It's “crowd-sourcing” or as I prefer to call it...



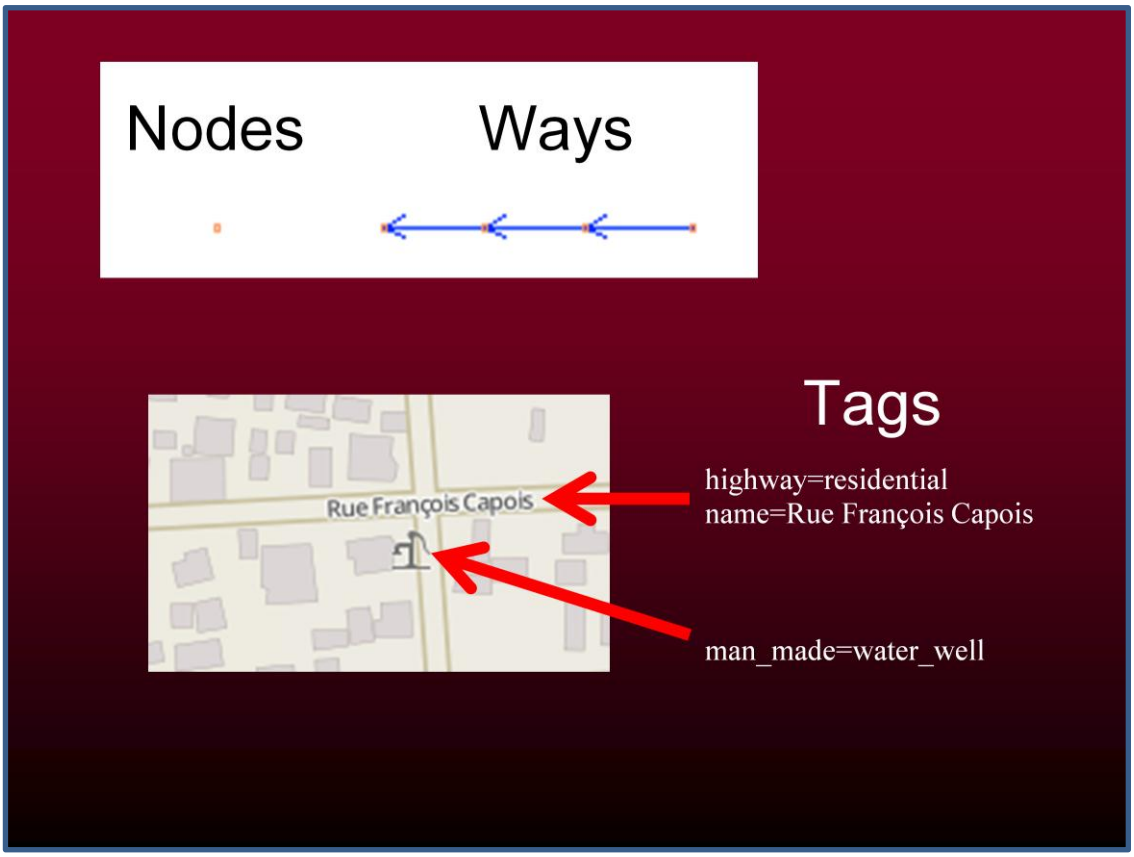
“Mass collaboration”. We have more than a million signed up users, who can edit the map, and thousands of people actively editing all around the world.

These people are coming together, and collaborating to create this map.

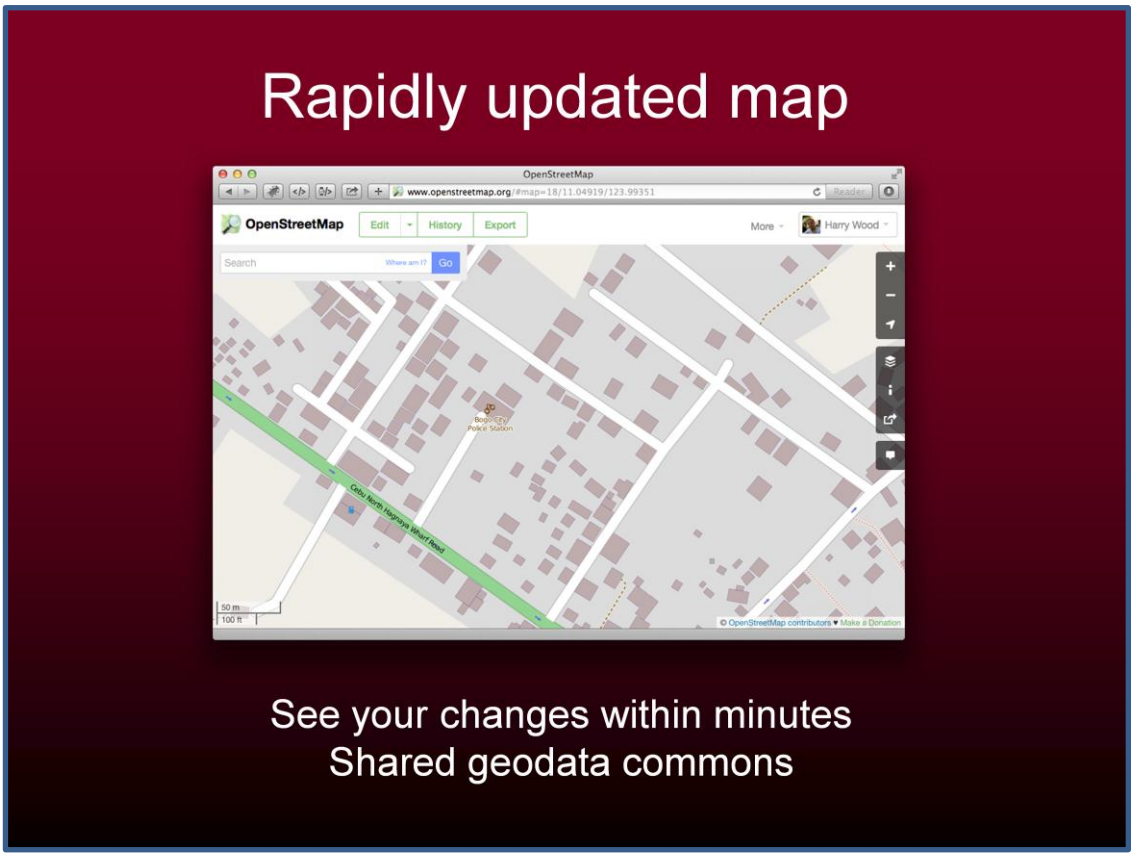
http://wiki.openstreetmap.org/wiki/Stats



One way we manage to get lots of people involved is by making the editing process very simple. The editing process is a simple form of GIS (Geographic Information System)

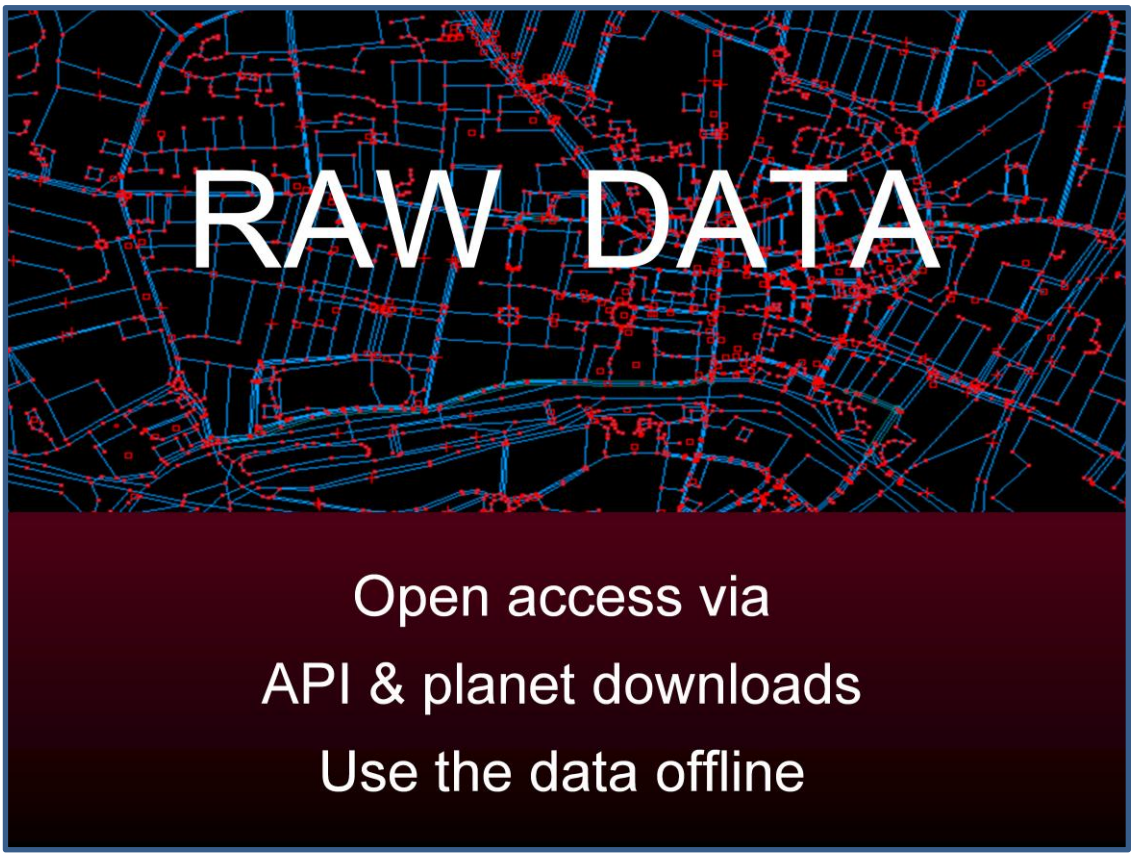


And within the data of OpenStreetMap, the underlying data is kept very simple. The map is composed of nodes and ways. And these elements have tags attached to them, to describe what real world feature we are representing.



And when make changes to the map, the view of the map is updated with quite a short time cycle. This creates a nice reward feedback loop, but it also means that in a crisis OpenStreetMap forms a shared commons for geo-data.

http://www.openstreetmap.org/#map=18/11.04919/123.99351



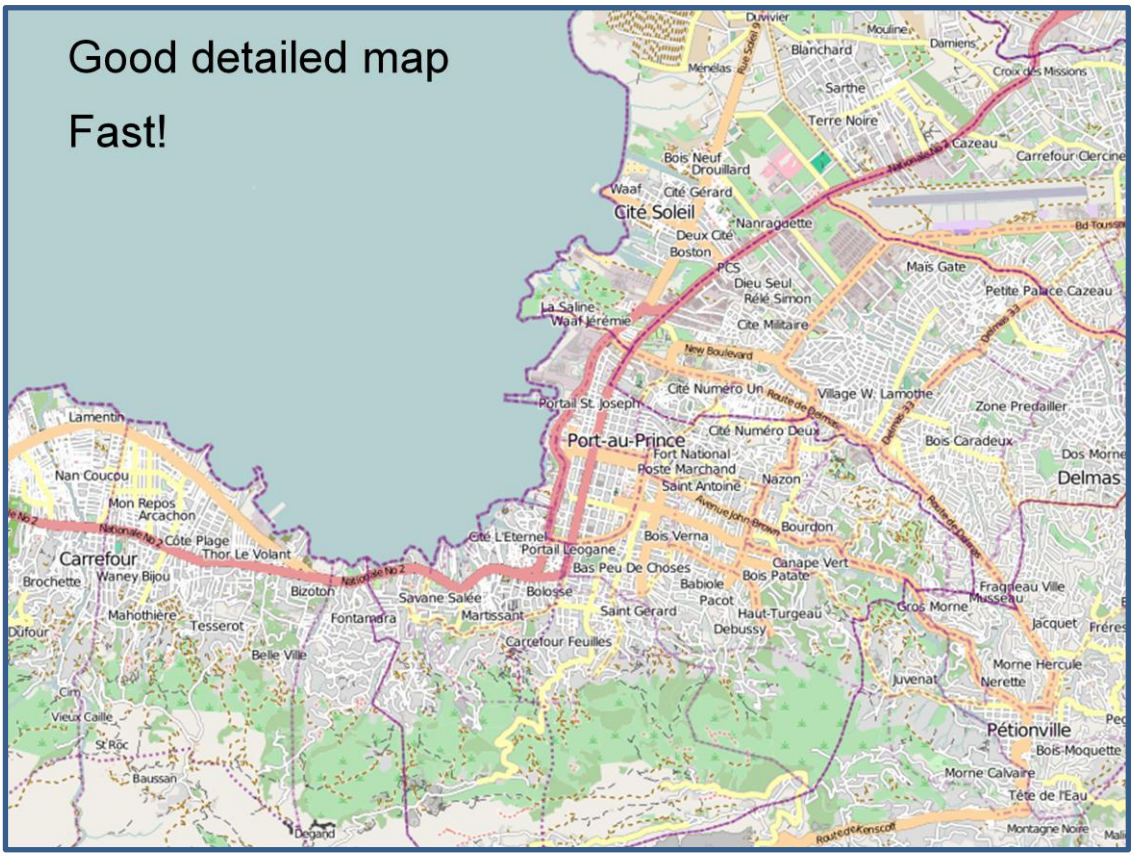
OpenStreetMap provides access to the raw data making up the map, and all this is available to download and use with an open license.

This means for example people can work with the data offline in an unencumbered way. Offline is important for humanitarian work where there's often no internet connection.

So OpenStreetMap has these various aspects to it. It's designed with the goal of creating a free open licensed map of the world (which is a good cause!). It wasn't actually designed with humanitarian uses in mind, but it turns out that these things all make for a powerful platform for disaster response mapping but...

Photo: Agencia Brasil
http://commons.wikimedia.org/wiki/File:Port-au-Prince_20_Jan_2010.jpg

...this is something which revealed itself, to the surprise of many people, back in 2010 when the earthquake hit Haiti



The OpenStreetMap community came together. Everyone had been watching the news, and spontaneously they created a good detailed streetmap, and they made it quickly! The basic streetmap was in place in about 48 hours.

OpenStreetMap suddenly had the best map available for the cities of Port Au Prince and Carrefour. The *only* map showing all the city streets.

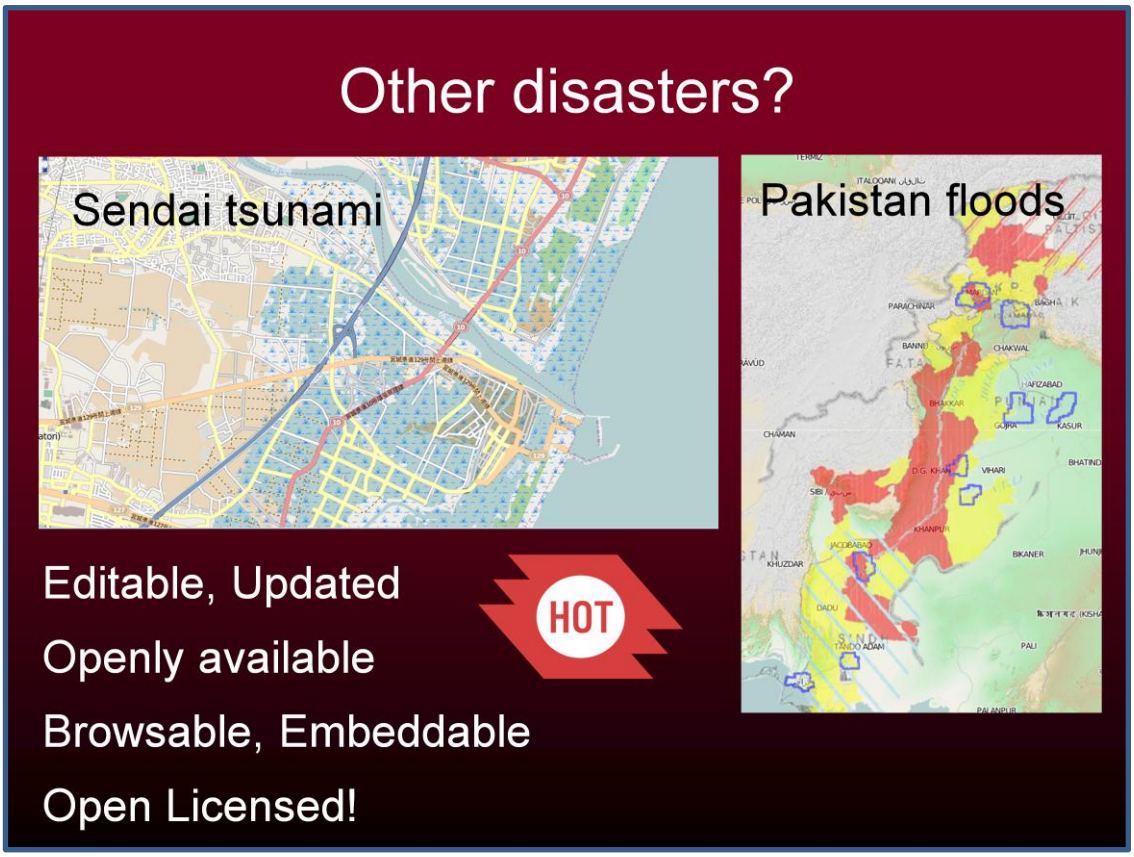
And people *used* the map.

People used it as a base map, doing the web map "mash-up" thing. This is "ushahidi" layering data on top.

But more importantly, people were using it *in* Haiti. OpenStreetMap printouts were going up on the walls in the aid agency control rooms, and handed out to people driving aid delivery trucks.

But this is my favourite example. Search and rescue teams used garmin GPS units with OpenStreetMap loaded onto them. As well as being an example from the very sharp end of disaster response, saving lives very directly, it's also a great example of OpenStreetMap at it's best: There are open source tools as part of the OpenStreetMap ecosystem, which let you convert raw geodata

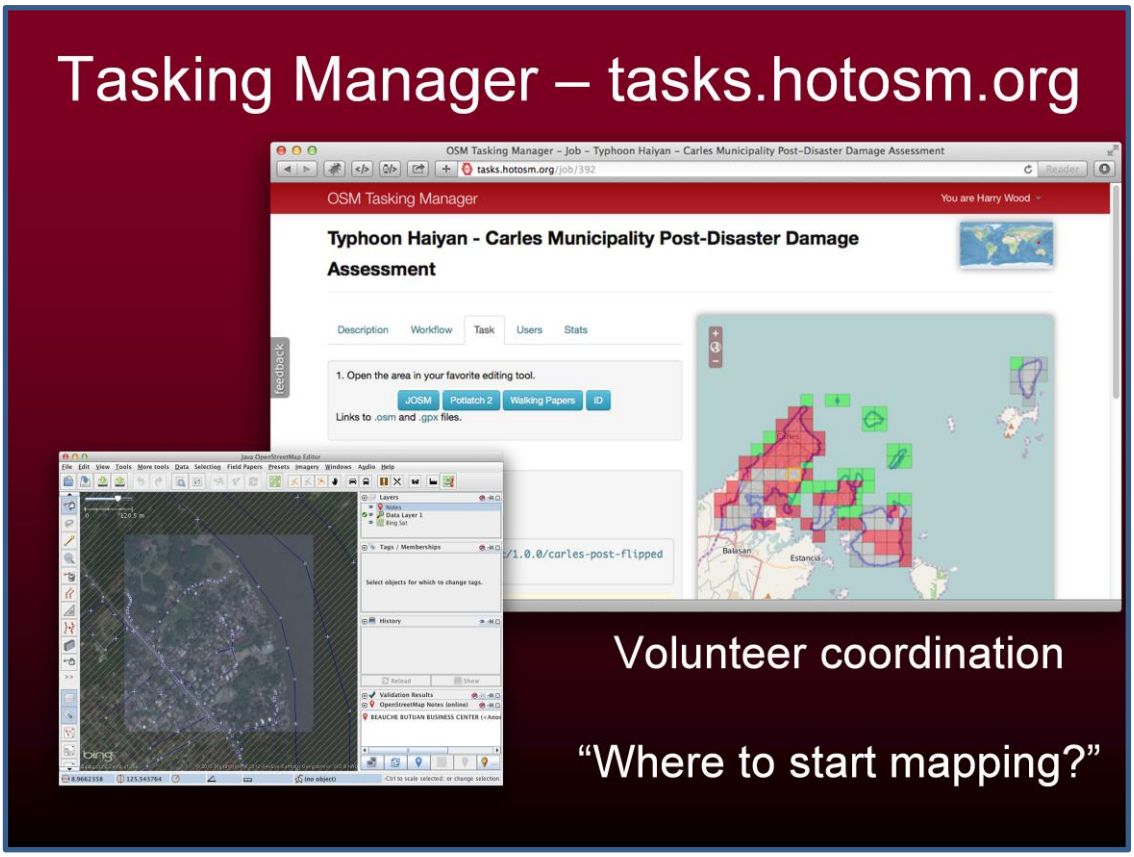
into the garmin format. The maps are then available entirely offline.



Since Haiti we've formed the Humanitarian OpenStreetMap Team and responded various other disasters. It turns out every disaster is different.

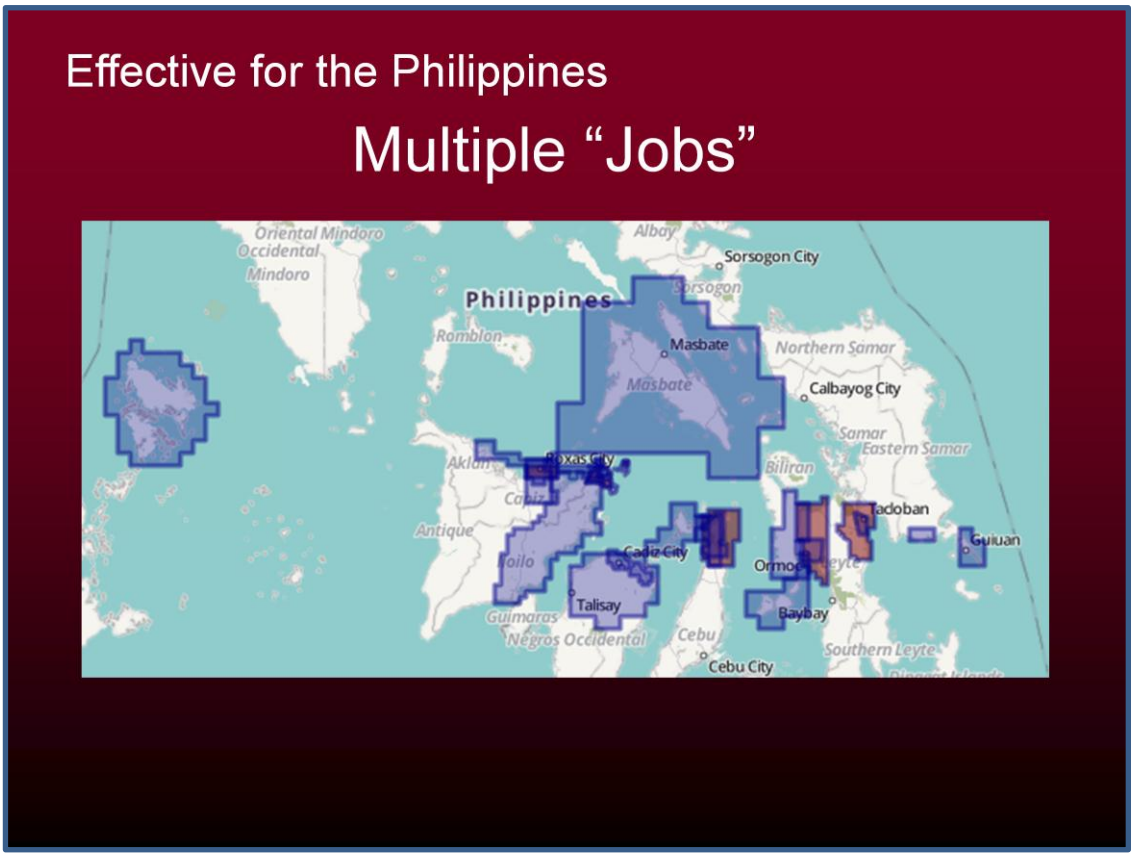
In Pakistan the entire length of the country was hit by floods. Responding to this was more difficult because we didn't have good imagery over such a large area

In Sendai, Japan they have good maps available already, but we still had the only freely available base-map offering an up-to-date view after the disaster.



HOT has developed some tools and processes including the "Tasking Manager" at http://tasks.hotosm.org .

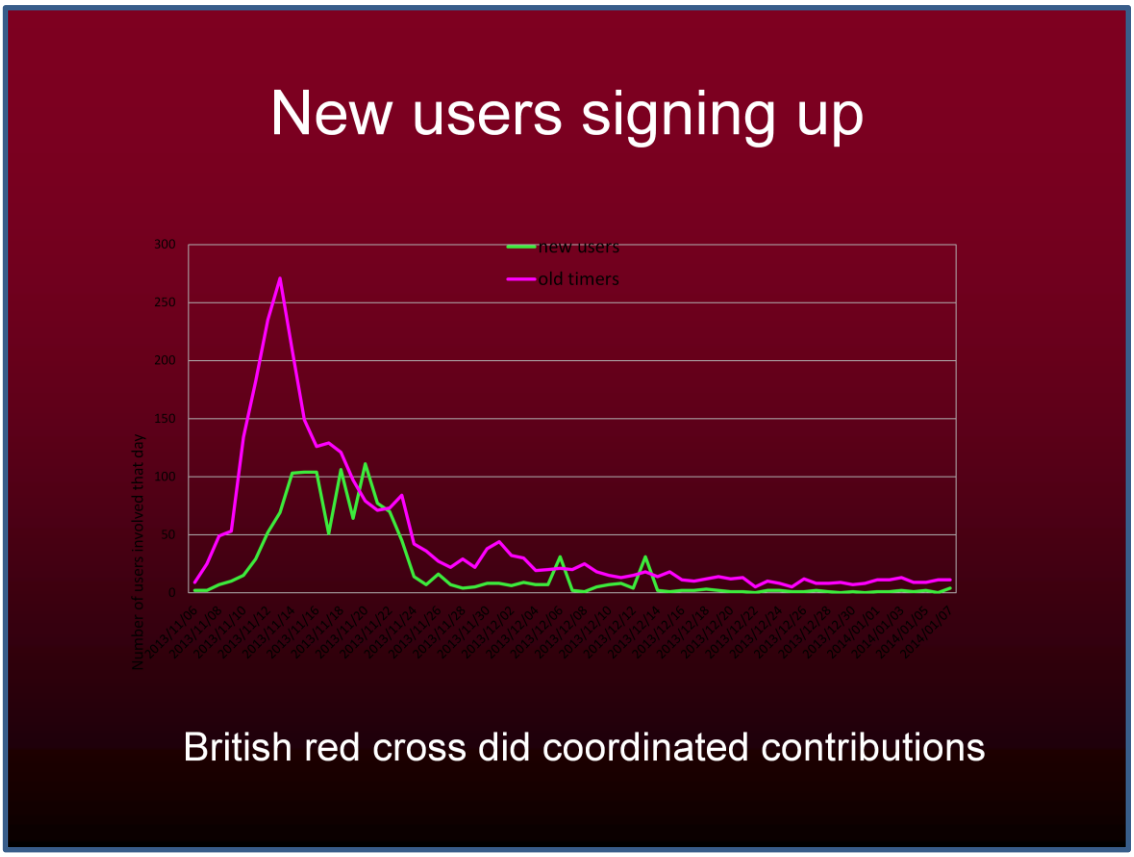
Which helps new users figure out where to start mapping, and helps the community coordinate.



This was used extensively in the Philippine when responding typhoon Haiyan. We set up different jobs within the task manager for different areas where we needed to improve the map, or where imagery was available

http://umap.openstreetmap.fr/en/map/hot-yolanda-haiyan-typhoon-activation_3628#8/11.558/124.887

Here we see the spike of activity which occurs after a disaster as spare-time volunteer mappers respond. It corresponds to the level of interest on the internet in general, as we see with google trends, but I like to think we have a slightly longer attention span than the rest of the internet!



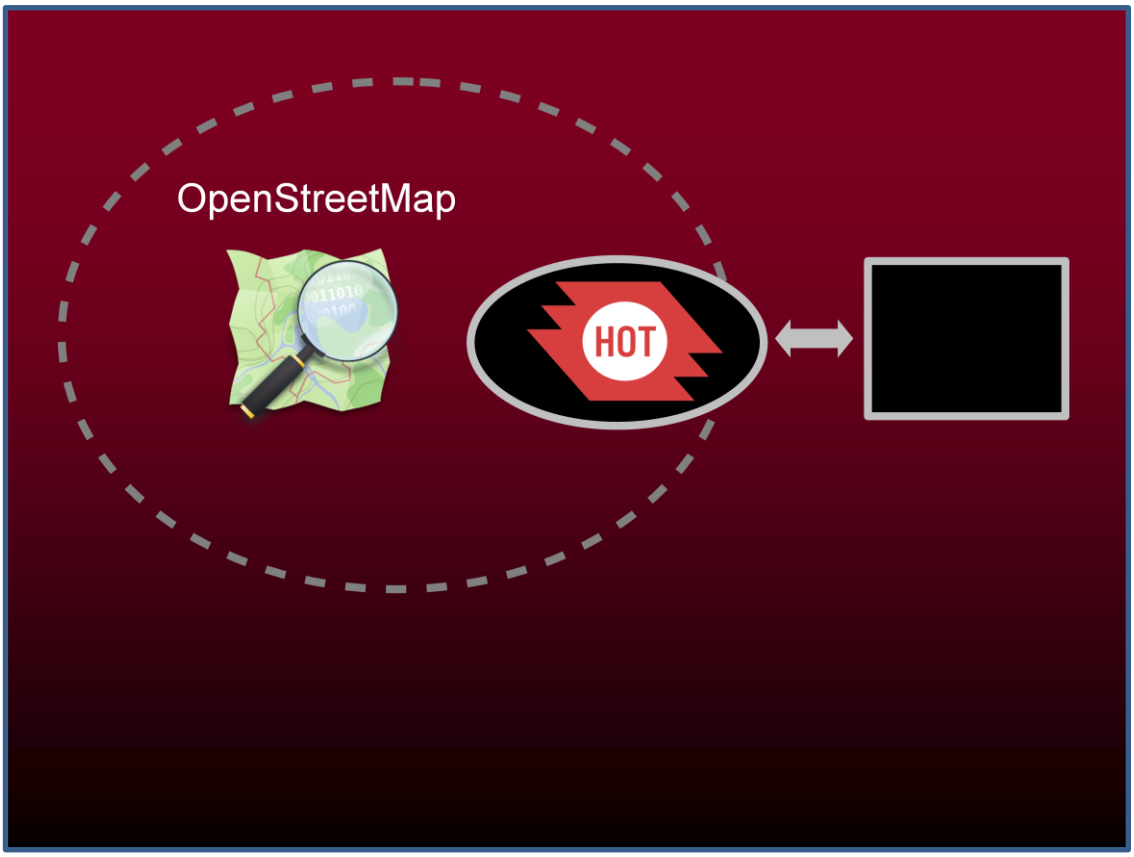
This shows new users in green. These are people who appear to have registered to edit OpenStreetMap during the crisis response (probably purely in order to take part in the crisis response).

This maybe shows that our “old-timers”, the more experienced OpenStreetMappers, were a bit quicker off the mark, responding soon after the disaster, while the new users came along a bit later. This shows that it's important to try to get people to acquire the skills before a disaster happens. The more people know how to edi ahead of time, the faster and more effective we are.

And here's the result of all that editing activity. Customized maps for humanitarian response, and aid agencies such as the Red Cross here making use of it

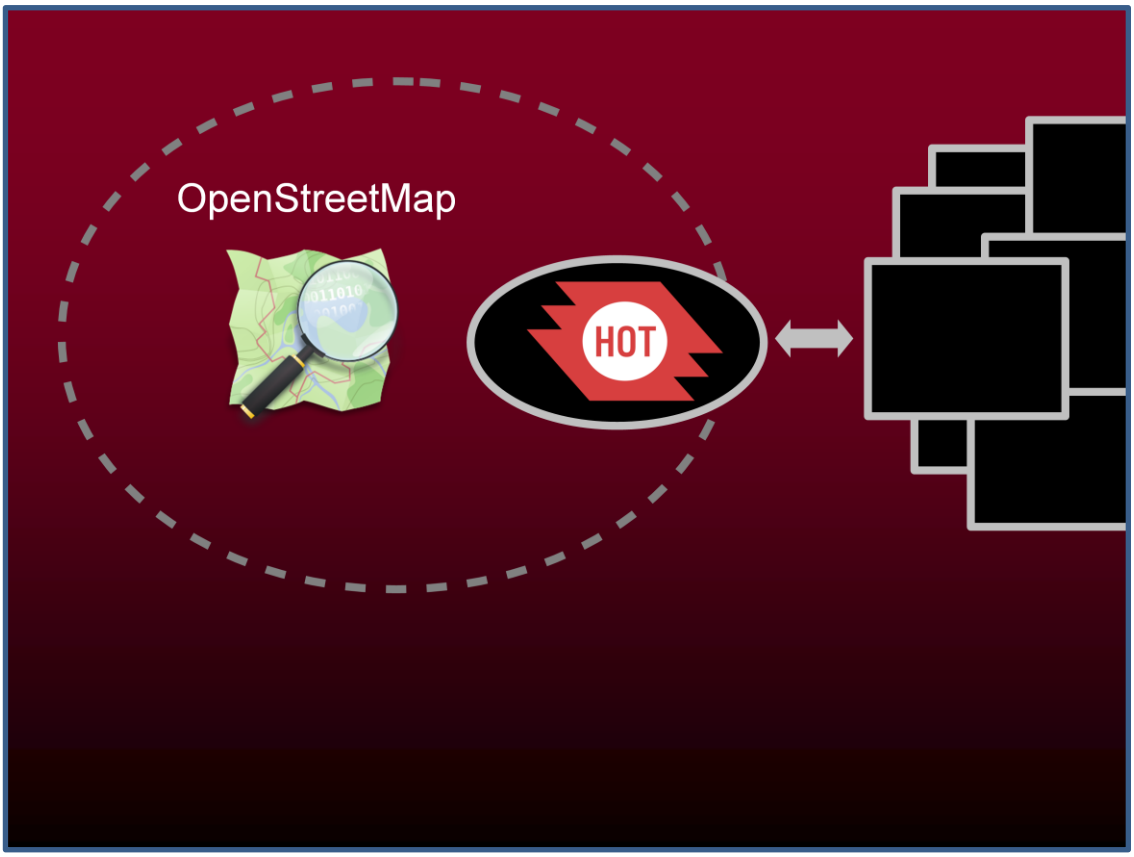
We're seeing increased collaboration with aid agencies and larger NGOs. Recently MSF worked with us to map Lubumbashi in the Congo. This follwed an interesting workflow in which local people got involved in data collection with a paper-based mapping approach using fieldpapers.org and then volunteers here in London helped digitize the results.

These collaborations with MSF and Red Cross are on the increase, and very exciting.



So I was asked to say something about “business models” of NGOs. I'm afraid OpenStreetMap is kind of a “anti-business model”. It's a project doing the open licensed mapping thing, which is born out a frustration with mapping authorities. There's a kind of anarchistic streak to the whole enterprise. It's also a difficult thing to get a handle on because volunteers come and go as they please, and chip in in their spare time.

One important role for HOT then, is to present a more organised face of OpenStreetMap to other humanitarian organisations.



HOT has full time employees, a board, directors, so perhaps a more normal thing to interact with than the rabble of OpenStreetMap.

Interestingly though when you take humanitarian sector as a whole, it's quite a confusing and chaotic thing to interact with.

HOT is in the middle there, and it's and interesting place to be!