GIM INTERNATIONAL INTERVIEWS STEVE COAST

Mapping the World

Steve Coast founded OpenStreetMap in 2004. It's a free, editable map of the world which has been made by people across the globe and allows users to view, edit and use geographical data in a collaborative way from anywhere on the planet. GIM International spoke to him about the project and what lies ahead.

What motivated you to start an 'open' street map?

Back in 2004, Wikipedia had become an extremely successful project and I thought it would be a good idea to apply the same principles to the creation of maps of local areas around the globe. By then, GPS had become readily available through cheap consumer devices, and anyone would be able to walk around gathering information using such a device and enter it into the OpenStreetMap software. I wanted a map that could be used by, and made available to, everyone. As a result, the data and software is owned by the contributors.

When you started OpenStreetMap, what were your objectives?

In the beginning, it was very personal for me: I wanted to be able to make a map for myself. I could download pictures of maps, but I did not have the ability to do anything logical with them because there was no data input. That meant that the only thing I could do with a map was copy it. In many places, that's illegal if you go beyond your fair use rights. You can't correct a street name, or add the pub across the road, or use the data in a computer program without paying a lot of money. Advances in technology, such as cheap GPS units, mean that you can now create your own maps, in collaboration with others, and have none of these restrictions. The ability to do so allows you to regain a little bit of the community you live in - if you can't map it, you can't describe it. Because I had a GPS device and a computer, I realised that if I wandered around and collected data myself, I would be able to access information. Then I saw that if I was going to do that, I may as well let anyone else on the web do it too. Today, anyone who has a GPS unit can use it to collect data and use our online tools to add the data to our collection.

How accurate is OpenStreetMap?

Because of the Wiki-style process involved in creating the maps, there is no guarantee of accuracy. However, few proprietary maps carry a guarantee of accuracy either. What happens with OpenStreetMap is that all users have a stake in the accuracy of the data. If one person puts in inaccurate data, whether maliciously or accidentally, other users can check it, fix it or get rid of it. The vast majority of participants have good intentions. A full editing history is stored for each user. Since 21st April 2009, users can attach Wikipedia-like edit summaries to their edits, and there is a 'History' tab on the main page that shows recent edits to the selected area.

How has your role changed over time?

It's changed dramatically. In 2004, I did absolutely everything - I used to run all the servers, all the mailing lists and all the conferences. But as time went on, I started to hand over responsibilities to other people. We now have 500,000 individuals worldwide involved in the project, many of whom are far more skilled at their particular tasks than I ever was. Today, as chairman of the OpenStreetMap Foundation - which exists to protect, promote, and support the project, but does not own the data - my role is to guide the strategic direction of the project.

What are some of the biggest challenges you've faced?

It has always required a huge amount of effort to continually explain to people what the project is all about and how it works. In the beginning, there was much scepticism and lack of understanding. It has been an ongoing process to secure buy-in from all the relevant parties. Subsequently, we've also had to confront and overcome little barriers to progress. For instance, once people were convinced of its efficacy in a certain area, they would then question the software's ability to map golf courses, or they would question the ability of

OpenStreetMap to conduct searches. We've had to prove over and over again that there is nothing inherently wrong with using an open mapping system as opposed to a proprietary one. It's what the founders of Wikipedia had to face too - today, everyone knows that Wikipedia works, but it's certainly had to prove itself over time.

Is OpenStreetMap a threat for companies like Bing Maps and Google Maps? Can these organisations use the developments in OpenStreetMap to enhance their own applications?

The fact is that nobody likes change. Users especially are used to doing things in a certain way. The great thing with OpenStreetMap is that the response from these organisations has been largely positive. My employer, Microsoft, has been extremely supportive and has sponsored OpenStreetMap conferences. Users are doing things like embedding OpenStreetMap tiles as a layer within a Google Map - using the Google Maps JavaScript library for map display, but displaying OpenStreetMap map tiles. Mapping companies will no doubt come to rely on OpenStreetMap data for certain uses, such as cycle routes and pedestrian routing, for example. But it ultimately depends on what they want to use the data for - it's not an all-or-nothing scenario.

Could large GIS manufacturers benefit from developments in OpenStreetMap?

Quite simply, they can use OpenStreetMap to reduce their cost to market. Once they had to not only produce the device, but they also had to procure the data. Now, that data is free.

Are geospatial data contributors using professional mobile mapping systems?

They have different requirements. They also don't have the number of people we have. Traditional map suppliers have employees; we have thousands of contributors. I'd say that broadly our systems are similar, yet it's a bit like comparing Mac and PC - they do the same thing, but differently.

Can traditional mapping companies engage with OpenStreetMap?

Yes they can. AND (Automotive Navigation Data), a major provider of digital mapping data used for navigation and location-based services, donated data to OpenStreetMap for The Netherlands. We are also bringing in TIGER data for the US and GeoBase data from the Canadian government. We are always on the lookout for other data sources, but all our data must come from the public domain or open-licensed sources which are compatible with our OpenStreetMap licence. Even in areas where free data exists, there is generally a lot of room for improvement via our Wiki-like community map-editing process. Where there are no such data sources, which is in most areas around the world, we have to start from scratch and survey the streets ourselves. Thankfully, we have a lot of very keen contributors.

Should geospatial academic institutes promote and support open geospatial initiatives such as OpenStreetMap and, if so, what benefits could this have for students and academic institutes?

Students and universities traditionally do not have lots of money. OpenStreetMap offers them the benefit of vastly reduced costs as well as up-to-date data.

With recent disasters - such as in Haiti - OpenStreetMap was used for mapping. Are different geospatial parties also joining forces in these emergency situations or are they operating individually?

There are lots of places all around the world where OpenStreetMap is being used. Some projects are bigger than others, but it's the ease of use that is particularly attractive. People can get going immediately, since there are very few barriers to entry and getting started is simple.

What lies ahead for OpenStreetMap?

We aim to map the rest of the world. We also want to apply the level of detail that already exists for countries like Germany and the UK to other countries. Naturally, we are also continually working on expanding our community of contributors by holding talks, doing email outreaches, and organising conferences around the world.