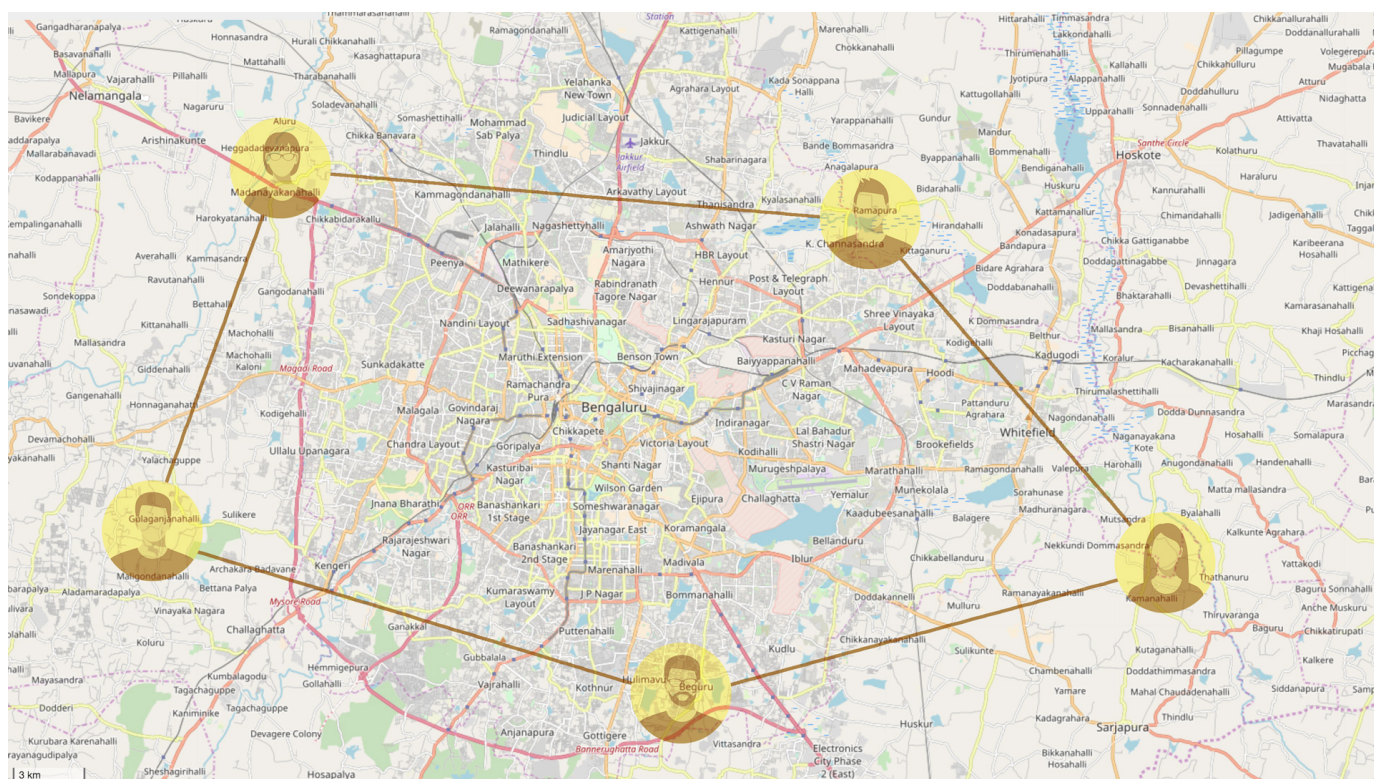


Future (/Future)

An open source resistance takes shape as tech giants race to map the world

Shadma Shaikh (<https://factordaily.com/author/shadma/>) | September 24, 2018 | 10 min



Chetan Gowda, 27, was speaking to a room full of students in IIIT Hyderabad for a workshop on OpenStreetMap for beginners organised by Swecha, a non-profit organisation to support free software movement last month.

There were close to 40 students in the room. Beginners often ask him: Why use open source maps when there are Google maps?

For Gowda, it was the fact that Google Maps is a global, commercial product and did not capture local detail. Like the old banyan tree that was a major landmark in his hometown Hassan or public benches just outside the town where pedestrians could stop to catch a

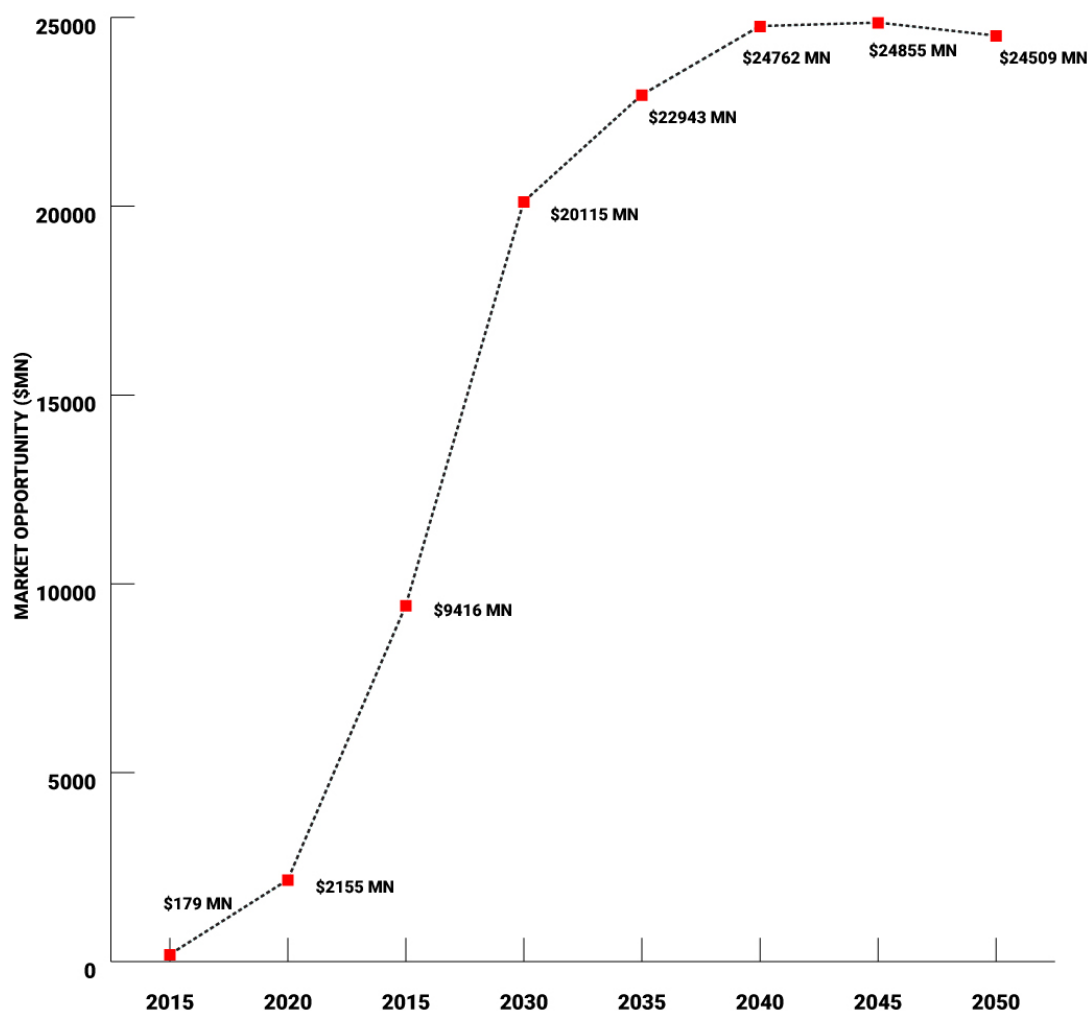
break or fire catchment areas in Bellandur lake in Bengaluru.

“It was fascinating to add little but important details of my town to open maps,” says Gowda who was introduced in 2013 to OSM or OpenStreetMap, a global community of mappers formed as a collaborative project to create a free editable map of the world in 2004. Since then he has been an active contributor to OpenStreetMap and has conducted many workshops in colleges and institutes to induct more people in the community. Gowda has made 8500 edits in the OpenStreetMap, mainly covering areas in Bengaluru, Hassan and Hyderabad.

Gowda and a few other contributors from India are part of a tiny yet growing resistance movement which doesn't want giant corporations to own all the mapping data. For the average consumer, this may not seem like a big deal. But mapping is big business.

The market opportunity for suppliers of mapping to the autonomous car industry is going to be worth over \$24 billion by 2050, according to one estimate (http://pg.jrj.com.cn/acc/Res/CN_RES/INVEST/2015/9/17/f70472c6-f4ad-4942-8eab-3c01f3c717a7.pdf) (pdf). And that's just one industry. A study commissioned by Google (https://www.washingtonpost.com/business/technology/google-asks-how-much-is-mapping-worth/2013/01/30/c40ed040-6b13-11e2-95b3-272d604a10a3_story.html?utm_term=.7467f07756f3) in 2015 estimated that industries that run on top of the Global Positioning Satellite Systems and mapping generate nearly \$73 billion in annual revenue. Worldwide, that industry is was estimated to generate \$150- \$270 billion in revenues. Although new research isn't available, with growing smartphone usage and the birth of companies such as Uber and many others it is safe to assume that the industry has only grown bigger. All the more reason why map data can't be held by only a few companies.

MARKET OPPORTUNITY FOR MAPPING SUPPLIERS TO AUTONOMOUS VEHICLES



SOURCE: MONETIZING THE RISE OF AUTONOMOUS VEHICLE, GOLDMAN SACHS, 2015



“When you add a missing road or landmark in Google maps, in a way you are contributing to their business by adding data. But if you want to use that data to analyse for example, how the city is growing, you need to pay Google for its data– data that is mostly crowdsourced by local residents,” says Gowda.

OpenStreetMap are open source maps available for free on the internet and can be edited by anyone. Of course, there are instances where some edits are incorrect. But a strong peer review system keeps these maps intact. Gowda says for a single incorrect edit, there are “10s of reviewers to correct it.”

OSM that directly competes with Google Maps the largest and most used provider of maps globally has seen a large shift in its popularity with large companies, including, Facebook, Snapchat, Mapillary, FourSquare, MapBox and Wikipedia using OSM as a

base map for various applications.

The OSM movement in India is a decade old but has largely stayed away from the public eye. FactorDaily spoke to close to a dozen mappers in India to understand what drives them to contribute to OSM.

Arun Ganesh, also known as the map man of India recalls early days when his love for cartography introduced him to the community of OSM. Inspired by London's metro map, Ganesh designed a local train map for Chennai and uploaded it on Wikipedia. Soon he started receiving multiple requests to create maps of other cities. The response to that map on Wikipedia inspired Ganesh to put his cartographic skills to good use and he started designing similar maps for other Indian cities.

Ganesh says that he knew the importance of creating maps using landmarks and local understanding of the area back when he was involved with Tata Institute of Social Sciences for creating India's public transport map and during Mumbai's BEST (Brihanmumbai Electric Supply & Transport) bus routes and stops project.

But he realised the true potential of OSM in the 2015 Chennai floods when with the help of a team of volunteers Ganesh developed an app for flood relief that allowed citizens to mark flooded streets through an interactive open map.

The app was able to piece together the status of flooding across the city of Chennai in real time and provide the information to its users. "Because tools were open source and all the data was already available from OpenStreetMap we were able to put together application within two days," says Ganesh. Timing is crucial in disaster relief and post-rescue cases. Ganesh says the app got 2 million hits in 2 weeks during Chennai floods.

Naveen Francis, who works full-time at an IT firm in Bengaluru and is an active member of OSM was spearheading the disaster relief effort for the OSM community during the recent Kerala flood. Francis said that the granular level of detail on OSM facilitated the rescue effort during recovery. He also reached out to Facebook for assistance in mapping and the company was able to map close to 10,000 km (<https://t.co/iIGYvhl4SJ>) of affected area in Kerala. To be sure, Google Maps was also used (<https://www.news18.com/news/tech/kerala-floods-google-facebook-truecaller-and-qkopy-are-doing-their-bit-to-help-1848749.html>) in during the recent Kerala relief wherein the company had activated a Kerala Flood Resources feature in Google maps with a list of guidance to locations for shelter, rescue, food and water for the victims.



Naveen Francis, OSM mapper who led OSM efforts in Kerala flood relief

Globally open maps have been used in many natural disaster relief operations.

Humanitarian Openstreet Maps (<https://www.hotosm.org/what-we-do>) (HOT) is a global non-profit organisation for its work in refugee crisis, disaster risk reduction and poverty elimination using OSM.

Ramya Raghupathy is a full-time staff member of HOT collaborative mapping tool to digitize data to prepare for disaster recovery. “Data enriched maps can be used to many administrative purposes,” says Raghupathy who has been mapping trees and drainages in the city on OSM. She says that pointers on maps, like the number of trees, width of highway and the number of street lights can determine the quality index of a city. Raghupathy said that during the recent Kerala floods, a coordinated effort among the ground level team in Kerala and an engineering team working remotely effectively put together a digitized map of affected areas.

Raghupathy who works out of Bangalore has also been a part of various mapping efforts in the city. Most proponents of OSM in India seem to agree on the necessity of maps in local languages. Independent technologist Thejesh GN who spends a lot of time doing translation and transliteration of maps in Kannada, the local language in Karnataka says that in the last few years OSM has grown a lot in terms of local language maps, including Kannada, Tamil and Hindi.

Apart from disaster relief which remains the larger use case of open maps in India, Thejesh says that OSM is also used in the social sector by non-profit organisation since it helps identify roads, slums, garbage spots in the city. Bengaluru based NGO ITforChange that educates government school staff to utilize open source software also uses OSM.

Not so open data

Despite the effort by the OSM community in India in mapping infrastructure that can be used for administrative purposes, members of the community don't think the data is utilized to its complete potential. There is a lot of data on open maps like drainage areas, street lights, trees and garbage dumps that is useful for urban planning and administration, says Raghupati. The [IoT based tree sensors](https://timesofindia.indiatimes.com/city/bengaluru/iot-based-tech-helps-keep-watch-on-trees-sends-alert/articleshow/61030320.cms) (<https://timesofindia.indiatimes.com/city/bengaluru/iot-based-tech-helps-keep-watch-on-trees-sends-alert/articleshow/61030320.cms>) project by Bengaluru government can also utilize the data from OSM.

Maps should be able to solve real problems and not just tell you where the neighboring restaurants and malls are, says Gowda. "If the government is using free maps to find spots of garbage, how to interact with society it can solve real problems and be used to solve multiple problems," he adds.

Even though the Kerala government did work with OSM community during disaster recovery, there is no policy in effect to facilitate research for the community. The more data that is available about infrastructure: boundaries, panchayats, taluks the more it would enrich open map's experience, says Francis.

Cartographer and project strategist at Development Seed, Sajjad Anwar who has been contributing to OSM for over a decade now is of the opinion that the government and OSM community need to have open dialogues to be able to work effectively together.



Sajjad Anwar, Cartographer and project strategist at Development Seed

Sajjad who is the organiser of Asia's largest mapping conference State of the Map Asia 2018 scheduled to be held in November in Bengaluru says that the conference that will be attended by business heads of large companies such as Uber and MaymyIndia and government heads alike has an agenda to bring a policy in place for more secure open data.

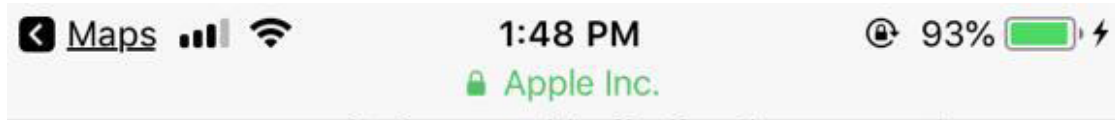
KS Rajan, head of the lab for Spatial Informatics at IIIT Hyderabad who has been an active member of the OSM community since 2007 believes that though the needle has moved only a bit, the momentum of OSM in India is better than before considering that Asia's largest mapping conference is happening in India this year.

Rajan says that academically there is a lot of research done on possible applications of OSM for better governance and administration but for it to be executed in practise government, enterprises and OSM community must work together.

Rajan was a part of a project executed by Andhra Pradesh government in 2015 for Godavari Maha Pushkaralu event. For the event that attracts crowds in a few million, Rajan's team developed a crowd visualization map populated by live feed that was being computationally analyzed. The map that used OSM as its base gave an overview of the number of people visiting the pilgrim spot.

Enterprise shift to OSM

Google Maps remains the de facto choice for consumers and enterprises alike. So much so that in 2012 Google maps came out with a dedicated version of Google maps for iPhones, that comes with a default Apple maps application. Apple, however, has been a proponent and a user of OSM.



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Apple declaration of OSM as its contributor

“It’s interesting to see the rise in large enterprise interest from the likes of Amazon, Facebook and Apple have their own mapping operations in the country,” says Anwar. This interest comes not only from an outsourcing perspective but also from the fact that it is easy for these companies to train people in these geography based projects given there’s already a large community in India that works on OSM.

Fleet and software solution provider Routematic that counts large IT companies like Infosys among customers requires mapping, tracking and navigation as a major business need. The company’s founder Sriram Kannan says that they have an in-house technology solution to calculate routing algorithms and travel time. But they use Google Maps for monitoring and tracking rides and location markers used by driver and passengers.

“For marking places on the map, like pick up location or landmarks using Google maps was turning to be a case of overkill and overcharge,” says Kannan. (See Google maps API prices [here \(https://cloud.google.com/maps-platform/pricing/sheet/?__utma=102347093.137133337.1537728324.1537728390.1537728390.1&__utmb=102347093&__utmz=102347093.1537728390.1.1.utmcsr=google|utmccn=\(organic\)|utmcmd=organic|utmctr=\(not%20provided\)&__utmv=-&__utmk=224988442&_ga=2.204845264.1970459191.1537728324-137133337.1537728324\)](https://cloud.google.com/maps-platform/pricing/sheet/?__utma=102347093.137133337.1537728324.1537728390.1537728390.1&__utmb=102347093&__utmz=102347093.1537728390.1.1.utmcsr=google|utmccn=(organic)|utmcmd=organic|utmctr=(not%20provided)&__utmv=-&__utmk=224988442&_ga=2.204845264.1970459191.1537728324-137133337.1537728324).) OSM allows you to use maps offline. Whereas in the case of Google, every time a business uses a place that has been marked, the business is charged. But with over a billion users, Google’s dominance in maps is undeniable. According to a Morgan Stanley report, ads that let businesses highlight themselves on Google Maps will [generate \(https://www.economist.com/business/2017/06/08/the-battle-for-territory-in-digital-cartography\)](https://www.economist.com/business/2017/06/08/the-battle-for-territory-in-digital-cartography) nearly \$3.7 billion in revenues for Google in 2020.

Also, Kannan says OpenStreetMap is more detailed in terms of landmarks, that Indians understand more clearly and easily. Other large organisations like JustDial and Zomato also use OSM.

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Updated at 02:13 pm on September 25, 2018 OpenStreetMap was earlier written as Open Street Maps and Sajjad Anwar's employer was written as Seed Development in a photo caption and copy.

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