

Who contributes OpenStreetMap data? Communities & corporations


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June 16, 2021


Who I am



- GIS expert, Scientific Project Officer at the **European Commission – Joint Research Centre**
- **OpenStreetMap** contributor since 2014
- Member of the **Italian OSM community**
- Member of the **OpenStreetMap Foundation** & the State of the Map (SotM) Working Group
- Co-founder of **PoliMappers**
- Co-chair of the **SotM Academic Track** since 2018
- Voting Member of the **Humanitarian OpenStreetMap Team (HOT)** since 2017
- Charter Member of the **Open Source Geospatial Foundation** (OSGeo) since 2015
- Member of **GFOSS.it** (Italian OSGeo chapter)



Introduction to OpenStreetMap

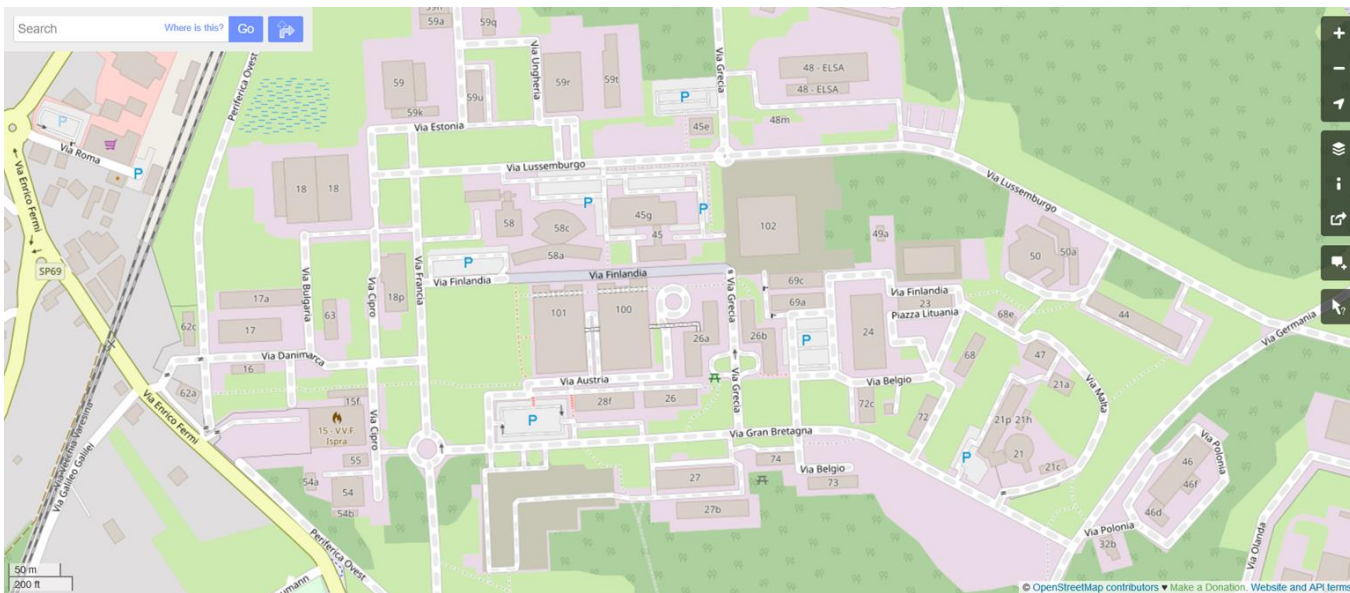


OpenStreetMap (OSM)

<https://www.openstreetmap.org>



- OpenStreetMap is the most popular **Volunteered Geographic Information** (VGI) project
 - started by **Steve Coast** in UK in 2004

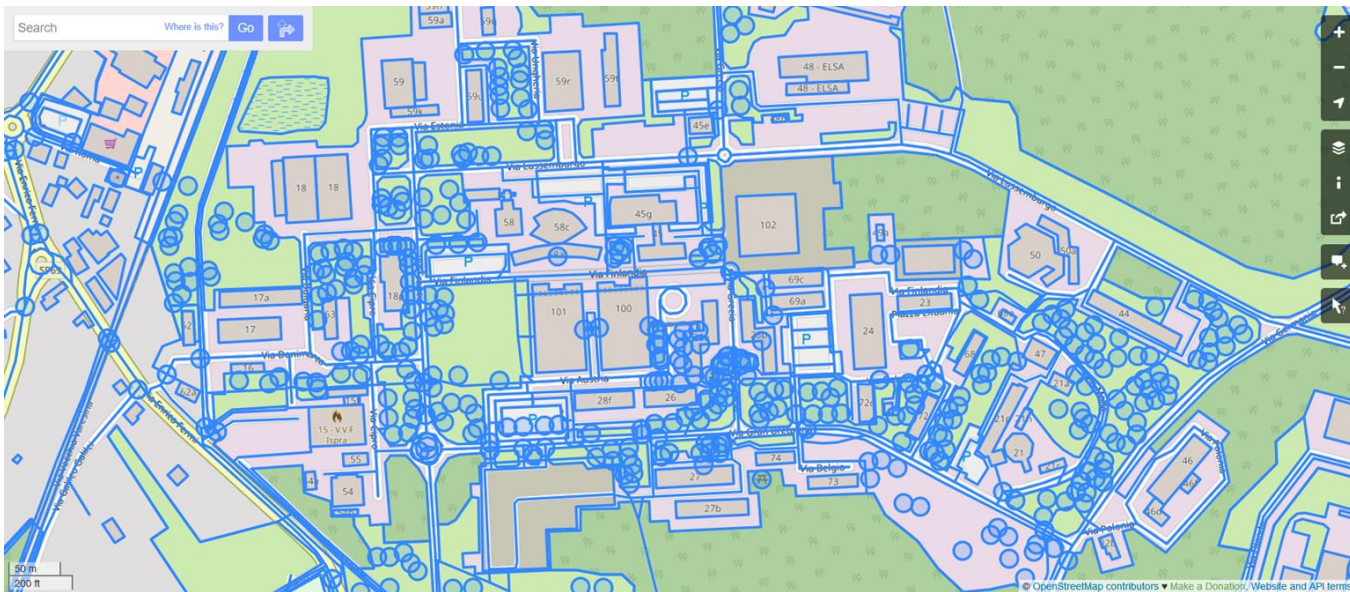


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 - aimed to create a 'crowdsourced' **free** geospatial database of the world (ODbL license)



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 - started by **Steve Coast** in UK in 2004
 - aimed to create a 'crowdsourced' **free** geospatial database (ODbL license)
 - the world's **largest, most various, complete** and **up-to-date** geospatial database
 - the **Wikipedia of the maps**
 - OpenStreetMap **is not an alternative to Google Maps!**





OpenStreetMap community & contributors

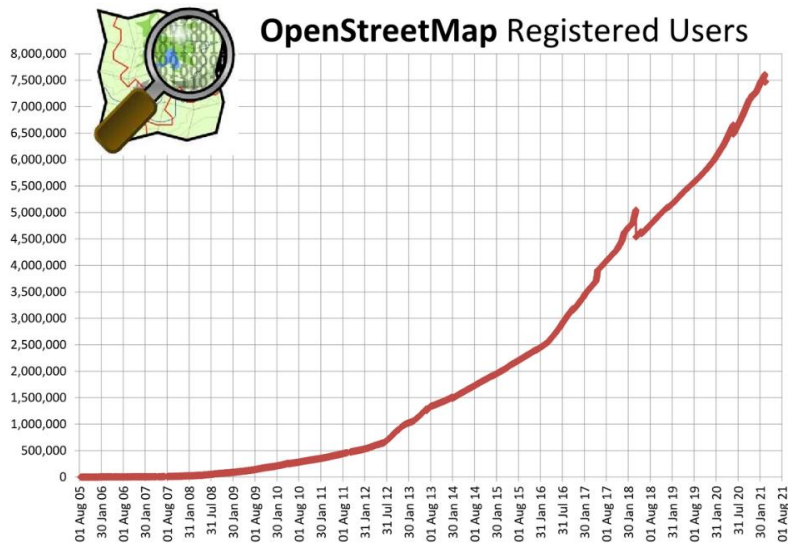


How many OSM contributors?

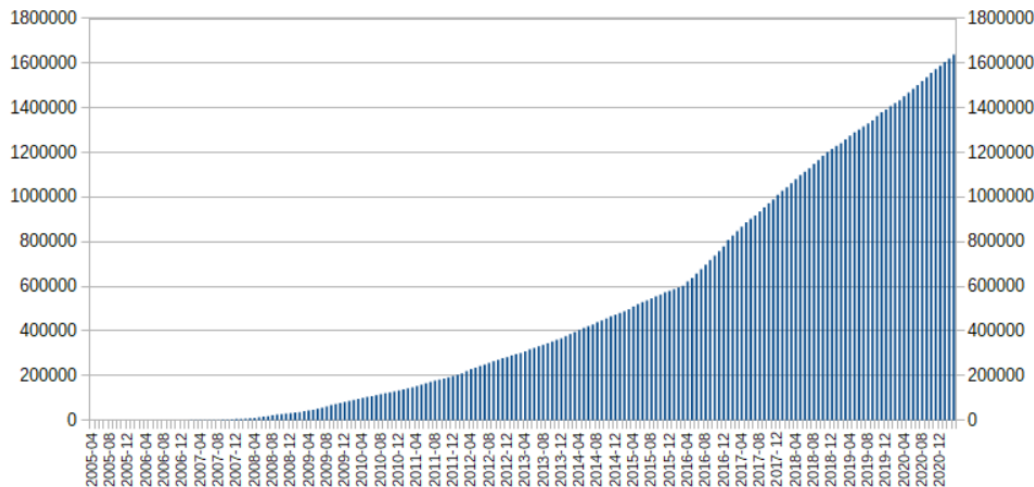
<https://wiki.openstreetmap.org/wiki/Stats>

- The community of contributors is very large and everyone can contribute!
 - more than **7.5 million registered users** & **1.6 million active contributors**
 - about **50000 active contributors per month** & about **120 million edits per month**

OpenStreetMap Registered Users



OpenStreetMap Accumulated Contributors per Month



OpenStreetMap Foundation (OSMF) <https://wiki.osmfoundation.org>

- An international, not-for-profit organisation **supporting** (not controlling) the OSM project:
 - based in the UK
 - acts as a **legal entity** for the project
 - maintains the **servers and services** to host the project
 - promotes **fund-raising** to support the project
 - organises the annual State of the Map (SotM) **conference**
 - has a **Board of Directors** and several **Working Groups**:
 - Communication, Data, Licensing, Membership, Operations, SotM, etc.
 - everyone can become a member!

State of the Map (SotM)

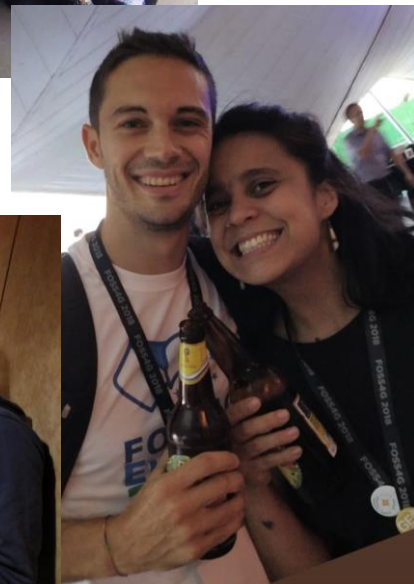
<https://stateofthemap.org>

- The **OSM community** annual conference – developers, users, academics, thematic groups, etc.



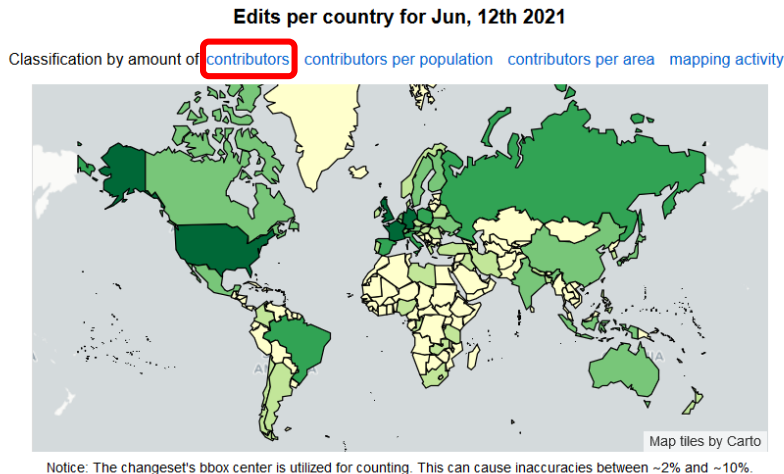
State of the Map (SotM)

- OSM connects people!



Where do users contribute (most) to OSM?

- Some national communities are particularly active in OSM:
 - number of daily active contributors



No.	Country	Contributors (organised)	Created elements	Modified elements	Deleted elements
1.	Germany	853 (0%)	57848	53125	8057
2.	United States	415 (1%)	485529	42142	16422
3.	France	336 (0%)	42703	47213	5891
4.	United Kingdom	249 (0%)	50894	23430	3953
5.	Italy	184 (1%)	21045	10516	1937
6.	Poland	180 (0%)	66142	14063	18044
7.	Russia	161 (1%)	50225	15215	5376
8.	Brazil	151 (52%)	106301	41101	3614
9.	Spain	122 (0%)	21303	4598	1003
10.	Mexico	114 (81%)	19326	13758	748
11.	Japan	109 (0%)	48550	20621	8507
12.	India	105 (6%)	30088	10856	3362

<https://osmstats.neis-one.org/?item=countries>

What do users contribute (most) to OSM?

- Some objects are more 'interesting' to map than others!

Last edit: 2021-01-02T14:47:46Z (by Davide Baroffio)

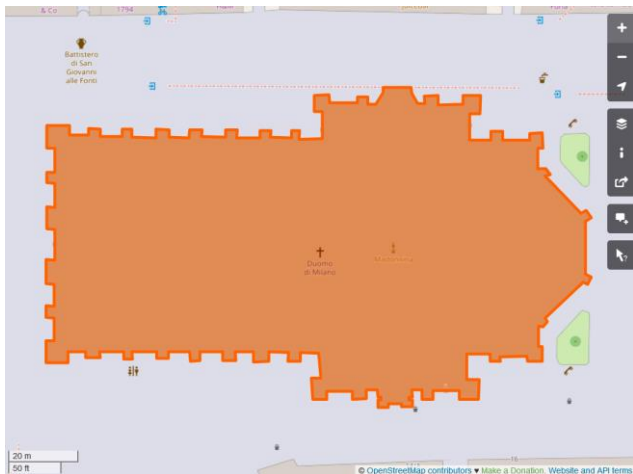
Created at: 2008-10-09T22:08:10Z (by gernot)

Current version: 66

Contributors: 47

Attributes:

- addr.city: Milano
- addr.postcode: 20122
- addr.street: Piazza del Duomo
- amenity: place_of_worship
- building: cathedral
- denomination: roman_catholic
- height: 24
- historic: yes
- name: Duomo di Milano
- name.cs: Milánský dóm
- name.de: Mailänder Dom
- name.en: Milan Cathedral
- name.es: Catedral de Milán
- name.fr: Dôme de Milan
- name.hi: मिलानो कथेड्रल
- name.it: Duomo di Milano
- name.nl: Dom van Milaan
- name.pl: Katedra Narodzin św. Marii w Mediolanie
- name.pt: Catedral de Milão
- name.ru: Миланский собор
- name.zh: 米蘭大教堂
- official_name: Cattedrale di Santa Maria Nascente
- opening_hours: Mo-Su 08:00-19:00
- religion: christian
- toilets: wheelchair: yes
- tourism: attraction
- wheelchair: yes
- wheelchair.description.de: Eintritt frei für Rollstuhlfahrer
- wikidata: Q18068
- wikipedia: it:Duomo di Milano



Last edit: 2017-06-11T19:59:11Z (by Alecs01)

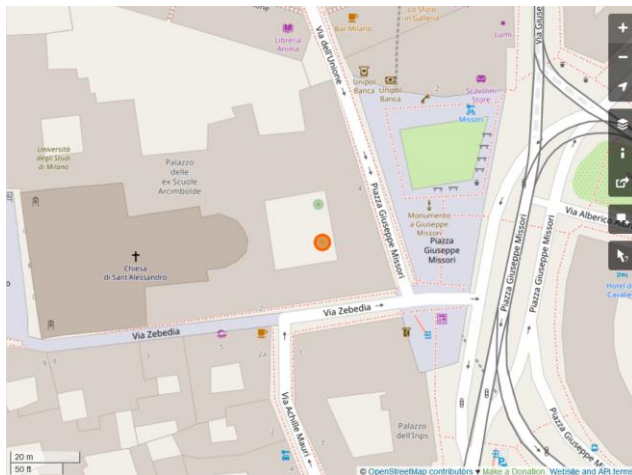
Created at: 2017-06-11T19:59:11Z (by Alecs01)

Current version: 1

Contributors: 1

Attributes:

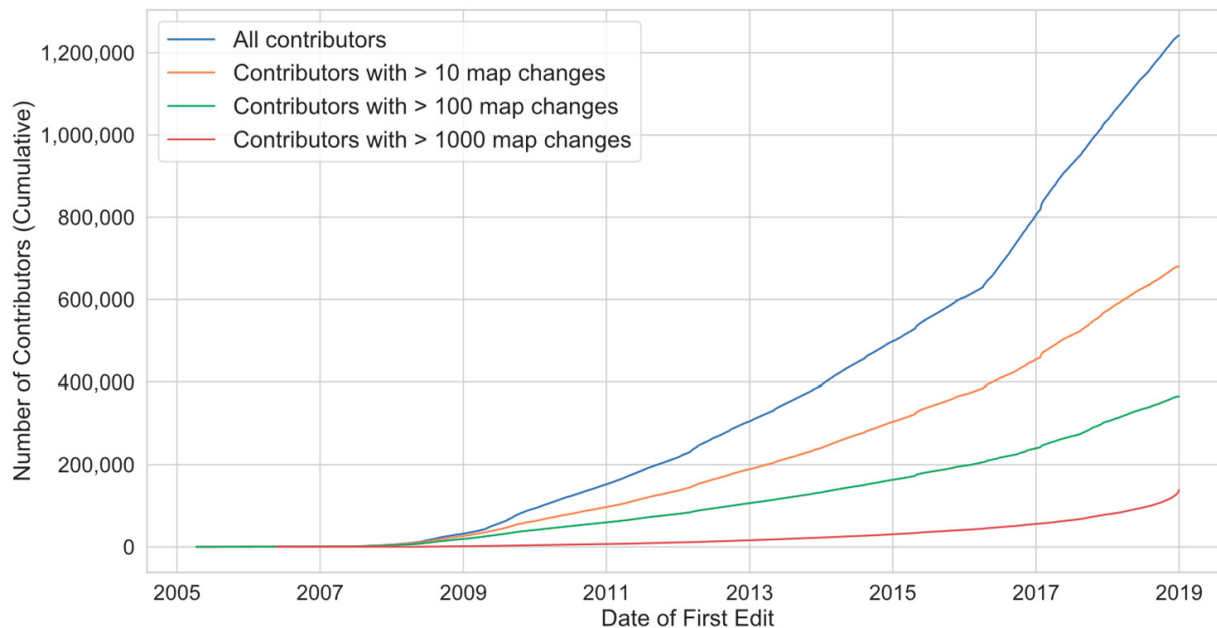
- natural: tree



data from <https://is-osm-uptodate.frafra.eu>

Who contribute (most) to OSM?

- The OSM project is no exception to the **90-9-1 rule** found in online communities.
- Several groups (women, people from the Global South, etc.) are **under-represented** in OSM.



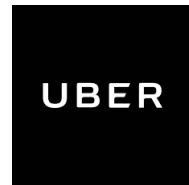
Corporate editors in OpenStreetMap

Who is contributing to OpenStreetMap?

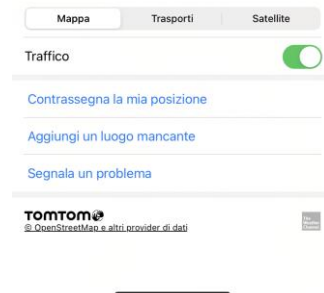
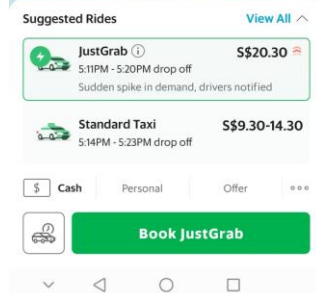
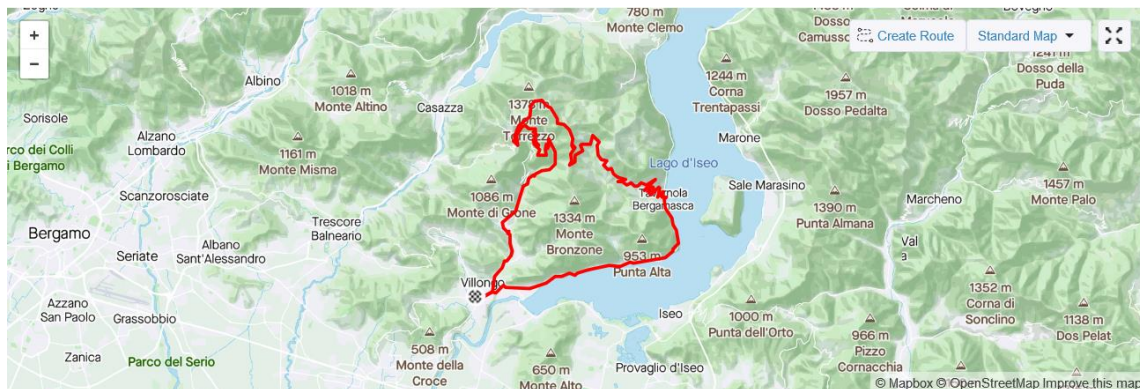
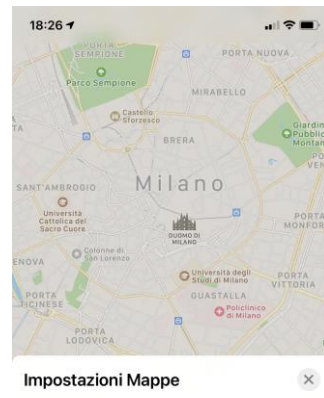
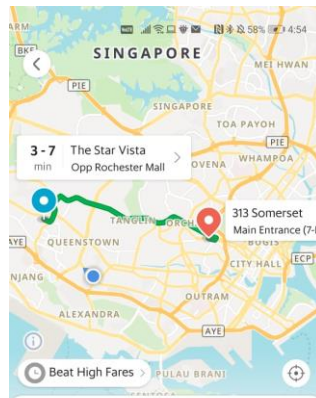
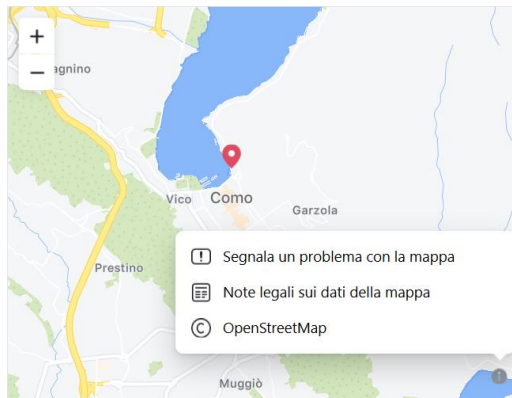
- The open access license of the data and their (potential) level of detail have attracted the interest in OSM – among others – from users with **different motivations**:
 - **humanitarian orgs** to create post-disaster data/data missing in official maps
 - **governments** to update/complement their authoritative data
 - **corporations** to improve their map-based data for commercial purposes
 - **paid editors**, who curate the map professionally



development SEED



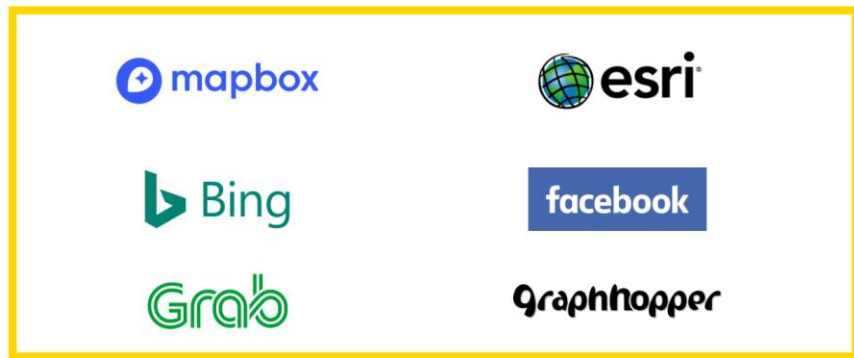
Examples of OpenStreetMap-based map services



Corporations in OpenStreetMap

- Most of the times they also contribute back to OSM **economically**, e.g. by **supporting** the OSMF and **sponsoring** SotM conferences:

Gold Corporate Members



Our sponsors

Gold



Silver



Bronze



Corporations in OpenStreetMap

- Corporate activity can be traced from the public editors' OSM usernames/projects and from the mapping behaviour (e.g. Monday-Friday signature)

Organised Editing/Activities/Amazon

[< Organised Editing | Activities](#)

Contents [hide]

- 1 Amazon Logistics
 - 1.1 Use of OpenStreetMap
 - 1.2 Contact
 - 1.3 Editing process
 - 1.4 Editing geographies
 - 1.5 Tools used
 - 1.6 Mapping guidelines
 - 1.7 FAQ's
 - 1.8 Editing team
 - 1.8.1 Current users
 - 1.8.1.1 Editors
 - 1.8.1.2 Reviewers/Auditors
 - 1.8.2 Previous users

https://wiki.openstreetmap.org/wiki/Organised_Editing/Activities/Amazon

This repo is for the Open Maps team at Microsoft making organized edits to OpenStreetMap.

Below is information about data Microsoft has shared under ODbL

- [Bing Imagery License](#)
- [Microsoft Building Footprints](#)
- [Microsoft Computer Generated Building Footprints for the US](#)
- [Microsoft Computer Generated Building Footprints for Canada](#)
- [Microsoft Computer Generated Building Footprints for Uganda and Tanzania](#)
- [Microsoft JOSM Streetside Plugin](#)
- [Street signs detected from Bing Streetside Imagery](#)

• Projects being worked on the [MS Open Data Team](#)

- [Missing Street Names in Western Australia](#) - Done
- [Missing Street Names in South Australia](#) - Done
- [Missing Street Names in New South Wales](#)
- [Missing Street Names in Australian Capital Territory](#) - Done
- [Invalid Turn Restrictions](#) - Done
- [Mistagged Water Features in Australia](#) - Done
- [Fixing Incorrect Water Feature Relations in Australia](#) - Done
- [Create New Missing Dry Lake Features in Australia](#) - Done
- [Fixing mini-roundabouts](#) - Done
- [Improve Australian Coastlines](#) - Done
- [Improve Australian Piers](#) - Done
- [Add Missing Dry Lakes in Australia](#) - Done
- [TIGER road clean up in Washington State](#) - Done
- [Road Network for Fastest Growing US Cities](#) - Done
- [Surface Tags on Nodes](#) - Done
- [Missing Streets & Street Names in Victoria](#)
- [Fix Roundabouts in Australia](#) - Done
- [Missing One-Ways in Seattle](#) - Done
- [Missing Turn Restrictions in US Cities](#)

Microsoft is not making bulk edits, automated imports or algorithmic 'robot' edits in to OSM anywhere. We are a small team working to improve the map.

For more information reach out to the entire Open Maps Team using [openmaps\(at\)microsoft.com](mailto:openmaps(at)microsoft.com)

<https://github.com/microsoft/Open-Maps>

Corporations in OpenStreetMap

- They map places of strategic importance to their business, mainly **roads**:
 - **Bing**: US buildings extracted from deep learning algorithm
 - **Facebook**: review/edit of road data extracted from satellite imagery
 - **Mapbox**: machine-assisted mapping
 - **Uber & Grab**: road data for navigation (turn restrictions, etc.)
 - **Kaart**: drive vehicles to capture road networks and other street-level features

Year	Features	New KMs of Road	KM of Existing Roads	New Buildings	Edits to Existing Buildings	Amenities	POIs
2015	1,703,107	96,604	660,591	321,535	47,730	13,892	40,096
2016	2,251,615	87,321	677,795	308,785	198,366	69,949	214,087
2017	3,121,727	179,256	591,627	632,859	305,665	58,616	178,887
2018	9,925,463	682,938	2,982,248	1,709,935	176,113	33,845	61,238

Source: Anderson J, Sarkar D & Palen L (2019). Corporate editors in the evolving landscape of OpenStreetMap. *ISPRS International Journal of Geo-Information* 8(5), 232.

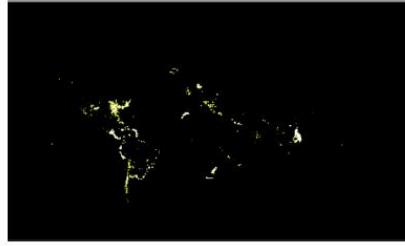
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 - **Kaart**: drive vehicles to capture road networks and other street-level features
- They develop software used by the whole OSM community – among others:
 - **Mapbox**: iD editor (initially), OSMCha, etc.
 - **Mapbox, Bing & ESRI**: main providers of satellite imagery used in OSM

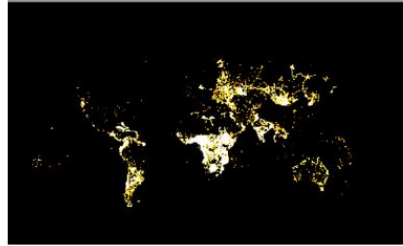
Footprint of corporate edits (2015-2018)



Telenav



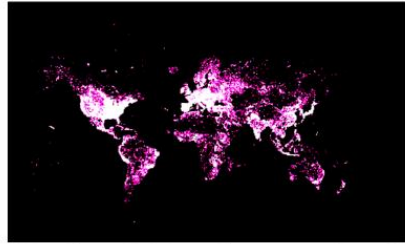
Kaart



Apple



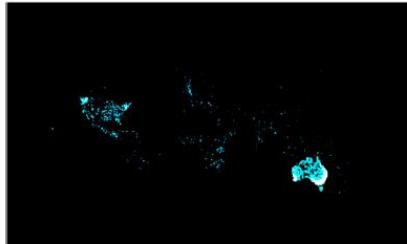
Facebook



Mapbox & Development Seed



Amazon



Microsoft



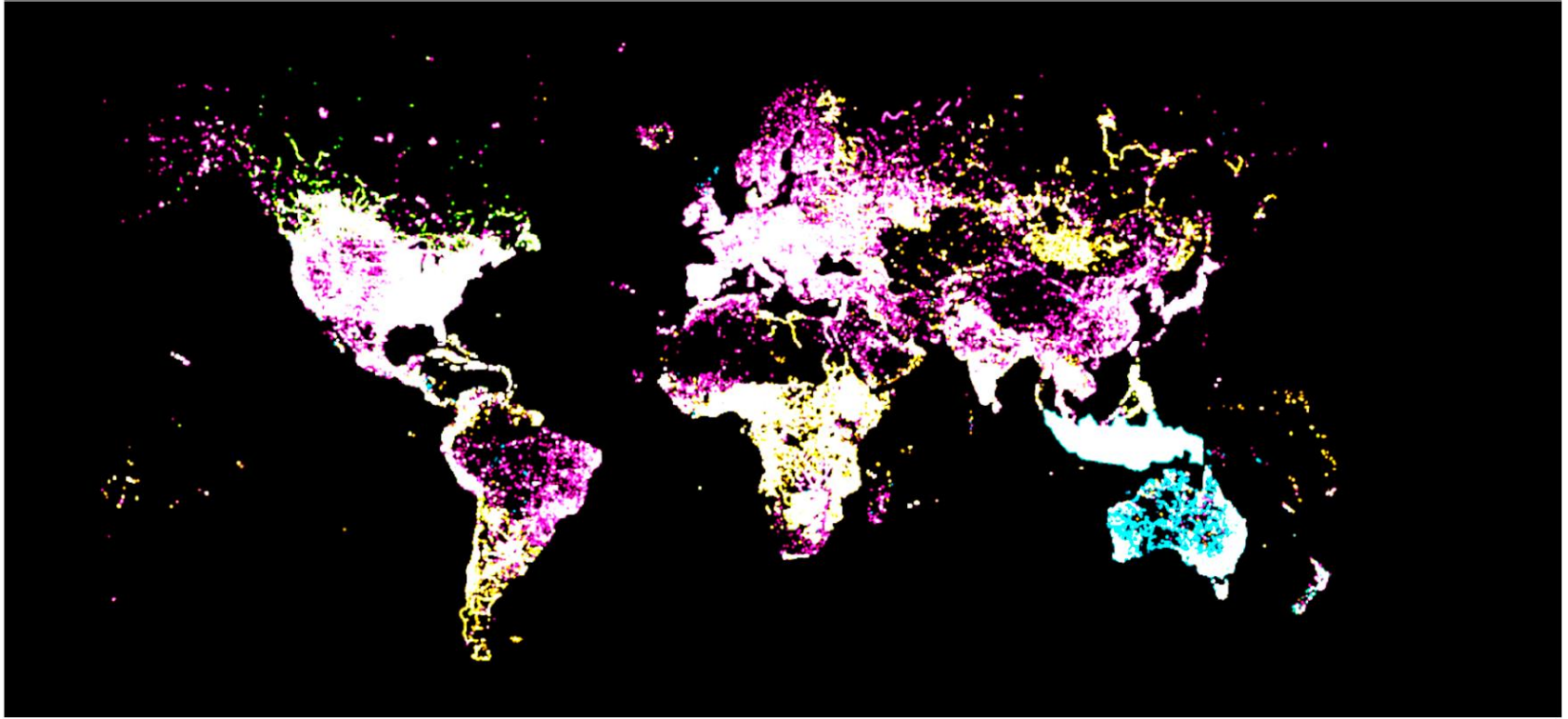
Grab



Uber

Source: Anderson J, Sarkar D & Palen L (2019). Corporate editors in the evolving landscape of OpenStreetMap. *ISPRS International Journal of Geo-Information* 8(5), 232.

Footprint of corporate edits (2015-2018)

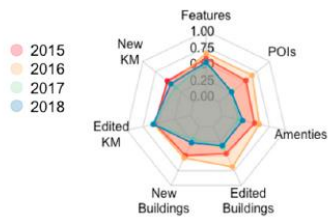


Source: Anderson J, Sarkar D & Palen L (2019). Corporate editors in the evolving landscape of OpenStreetMap. *ISPRS International Journal of Geo-Information* 8(5), 232.

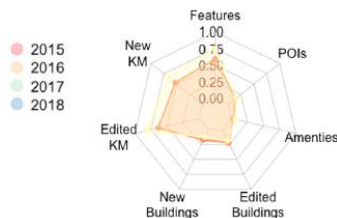
Mapping profiles of corporate edits (2015-2018)



(a) Telenav



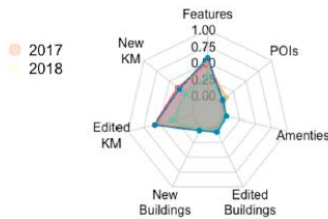
(b) Kaart



(c) Apple



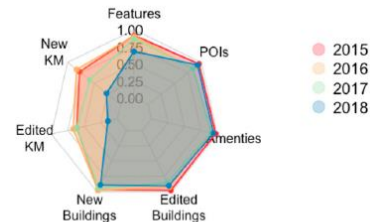
(d) Facebook



(e) Mapbox & Dev. Seed



(f) Amazon



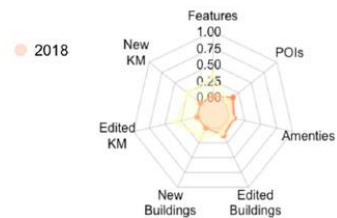
(j) Non-Corporate Editors



(g) Microsoft



(h) Grab



(i) Uber

Source: Anderson J, Sarkar D & Palen L (2019). Corporate editors in the evolving landscape of OpenStreetMap. *ISPRS International Journal of Geo-Information* 8(5), 232.

What future for OSM?

- Corporate editors have become a stable part of the OSM ecosystem:
 - 30% of all global edits in 2018
 - the largest impact so far is on the road network – what will happen next?
- Conflicts with edits from volunteers: is this really VGI?
 - motivation for contributing is economic
 - high quality & validated data, but no local knowledge – biases in the map?
 - how much are corporate editors sharing?
- A first step: *Organized Editing Guidelines from the OSMF* (2018) to ensure transparent participation from large editing teams (including corporate editors)

Thank you!



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