Towards understanding the impact of mapathons – Reflecting on YouthMappers experiences

Presented by Serena Coetzee
Centre for Geoinformation Science, University of Pretoria, South Africa

Co-authors:
Marco Minghini, Politecnico di Milano, Italy
Patricia Solis, Texas Tech University, USA
Victoria Rautenbach and Cameron Green, University of Pretoria, South Africa

FOSS4G 2018, Dar es Salaam, 29 August 2018
Openly licensed geospatial database created and edited daily by volunteers worldwide.
OpenStreetMap contributions

1. field mapping
2. remote mapping
3. bulk import
OpenStreetMap contributions

1. field mapping
2. remote mapping
3. bulk import
mapathon ~ map marathon

collaborative effort by groups of people who meet together (e.g. at a university or a company) for collecting specific map data where OpenStreetMap data is scarce or non-existent (typically for humanitarian purposes) through remote mapping
What is the **impact** of mapathons?

- Do mapathons improve the map data?
  - Can newcomers contribute quality data?
  - If unfamiliar with the area, can one contribute quality data?
  - Is the data validated properly?

- Do mapathons increase the number of contributors?
  - Do newcomers contribute again?
  - Why do some continue to contribute?
  - If not, what do they take with them from the mapathon?
What is the **impact** of mapathons?

- **What others have found…**
  - How mapathon is conducted is important
    - Be careful not to attract floods of newcomers who cannot be coordinated (Dittus et al. 2016)
  - Mapathons can positively affect school children’s engagement, enthusiasm and attitude towards geography (Ebrahimi et al. 2016)
What is the **impact** of mapathons?

- What others have found…
  - Experienced users uploaded most of the data after FOSS4G 2015 Europe mapping party in London (Mooney et al. 2015)
  
  - Difficult to convert newcomers into long-term contributors, but long-term contributors just carry on… (Juhász and Hochmair 2018)
YouthMappers

- 113 chapters in 35 countries
- > 5,000 students
- Mapped in OpenStreetMap since 2016:
  - 2,776,167 buildings
  - 422,344 roads
  - >20,000 other features
  - 2,000,000 map changes per month

(Statistics: April 2018)
What is the impact of YouthMappers mapathons?

Reflections from three universities...
• PoliMappers (since 2016)
  – Community of mappers based on OpenStreetMap, open data and open source
  – Empower students to work with OpenStreetMap and geospatial data!
  – Mapping activities every 2 months
    • Field mapping and remote mapping
    • Wide variety of technologies used, e.g. Field Papers, Mapillary, maps.me, Geopaparazzi, …
Politecnico di Milano (Italy)

• mapathons by PoliMappers
  – announced in lectures
  – email invitations to students and previous participants
  – open to all students
After lectures, late afternoon, starting 16:00 or 17:00
30–70 voluntary participants per mapathon
Participants bring their own laptops
Last for a few hours
• If there are many newcomers
  – Introductory presentation
  – Hands-on tutorial in iD editor, stress importance of quality of data
• Mix of novice and experienced mappers
  – Long-term members guide newcomers
• Validation
  – Changesets are marked with #polimappers and event tag (e.g. #polimappers03)
  – Long-term members validate contributions
Texas Tech University (TTU)

- Co-founding YouthMappers chapter (since 2015)
  - Members from many different majors
  - Formal status on campus (eligible for funding)
- Meetings once a month
  - Several mapathons per year
  - Training workshops (e.g. JOSM)
  - Symposia showcasing open data
  - Map-Offs against university sports rivals
  - ”Map your way home”
    - add detailed attribute data in Texas
Did you bring a laptop?

- YES
  - Have you mapped on OSM?
    - YES
      - Have you used GIS?
        - YES
          - A
        - NO
          - B
    - NO
      - C
- NO
  - Sometimes ad hoc extra credits offered
  - D
  - E
  - F

Pizzas in map room
Music/videos from mapped area
Typically 3 hours
70-75 participants per mapathon
Start with orientation presentation
Quick start instructions at each desk
Chapter members point out mistakes early
Different assistance depending on experience
Texas Tech University (TTU)

- mapathons in service-learning course
  - Learning objective
    - How to plan and execute a mapping project
  - Map data and research humanitarian or development issue at hand
    - Work with students from around the world
    - Quality of first 500 edits reviewed, feedback provided
    - Focus on US AID request themes
    - Class hosts public mapathon

Some students enjoyed it so much, they retook course, even though they had passed with high marks!
University of Pretoria (South Africa)

- Inaugural YouthMappers chapter (since 2016)
  - Activities focus on students and local schools
  - Monthly open data events for students
  - Final year geoinformatics students bulk upload their project data into OpenStreetMap
  - Regular events with groups of school children
- Mapathons integrated into the curriculum as practical lab sessions for digitizing
10-30 participants per mapathon
Sometimes additional credits offered
Typically 2 hours on a Friday afternoon
Many newcomers at first mapathon of the year
Each mapathon focuses on different purpose and area
Introductory presentation, training video, iD editor tutorial
University of Pretoria (South Africa)

Challenges:
• Bad imagery or cloud cover (16%)
• Difficult to identity roads or footpaths (26%)
• Difficult to identify road surface (22%)
University of Pretoria (South Africa)

“We learnt how to digitize, that maps can have errors (map accurately!) that we can help other communities through mapping”
I will use OpenStreetMap again (75%)
• JOSM Validator

• Prepare before/after base map in QGIS – improvement?

• Can data be used for routing in maps.me?
What is the **impact** of mapathons?

1. map data
2. mapathon participants
3. hosting institutions
Impact on map data

2 million map changes per month by YouthMappers!

YouthMappers data as good as that from other contributors (2016 study)

General VGI quality challenges apply…
Impact on map data

- Ways to address quality challenges...
  - Set up a data collection protocol
  - Match remote mapping with field mapping trip (if possible)
  - Senior students validate data contributed by juniors
  - Check whether contributed data can be used in OpenStreetMap applications
Impact on mapathon participants

• Opportunity to network with peers (globally)
  – Sense of belonging, have fun, find friends
• Practical learning experience
  – Do not accept quality of map at face value!
• Supports learning in many domains
  – Technical, as well as humanitarian and developmental issues
Impact on mapathon participants

• Empowers students by including them on the map

• May prompt them to realize what a good citizen is

• Raises awareness of geospatial careers
Impact on hosting institutions

• ‘open’ into teaching
  – Course at Texas Tech University
  – Practical lab sessions at University of Pretoria
  – mapathons recognized as innovative teaching method at Politecnico di Milano

• ‘open’ into research
  – Research in OpenStreetMap, open data and open source
  – By postgraduate students and staff ...
Conclusions

Decide what the objective with your mapathon is, shape it accordingly

Aim for acceptable balance between productivity and quality
Acknowledgements

Thanks to our mapathon participants!

YouthMappers network

www.youthmappers.org

US AID supports the YouthMappers program through a grant from the USAID GeoCenter (Award #AID-OAA-G-15-00007)

Views expressed in this article do not necessarily reflect the policies and viewpoints of the agency or its employees