WeCount project: Advancing sustainable mobility through citizen science

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Region: Europe-wide
Country: Slovenia
Topic: Public and stakeholder involvement

In brief

If urban mobility is to be truly sustainable, it must be designed around the needs of the public. However, understanding these requirements, and securing accurate and accessible data, is often complex. Citizen science is proving an effective tool for generating and analysing data on urban mobility.
mobility, with findings helping to shape policymaking.

**Context**

One project, [WeCount](#), is using data collected by local residents across five cities to understand traffic flow, air quality and active travel demand. WeCount is an EU Horizon 2020 funded project aiming to engage the public in the production of data, evidence and knowledge around mobility in their neighbourhoods while reducing the cost of traffic counting.

The project is being pioneered at a time when other environmental research initiatives are exploring new approaches to data collection that tackle the financial and logistical challenges around mobility data.

One pilot in Ljubljana, Slovenia, reveals the potential for crowdsourcing approaches and the opportunity for other cities to follow suit.

**In action**

In the WeCount project, local residents are recruited to use sensors that count road traffic (Telraam) to measure traffic as part of two pilot projects – in Leuven (Belgium) and Barcelona/Madrid (Spain) – and three cases studies in Ljubljana (Slovenia), Dublin (Ireland) and Cardiff (Wales). Understanding traffic flow is key to comprehending current travel patterns and to designing effective solutions. Indeed, WeCount partner, Transport & Mobility Leuven, received Information Flanders’ ‘best API’ prize for its traffic measurement programme with Telraam.

At the core of the project is its participatory approach. WeCount aims to involve citizens in the process of data gathering and create a community around the activity to raise awareness about their mobility behaviour.

WeCount’s innovative and low-cost data collection methodology also provides an interesting blueprint for transport research. As climate change looms and the coronavirus (COVID-19) pandemic continues to disrupt everyday mobility, public authorities, academia and private providers are desperately seeking new transport solutions. This requires new – and creative – data collection techniques.

WeCount’s work proved indispensable during the pandemic. As face-to-face research ended abruptly, alternative solutions were required. WeCount deployed an effective hybrid approach. Combining offline tools with online training workshops to familiarise participants with the technology, supplemented by face-to-face or online meet ups to analyse and act upon the data, the project has ensured maximum inclusivity.
Results

In Ljubljana, data from WeCount’s sensors has proven a useful evidence base for the redesign of active mobility infrastructure in the city. Ljubljana is a political and cultural centre, as well as the
main commercial, business, congress, exhibition, transport, scientific and educational centre of the Republic of Slovenia.

By analysing and applying the Telraam data, it was possible to design a better street profile based on actual, rather than imaginary and speculative, street use, thus creating targeted solutions. Telraam data demonstrated a high percentage of cycling traffic, revealing the importance of expanding existing cycling infrastructure. On the Grubar embankment, Zelena road and Pokopališka street, the data was used to support a proposal for a cycle lane separated from motor vehicle traffic. See Ljubljana’s impact video here.

As Ljubljana seeks to develop an integrated transport strategy, Vision 2025, which enhances sustainable mobility, this participatory project provides vital support. Active travel is key to the city’s objectives, with networked bicycle routes and other cycle-friendly infrastructure being developed to encourage more active travel. The data identified important bike corridors, captured cycling trends and justified possible investments in cycling infrastructure.

The project was also an exciting opportunity to engage students in sustainable mobility. The data mapping was conducted by the Faculty of Architecture at the University of Ljubljana, with students setting up sensors, collecting data, analysing results and proposing alternative street designs.

Challenges, opportunities and transferability

WeCount’s response to COVID-19 measures provides an example of how similar mobility initiatives can create the flexibility and collaboration required for the success of projects. WeCount successfully moved training online during the pandemic and triangulated this methodology with face-to-face learning, where possible.
Giovanni Maccani from Ideas for Change, a project partner, said ‘COVID-19 was a big issue, we had to move everything online and it changed our strategy completely, we had to implement new online tutorials’.

The project also offers a methodology for coordinating traffic counting with insight into air quality, so providing a comprehensive understanding of the impact of urban traffic. Data procured from WeCount’s Telraam sensors serve as a direct quantification of urban air pollution, while its traffic count provides an indirect gauge for greenhouse gas emissions. These measures can be used as part of the Sustainable Urban Mobility Indicators (SUMI), a benchmarking tool that helps cities develop Sustainable Urban Mobility Plans (SUMPs).

If citizen science and crowdsourcing initiatives are to be successful, they must learn from one another. Building citizen science capacity by sharing experience and expertise has been a key part of the WeCount project. The lessons learnt throughout this process – and the obstacles faced – were used to create a series of informative infographics to support similar projects in reshaping research processes during crisis situations and, more generally, where low-cost solutions are sought.

In addition, project partners have shared advice on training volunteers. At the 2020 SDG Citizen Science conference, Kris Vanherle from Transport & Mobility Leuven noted the importance of ‘local champions’, key individuals who build and maintain trust between participants, the scientific community and policy-makers.

In Depth

Resources for additional reading:

- Barcelona residents achieve lowering street speed limit building on self-generated data: https://we-count.net/news/barcelona-residents-achieve-lowering-street-speed-limit-building-on-self-generated-data
- Hybrid citizen engagement approaches to deliver citizen-led project results in times of a pandemic: Policy Brief#1: https://we-count.net/uploads/WeCount_Policy_Brief_1_final.pdf
- Students from Ljubljana propose new street and traffic arrangements using data from traffic counting sensors: https://we-count.net/news/ljubljana-impact-story

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