

Mind the gap: Travel apps need human help to bridge digital divide

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When Inez Rastovac, who works for the Dutch municipality of Tilburg,

asked 30 women of migrant background in 2021 about gaps in technologies for using local transport, she wasn't expecting them to request cycling lessons.

"At first we asked questions about digital challenges," said Rastovac. "But we rapidly saw it came down to a basic need: owning a bike and knowing how to ride it."

Back to basics

In the Netherlands, which has more bicycles than inhabitants, the request made sense. The women, who have been living in the Netherlands for five to 15 years, need bikes to get to work, take their children to school and be more independent.

"Many of these women work outside Tilburg, where the bus connections are not so good, or work out of normal working hours," said Rastovac. "Riding a bike gives them more options and flexibility."

In response, the municipality set up a network of volunteer teachers to give cycling lessons and approached a second-hand shop to provide inexpensive bikes to the women.

The scheme was part of a research project to identify digital shortcomings in [transport services](#) and recommend how they can be made more inclusive. The project, called [DIGNITY](#), ran for three years until the end of 2022.

In addressing the need for bikes in Tilburg, the researchers discovered ways in which technology can hinder use of local transport.

Digital progress in transport, welcomed by most, can exclude some people such as the poor, the elderly, migrants, those with disabilities and

rural inhabitants.

In Tilburg for instance, the public bicycle-sharing program isn't easily accessible to women of migrant background because a [credit card](#) is needed to unlock and use the bikes.

"We take too many things for granted—computers, tablets, smartphones, credit cards," said Silvia Gaggi, senior project manager at Isinnova, a research institute based in Italy's capital Rome. "But not everyone has access to these."

Tech gaps

Gaggi coordinated DIGNITY, which featured companies, local authorities and research organizations from six European countries. Besides the Netherlands, they were Belgium, Germany, Italy, Spain and the UK.

Gaggi said the project unearthed the ways in which technological advances can leave people behind.

"DIGNITY raised awareness of the digital gap in transport and the need to bridge this gap," she said.

For example, in Italy 89% of [older people](#) are likely to be excluded from accessing a [smartphone app](#) that requires installation and mobile internet, according to the project.

It also said that, in Germany, more than 50% of disabled people have little confidence in planning travel with a smartphone and that, in the Spanish city of Barcelona, over a quarter of people with low education levels have never used the internet on a smartphone.

Helping hands

The project produced a "[toolkit](#)" to help local and regional governments make transport systems more accessible. One recommendation is to involve users in the design of a specific product—a method called "Inclusive Design Wheel", or IDW.

"It is about building a culture of dignity for all stakeholders in a transport ecosystem," said Gaggi.

DIGNITY applied IDW in four places—Tilburg, Barcelona, the Italian city of Ancona and the Belgian region of Flanders—by working with representatives of vulnerable groups.

In Tilburg, a second target group was formed of elderly people.

"Their main request was to have a [phone number](#) they could call, with an actual human on the line, in case there were a problem on their journey," said Rastovac.

The municipality created a brochure with information on the principal transport providers in Tilburg and the contact number of a helpdesk run by a welfare organization. It's now distributed in train and bus stations as well as places visited by elderly people.

For Rastovac, the main takeaway is that digital transport services must include—rather than replace—personal contact if they're to become more widely accessible.

Whether it's someone to teach bike riding or help on a journey, there's no way around the human element.

User views

Another research project—[TRIPS](#)—focused on improving transport access for disabled people.

The initiative, which wrapped up in January 2023 after three years, gave handicapped users of public transport a say over the design of services.

"We wanted to involve people as real partners, not solely as evaluators at the end of the process," said Dr. Kristina Andersen, who coordinated TRIPS and is an associate professor of industrial design at Eindhoven University of Technology in the Netherlands.

The project featured representatives from 10 European countries: Austria, Belgium, Bulgaria, Croatia, Germany, Ireland, Italy, the Netherlands, Portugal and Sweden.

As in DIGNITY, the researchers found themselves at the start setting aside preconceived notions to confront realities on the ground.

"Initially we had a certain set of ideas about what kinds of technologies would be useful," said Andersen. "Over the course of the project, we realized that other things might be more urgent."

For instance in Sofia, the capital of Bulgaria, [public buses](#) weren't accessible for the disabled.

The vehicles need to be capable of lowering themselves to ground level. The bus schedule needs to allow time for that maneuver. The ramp can't be too steep.

It takes only a small obstacle somewhere to make a whole [transport](#) system inaccessible.

"Bus stops seem like such a simple place—it is a parking spot with a sign," said Andersen. "But many things can go wrong."

Accurate info

The TRIPS team worked with six other cities: the capitals of Portugal, Croatia, Belgium and Sweden plus Bologna and Cagliari in Italy.

Once more, the researchers found that something very fundamental—accurate data—was crucial across the board.

"Every city had different challenges, but it became very clear that the most common request from users was for reliable information," said Andersen.

In response, TRIPS set up digital travel planners so [disabled people](#) could learn, for example, which pavement is more accessible, where the lift in a station is located or whether a particular journey faces temporary obstacles.

The project stands to benefit not only the 80 million Europeans who have a long-term disability but also other segments of the population, according to Andersen.

"It is also for people who are temporarily disabled, for people who have children, for people who carry heavy things and—quite simply—for us all as we'll all get old eventually," she said.

More information:

- [DIGNITY](#)
- [TRIPS](#)
- [EU transport research and innovation](#)

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