Transportation apps can help people with disabilities navigate public transit but accessibility lags behind

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Credit: AI-generated image (disclaimer)

Smartphone apps have become commonplace tools for travel and navigation. As technology becomes more integrated into transport networks, apps will continue to be indispensable. But many of those apps remain inaccessible to those with various disabilities.

Many people with disabilities rely on public transit as many do not have a driver's license. Planning trips, getting to and from transit stops successfully and navigating transit systems is important.

My research has shown that smartphone app technology can encourage inclusion by helping people with disabilities better navigate transport systems.

In the United States, 13 percent of the population lives with one or more types of disability. Developing apps and other mobility tools can increase their ability to access employment, education, health care and other services.

Apps and accessibility

My research, conducted in the U.S., found that one of the ways transportation-related general audience apps aim to address the travel needs of people with disabilities is by including accessibility features, such as text-to-voice conversion. These features increase ease of use for non-disabled people as well.

Despite the availability of technology, many apps remain inaccessible, including for cost and lack of mandatory requirements and regulations.

The cost factor

Transportation smartphone apps, which require the use of location-based, real-time information are complex and require more time and cost to develop. The way app development processes are currently set up, the cost of developing apps with accessibility service features is more expensive than those without such features.

The cost of developing an app depends on the quality of the app and the number of features it includes, with additional features resulting in higher costs. It could also take a long time depending on the complexity of the app.

While having additional features such as accessibility services can give apps the opportunity to reach more users, the cost can be a deterrent, especially for entities without the association with big companies such as Uber and Lyft.

There are various types of disabilities and corresponding needs. The inclusion of features that address multiple disabilities in one app might also add to the complexity and cost.

Recognizing the challenge posed by responding to multiple disability needs in advanced communications services and equipment, the U.S. Federal Communications Commission (FCC)—that implements and enforces communications law and regulations—states that "every feature and function of every device or service does not need to be accessible for every disability."

Operating system providers

Developers distribute apps on Google's Android and Apple's iOS operating systems via their app stores, Google Play and the App Store, respectively. Android and iOS provide accessibility guidelines, resources and codes for the developers.

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Apple and Google also provide built-in accessibility features such as text-to-voice conversion options—an app that offers a voice option for real-time transit information is accessible to a person with visual impairment.

While Apple has more accessible services than Google, Google makes clear that the company's built-in features do not meet all disability needs. Google encourages app developers to use its available technology to create additional accessibility features for their apps.

However, we found that many of the transportation-related smartphone apps that we reviewed in our study were without accessibility features. Part of the problem has to do with the fact these guidelines are suggestions, rather than mandatory requirements to which developers need to comply.

Regulating recent advancements

When the U.S congress passed the Americans with Disabilities Act (ADA) in 1990, it was meant to prohibit discrimination against people with disabilities in various areas including transportation, services and telecommunication. As it currently stands, the ADA does not specifically apply to recent technological advancements such as smartphone apps.

There is no specific regulation that pertains even to website content other than an application of "general nondiscrimination and effective communication provisions."

The U.S. Department of Justice encourages the use of technical standards such as the Web Content Accessibility Guidelines (WCAG) to make websites accessible. WCAG also lacks specific standards for smartphone apps, but it provides comprehensive guidance that does not set requirements on how to apply their existing website standards to smartphone apps.

WCAG makes clear three things: (1) Not all guidance applies to smartphones; (2) Informative guidance does not address all disability needs; and (3) Mobile devices have different accessibility challenges compared to other devices.

When it comes to information and communications technology, the FCC has a mandate to develop and implement regulations. Under its consumer guide, it outlines general accessibility requirements. One of the requirements states that, if achievable, manufacturers must make their hardware and software, including apps, accessible to people with disabilities.

While the FCC guide mentions apps, the conditional nature of the guide and the lack of specificity on what is achievable weakens the

requirement.

The future of accessibility

Whether due to the high cost, lack of operating system mandatory requirements, government regulations or specific technical standards, current conditions present a challenge to accessibility of apps.

As a result, the ability of people with disabilities to use apps for transportation is negatively affected. It is inevitable that disability-related regulations will catch up to app technology and the world of apps will move towards more specific accessibility requirements.

In the meantime, developers would benefit from using available resources provided by Apple and Google, and using WCAG guidance to make apps accessible. It may also give them the opportunity to contribute to making a more inclusive digital environment.

This may help developers avoid potential ADA-related lawsuits, fines and expensive accessibility retrofitting, which may end up being more expensive than the initial cost of adding accessibility features.

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https://techxplore.com/news/2023-07-apps-people-disabilities-transit-accessibility.html