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Modern Mobility:
Still Feeling the Pain
Instead of Enjoying the Gain?

By Uwe Jasnoch

Modern mobility is predominantly driven by two requirements: vehicles must be electric and sharable. You'll find both of those elements in today's growing e-bike and dockless e-scooter transportation trends.

The industry is experiencing double-digit growth; take a look at the increasing number of vehicles e-scooter companies are deploying.

- In 2018, the National Association of City Transportation Officials estimated there were more than 38.5 million trips by e-scooter in the U.S. alone.

- In 2019, Lime announced its scooters had reached 50 million trips since launching in mid-2017.

- In May of 2020, the UK ended its ban on shared e-scooters and is investing in e-scooter trails as part of $2.5 billion package to support "active travel" and outdoor transport.

- Washington D.C. has planned to allow 20,000 e-scooters to be deployed within the city, though the plan is currently on hold due to COVID-19.

These figures highlight the reality that this form of transportation isn't going away any time soon and, in fact, has become an important factor of inner-city mobility. It is assumed that the last mile in commercial transportation will be a green, will help alleviate traffic congestion, and will be individually tailored to the need of the user. That's the promise, and that's what municipalities expect to gain.

So, is this the "silver bullet" of modern mobility answering the quest for sustainable and carefree individual transportation? Maybe, but the actual reality of the situation often draws a different picture for city officials.

Hexagon's Geospatial division used a combination of open APIs from dockless scooter companies plus Hexagon's **Xalt** framework and **M.App Enterprise** to monitor e-scooter traffic and movement patterns in Washington D.C. And we observed some challenges and issues that many cities around the world are experiencing, including:

- E-scooters are rarely parked properly, making them a nuisance

- E-scooters often block sidewalks, doorways, fire zones, and access points for the disabled

- E-scooter companies don't seem to obey parking ordinances

- E-scooter companies seem to poorly track and manage their assets

- E-scooters could pose potential public health and safety risks due to lax enforcement

These growing pains are hindering the e-scooter boom in certain countries and regions. Because the industry is so new, municipalities struggle to regulate it and residents are hesitant to embrace it. Many don't see the value in this new form of mobility when it presents so many hassles and issues.

With limited resources, city administrators can only do so much to manage the proliferation of e-scooters and e-bikes. Human-intensive monitoring and enforcement is not a sustainable long-term solution. Instead, highly automated processes are needed to cope with the challenge. That's where Hexagon comes in. Using the same tools we configured to monitor e-scooters in Washington D.C., our system provides real-time and historic visualization and analysis of e-scooter usage.

The solution provides real-time situational awareness, analyzes mobility patterns, and features completely automated processes for tracking misplaced e-scooters. When a missing e-scooter is detected, its provider will receive an email or text message with its ID and coordinates, along with information about local regulations. The system continues to monitor the abandoned e-scooter and notes when it has been retrieved, and all these activities are protocolled and can be audited by city personnel.

Views of the monitoring solution in a mobile app and browser-based dashboard

Residents can even be part of the solution. A citizen can scan the QR code on an e-scooter into the system, which then checks the status of the vehicle. The resident will receive a notification with direct feedback regarding whether the e-scooter is parked in an acceptable location, if it is reserved, or if a company was instructed to remove it.

As far as multimodal mobility, the solution is capable of tracking and managing more than just e-scooters and e-bikes. It can be expanded to work with virtually all transportation modes. The key point will be the location analytics Hexagon specializes in, tracking where and when each type of vehicle is used. The more information citizens and governments have, and the more easily and seamlessly they can adopt these new forms of transportation, the more likely e-scooters and other new developments will gain widespread acceptance.

In summary: When new technologies and opportunities come with complications, Hexagon solutions help you enjoy the gain instead of feeling the pain!

WATCH THE WEBINAR: How to Manage & Monitor the E-scooters Boom