How have navigation apps changed the flow of traffic ?

Jake Albracht

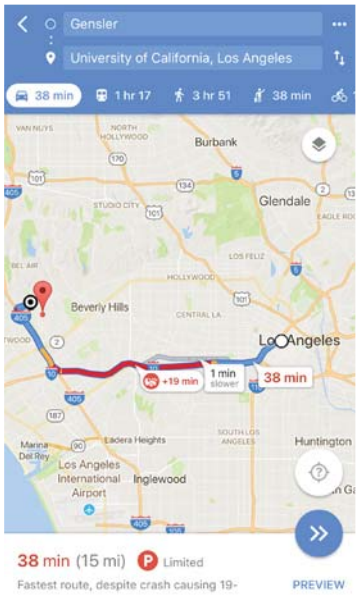
Navigation

Driving in Los Angeles requires a serious learning curve. The freeways are massive, the grid is a mess, and drivers are anything but courteous. Today it would be nearly impossible for a newcomer to travel from point A to point B without the help of a navigation app.

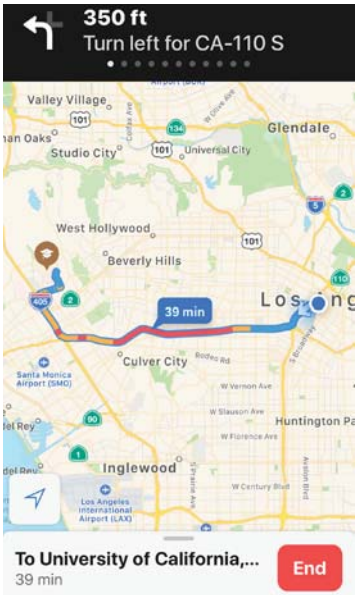
Map websites have been present for many years. When I was young I remember seeing printed directions from Mapquest; and before Mapquest, road atlases could commonly be found in a car's glove box. Today, rather than printing directions ahead of time, many cars come equipped with built-in navigation applications. Apps use turn-by-turn navigation to give both visual and verbal directions to the driver. Some apps even tell the driver which lane to be in – which is important when navigating some of LA's seven-lane freeways. The evolution of navigation technology has created an easier driver experience, but how has it impacted traffic patterns?

Waze Navigation

Google Maps



Apple Maps



Finding Shortcuts

Waze is an app that aims to ease congestion for drivers in busy cities. By creating a community of drivers, the app goes beyond navigation and predicts the fastest route to one's destination. The app has started to remove the blind side of driving by anticipating heavy traffic patterns and routing a person based on time to destination, rather than distance. The app not only helps drivers avoid heavily trafficked areas, but it also helps to disperse and ease traffic in congested locations. While Waze works to disperse traffic, the driver is ultimately in control and can choose his or her own route. Waze will adapt the route in response to human decisions.

Before apps, shortcuts were spread by word of mouth, but now anyone with access to the internet has knowledge of the same set of shortcuts. During rush hour, traffic maps of of Los Angeles show freeways lit up in red.. It makes sense to avoid the red by taking an alternate route. Shortcuts may cut commute time, but they are quickly creating secondary thoroughfare routes within cities. While Waze and similar apps have worked to alleviate congestion for drivers, the apps have caused new issues within cities. By rerouting drivers from main thoroughfares, smaller residential streets often see increased traffic. Commuters are often used to speed restrictions associated with freeways and large roads; as commuters begin to use side roads, they often do not adjust their speed accordingly. This has caused safety concern for pedestrians.

Google Map of Los Angeles during rush hour

Street Conditions

As navigation evolves, so to will the physical means of direction. In downtown Los Angeles crossing guards can be seen at most major intersections. Stop lights are present to direct pedestrian and traffic movement, so why are crossing guards necessary? With human navigation, errors can be made and people can ignore the rules. DTLA has attempted to intervene in those situations by putting an authority figure on the scene.

Residents of some newly trafficked areas have taken matters into their own hands. Waze relies on users to inform the app of poor road conditions. When a user reports an accident, the app will reroute others to avoid the congestion. This concept has allowed some residents to falsely report poor road conditions and, in turn, Waze has sent drivers on an alternate route. This method does not work long-term though, as the app will eventually connect the dots and recognize false claims.

Many cities have started to change infrastructure planning to adapt to these new navigation issues. By limiting left hand turns, creating one-way streets and building roundabouts, cities are able to take control traffic problems. Seattle has already implemented many features that prevent streets from becoming main thoroughfares. Many streets have been reconfigured as one-way roads, number of lanes have decreased and parking has been implemented on both sides. In an effort to protect pedestrians from vehicles the city has added green belts, pedestrian crossings and speed bumps. All of these efforts have helped to reduce traffic speeds and, in turn, navigation apps no longer use the roads as alternate thoroughfares.

Navigation apps are not all bad though. By collecting traffic data, the apps give city officials information on road conditions. When Waze users report poor road conditions, they are participating in a form of citizen journalism. The apps illustrate poor road conditions and bring attention to areas that need to be repaired.

The Future of Navigation

Autonomous vehicles and driverless technologies are on the verge of becoming commonplace. With these new technologies, human drivers will no longer be in charge of route decisions.
Autonomous cars have the potential to predict all sorts of traffic phenomenon in the city. If there is a Dodger's Game on a Thursday evening, the car will respond by avoiding the 110 at all costs. How will autonomous transportation impact the way in which people navigate cities?

https://www.washingtonpost.com/local/traffic-weary-homeowners-and-waze-are-at-war-again-guess-whos-winning/2016/06/05/c466df46-299d-11e6-b989-4e5479715b54_story.html?utm_term=.32c5c5401cd5
https://www.usatoday.com/story/tech/news/2017/03/06/mapping-software-routing-waze-google-traffic-calming-algorithmsi/98588980/
http://www.mensjournal.com/gear/cars/waze-the-app-that-changed-driving-20160208