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What is Geofencing?

By Matt D'Angelo

Smartphones never leave our sides, and maybe they shouldn't – they've made life vastly more convenient. But they've also begun to act as beacons, where processes like geofencing send location-based data to companies looking to leverage information on segments of users.

"We believe that understanding real-world consumer behavior is critical in brands being able to engage consumers in a timely, relevant way," said Gil Larsen, vice president of Americas at [Blis](#), a marketing technology company that offers location-based data services. "The more you know about a consumer, based on what they're doing in the real world, the more relevant you can make the advertisement. And the more relevant the messaging, the more likely it is for that consumer to engage."



Geofencing allows businesses to set up specific zones to gather data on users. It involves dropping points on a map to form a shape – usually a square, polygon or circle – that designates a specific zone. When a user, whether that be a customer, truck driver or drone, enters that area, a business receives information on that user; even if it's only that they've arrived.

The idea of businesses, or employers, "tracking" relevant users may sound like violation of privacy, but all this technology operates within the confines of modern privacy laws. Geofencing and location-based data gathering is a tremendously powerful technology that can be leveraged by businesses of all sizes.

How does it work?

Geofencing is a technology that combines device-level IP address interaction with GPS data and cellular network data. Marcus Cudd is the president and director of digital marketing for [SearchworxX](#), a company that specializes in digital marketing and offers location-based advertising services. He said that geofencing and location-based advertising is supported by the way devices interact with the IP addresses around it.

Our devices have device addresses, and when they interact with various routers or other hardline connections, our device address is registered at that IP address and vice versa. This, combined with our cellular devices pinging cellphone towers every few minutes, allows data specialists to locate a device and thus a user or consumer.

"That cellphone is going to be pinging the tower, and when it pings the tower, the networks are able to pick up where that person is located within that polygon and that person is essentially added to an audience that you can target at any point in time," Cudd said.

There are a few kinds of geofencing, and details on how all the technology works is highly technical and complicated. As a business owner, it's important to understand that, at its base, geofencing involves interaction between devices and IP addresses with cellular and GPS data included.

Location-based advertising

Geofencing has excelled in the location-based advertising space, and there are a host of applications. Cudd said, for example, that businesses can set up geofences around a competitor and be alerted when a customer enters that area. Depending on the specific business case, you send a push notification with a coupon or an advertisement for your service in their phone's web browser.

This kind of active geofencing provides businesses with another route to connect with customers. The power behind this technology, however, lies in data gathering: Instead of bombarding users with push notifications or text messages when they enter a place, geofences can be set up to better understand consumer behavior. Larsen provided the example of a person shopping for a car.

A car is a big purchase that requires a lot of thought and attention. A banner ad or push notification while a customer is in a store may not make a lasting impression. Larsen said instead it may be a good strategy to wait a few days until that customer is at home and serve an ad on their smartphone, tablet or home computer.

"We want to be able to target them, not only to identify who the right consumer is based on their device pattern, but what's the right moment and what's the right device to reach them," he said.

Cudd elaborated about this potential. SearchworxX has clients in higher education that like to market their graduate programs to undergraduates at "feeder schools," or popular schools that produce students qualified for a particular graduate program at another university. Cudd said that some schools elect to add users to an audience bank and market advertisements later.

"You can start showing them ads when they're not in school, you can start showing them ads when they're in school ... They don't have to necessarily be in the polygon to start seeing your ads," he said.

Other industries

Geofencing has appeared in other sectors as well. Some construction fleets that use GPS fleet tracking software, for example, can set up a geofence around a worksite and get an alert when a driver enters the worksite. This can help with compliance standards and ensure employee honesty about job length.

In addition, geofencing has emerged as a unique software element to drone businesses. [DroneBase](#), a California-based drone images company that supports professional worksite surveying and photographing, uses geofencing to keep its drones in a worksite when they're on autopilot.

"The geofence, in essence, is the boundary of the area it's going to fly [in], and the drone will programmatically autopilot flying back and forth around it," said Nick Osgood, head of operations for DroneBase. Osgood said that the FAA and other regulatory agencies use geofences to keep drones and other aircraft out of important areas, like airports or stadiums.

The autopilot feature that DroneBase offers is one that shows the power geofencing provides outside of the location-based marketing industry.

Privacy



Beth Fulkerson, a partner at [Culhane Meadows PLLC](#) who specializes in internet advertising, copyright, and trademark law, said it's important for businesses to respect consumers' privacy when using this technology. She said businesses should always obtain user permission before collecting data and should only collect data that's needed

"The basic rule is that companies should be very careful to always consider privacy when they design any kind of product or service – the FTC now requires that," she said. "The two concepts now are consent plus transparency ... You need to get affirmative express consent before you take somebody's location information."

This comes in the form of a user opting in to GPS services on your app, or opting in to location-based services in their smartphone's settings. Users can limit location-based advertising data, which is an option that can also be toggled in the settings panel.

Larsen made it clear that the location-based advertising his company does complies with privacy laws. This is because the companies are operating with data and information delivered on a device level – they don't gather data directly from individual users, instead targeting devices in market segments and advertising to those whole segments. It's easier to understand geofencing when you view it from a one-on-one marketing experience, but businesses actually market to whole groups of users and do not directly target one person or one device.

Bottom line

Depending on the type of business you own, geofencing may be a technology worth considering. There are some current applications in advertising and drone videography, but there are several others as well. If you're interested in adding geofencing to your marketing strategy, it's important to approach it from the right perspective.

Cudd said businesses should consider outsourcing their marketing strategy and operations to a third-party digital marketer to ensure that the best data is being analyzed and leveraged by professionals. "The reason you really need an agency who does this stuff professionally is because they're going to be using this stuff every day, they understand other clients, and they understand how to track it and give you the result," he said.

Larsen said that businesses can benefit from a strategic partnership, but Blis also provides a platform for business owners to collect and analyze data on their own. He said that building this type of technology into an overall marketing strategy can help pinpoint the right customers with relevant ads.

"It's just reinforcing what you're currently doing, but it's doing it in a more targeted way and speaking to people in a more relevant way on their most personal device, which is typically their smartphone or a tablet," he said.

One thing to watch out for, regardless if you use geofencing or location-based technology, is the prevalence of bad data in the market – especially in the marketing and advertising industries. Larsen said that business owners should be wary of all data, and should talk with agencies and vendors about how they scrub their data to make sure it's accurate.

"There's just so much inaccurate data floating around being used out there," he said. "For us, it's [good data] the most important thing because if you don't start with the most accurate data, then the rest of the campaign isn't going to perform well either."

About the Author: Matt D'Angelo



Matt D'Angelo is a B2B Tech Staff Writer based in New York City. After graduating from James Madison University with a degree in Journalism, Matt gained experience as a copy editor and writer for newspapers and various online publications. Matt joined the Purch team in 2017 and covers technology for Business.com and Business News Daily.

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