Google's maps go indoors with new mobile feature

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A bicyclist rides by Google headquarters in Mountain View, California in 2010. Google's free online mapping service on Tuesday began helping people navigate inside airports, transit centers, and major shops in the United States and Japan.

Google's next frontier in digital mapping will span the world's shopping malls and airports.

An upgrade of Google's mobile mapping service released Tuesday includes directions within stores, malls, airports and transit centers in the U.S. and Japan.

The initial index only covers a small fraction of the great indoors, but Google Inc. is hoping that will change as more owners and operators of shopping and transportation hubs submit their indoor floor plans so they can be mapped.

For now, Google's indoor maps can only be viewed on smartphones and tablet computers that run on the company's Android software. That's still a potentially huge audience because more than 550,000 Android-powered devices are activated each day and the mobile maps will work on versions of Android released as far back as 2009.

The free indoor mapping tool represents Google's latest attempt to deepen people's attachment to their Android phones so the company has more opportunities to sell ads pitching products and services to people on the go. Helping people navigate their way around malls and stores also complements Google's effort to turn the Android phones into digital wallets that replace cash and conventional credit cards.

Google wouldn't say why the feature would work only on Android devices. The company also wouldn't say whether it eventually plans to offer the indoor maps on other products, such as Apple Inc.'s popular iPhone and iPad, or whether the feature will eventually be available on desktop and laptop computers, too.

The company's online maps already provide detailed driving, walking and even biking directions on city streets and highways throughout the world. In some instances, Google has supplemented its digital maps with photographs of the charted area - a feature that has triggered privacy complaints and, in some countries, regulatory crackdowns.

The indoor maps are designed to reduce the disorientation that frequently occurs in sprawling stores and other large complexes.

If the floor plan is included in Google's index, the software pinpoints a user's location with a blue dot. The user can then figure out where the nearest bathroom is in a mall or find an airport's gate for a departing flight. The software is programmed to automatically change to a different floor in a building when the user does.

"It's like we have taken the map that you see on a kiosk at a store or mall and put it on your phone," said Steve Lee, a product management director for Google.

The tracking technology plots a user's location based on cell towers, GPS and publicly broadcast Wi-Fi signals. That's similar to what Google already does to identify where users are when they're viewing street maps. Google's engineers refined the system for the indoor maps so users can be shadowed with even more precision.

The indoor directions include two retailers known for their labyrinth stores - Home Depot and Ikea. Macy's and Bloomingdales also have shared the floor plans of a few of their biggest stores.

The Mall of America in Bloomington, Minn., which is the size of seven Yankee Stadiums, is already in Google's database, as are smaller malls in Illinois, Virginia and southern California. There are also directions for 18 U.S. airports, including those in Chicago, Houston, Atlanta, San Francisco and Las Vegas.