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BLUETOOTH Technology @ University
Game On

By David Geer

Thanks to a new application for the iPhone, some lucky soccer fans are sharing score predictions across stadiums, competing, chatting and swapping photos as the action happens, free of charge.

Developed by Dr. Matthew Chalmers and a team of researchers at the University of Glasgow, the Predictor app enables friends and strangers to compete by guessing soccer scores. "Fans gain points for predicting accurately, and their points are shown in score tables in the application interface," Chalmers says.

The scientists are observing a small group of users selected to enjoy Predictor at Scottish Premier League matches, which are held at the home stadium of the Glasgow Rangers and elsewhere. To play, a fan scans for nearby phones that are running the application and invites a user to play. "If the second user says OK, they enter their guesses, which are swapped between phones," Chalmers says.

"An iPhone can't initiate an ad hoc Wi-Fi network, but it can start an ad hoc Bluetooth network." — Dr. Matthew Chalmers, University of Glasgow, developer of the Predictor app

The application keeps track of soccer match scoreboards, fans' past score predictions and other competitive information. Two fans can predict scores across different games in a head-to-head match-up, or several fans can guess scores among one another.

Two fans can connect phone-to-phone within the normal Bluetooth wireless range of up to 10 meters. In lab versions of the system, each fan can connect phone-to-phone to seven others, and indirectly to other fans, forming an ad hoc network that allows users to share score predictions around the entire stadium. "People in different parts of a stadium (also can) share photos of match highlights and chat about the game while predicting scores," Chalmers explains. The app employs additional security and privacy measures to protect users' phones and information.

Why use Bluetooth technology to interact instead of traditional voice calls or data transmissions? "It is difficult to get a mobile phone signal in a crowded stadium where there is a lot of interference," says Chalmers, who also notes that phone data charges can be an issue for local use and are often prohibitive when one travels abroad.

From Chalmers' perspective, Bluetooth technology was the only practical choice to enable iPhones to connect directly, bypassing commercial phone networks and avoiding charges while releasing the application's full potential. "An iPhone can't initiate an ad

hoc Wi-Fi network, but it can start an ad hoc Bluetooth network,” he explains. Bluetooth technology also uses less power than other wireless technologies, which is important for preserving battery life.

Immediacy is crucial to the application. Fans’ conversations and interaction must keep pace with the game. With Bluetooth technology, everything can happen in real time, and, according to Chalmers, the data transmissions are more reliable than they would be crossing a mobile phone network.

Chalmers, Scott Sherwood (the app’s primary programmer) and the rest of the team initiated Predictor development in November 2009. They have since worked on new versions tailored to the FIFA World Cup and to major sports events sponsored by Turner Broadcasting System Inc. The researchers plan to make Predictor freely available from Apple’s App Store this summer.