

# Social-Mobile Applications

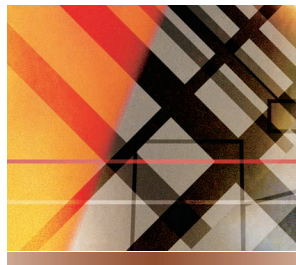
Ian Smith, Intel Research Seattle

**M**obile communications devices and applications are primarily designed to increase efficiency and productivity for professionals on the go. However, users invariably appropriate such technology to meet their social needs as well. For many people, particularly younger users, BlackBerry devices, Hiptops, and other handhelds primarily have a social function.

A few small companies are beginning to exploit the growing demand for social-mobile applications, also known as mobile social-software services.

One of the most popular MoSoSos applications is *dodgeball* ([www.dodgeball.com](http://www.dodgeball.com)), a New York-based social-mobile network with thousands of users in 22 cities across the US. After a registered user “checks in,” friends receive a text message indicating the check-in location and time in case they want to get together. The service will also notify a user if a friend, friend of a friend, or “crush” is within 10 blocks. In addition, *dodgeball* users also can broadcast messages, or “shout,” to those in their network.

*Plazes* ([www.plazes.com](http://www.plazes.com)) is a location-aware interaction system that helps mobile users hook up with friends or other like-minded people anywhere on the globe. *Jambo Networks* ([www.jambo.net/web-site/Home.html](http://www.jambo.net/web-site/Home.html)) and



**For a growing number of mobile users, handhelds primarily have a social function.**

uses Wi-Fi-enabled laptops, cell phones, and PDAs to match people within walking distance who have similar interests and would like to meet face to face. In the UK, *playtxt* ([www.playtxt.net](http://www.playtxt.net)) helps mobile users locate nearby friends, friends of mutual acquaintances, or even strangers with matching preferences.

## RENO

During the past year, Intel Research Seattle has designed, studied, and built several applications to support a specific type of social interaction, the *rendezvous*, in which two or more people meet at the same location. Intel researchers chose this scenario for their initial test deployments because many people already use mobile devices to coordinate such meetings—for example, to notify others that they’re running late.

With the *Reno* mobile phone application users can query other users about their location and disclose their own, either in response to another

query or unprompted. Unlike other MoSoSos applications that support *rendezvous*, *Reno* is location aware. For example, *dodgeball* and *playtxt* require the user to manually type in an identifier—a place name or postal code, respectively—and send this data to a central server that performs the location calculation.

As Figure 1 shows, *Reno* calculates the device’s approximate location locally using Global System for Mobile Communications (GSM) technology and then presents the user with a short list of nearby locations sorted by proximity. The user then selects the most

appropriate place from the list, an easier and significantly faster process than typing text.

In addition to location awareness, *Reno* incorporates three design factors that are critical to the success of social-mobile applications: privacy, practicality, and specific value.

## Privacy

MoSoSos applications must give users sufficient control of their personal data or risk being rejected as agents of Big Brother. Therefore, Intel researchers incorporated a number of privacy features into *Reno* up front, including user control of the disclosure of location information.

*Reno*’s location algorithm binds specific features of the wireless GSM environment that the mobile device can sense to simple data strings the user chooses; it uses no other strings to reveal location information. Users need not label any place they regard as private and can be confident that the application will not disclose it to others.

In addition, Reno doesn't employ a tracking system that would enable others to ascertain a user's location without that person's knowledge. Rather, users disclose their location at a time they choose. For example, if Alice wants to know where Bob is, she must first request his location, then Bob must take some action to reveal it. Further, Bob only needs to choose a nearby location that he is comfortable with from the list that Reno presents.

### Practicality

People often use mobile devices on the spur of the moment—for example, between pressing work engagements or while in transit. Social-mobile applications must therefore be simple to use and quick to operate or people will choose another form of communication, such as making a phone call.

Reno's design exploits the traditional "inbox" metaphor to let people quickly glance at requests for their location and disclose it to others. In a small deployment in the Seattle area, several test users commented that sending a Reno message was much easier than sending a traditional SMS message or making a call. Message recipients also found Reno less intrusive than a phone call for coordinating a rendezvous.

### Specific value

A social-mobile application must offer some key benefit to be "sticky"—that is, convince users to repeatedly choose it over other communication techniques.

To test one common rendezvous scenario, coordinating family tasks with teenagers, Intel researchers targeted subjects with children who in most cases were not old enough to drive. The families used Reno an average of 2.4 times per day per user, which was encouraging given the inherent difficulty in using a new application on unfamiliar mobile phones. If it's possible to sustain or slightly exceed this level of use in future deployments, Reno has the potential to become the rendezvous tool of choice.

### BEYOND RENO

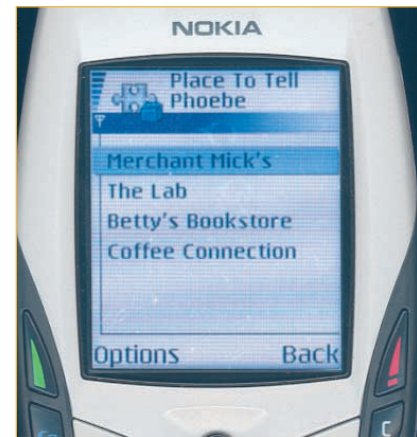
Commercial and academic researchers are exploring numerous exciting opportunities for using MoSoSos applications. These include new kinds of dating applications, sales-force automation, finding a restaurant recommended by friends, and monitoring human-rights workers.

Since the initial deployment of Reno in 2004, Intel researchers have redesigned the rendezvous application to support more complex coordination scenarios. Like its predecessor, this application doesn't enable users to surreptitiously track others. Rather, the device display shows a map of the user's region with icons representing the most recent information that others have disclosed about themselves. For example, someone who is late to a meeting might elect to continually update his location so others can estimate his time of arrival.

Intel researchers are also prototyping Houston, an application designed to investigate the utility of mobile social-support networks. Houston is oriented toward physical fitness and weight management, but the general principles apply to many other areas where friends share experiences and get mutual support.

With Houston, group members share step counts from their pedometers automatically via mobile phones. Users control what to disclose about themselves and can view what others choose to reveal—for example, "Joe made it to 10,000 steps today!" The goal is to determine whether this approach changes behavior more effectively than traditional social-support networks such as commercial weight-management groups or at least offers similar support at a lower cost in time and money.

Following the PC in the 1980s and the World Wide Web in the 1990s, the mobile device is emerging as the next general-purpose computing platform, most likely in a form similar to today's cell phone.



**Figure 1. Social-mobile application. Reno calculates the user's location and sorts nearby places by proximity.**

Mobile phone designers weren't as agnostic as their predecessors; they had at least one specific application in mind—namely, mobile telephony. Nevertheless, within the next decade numerous highly specialized classes of applications will emerge for the mobile platform. Intel researchers expect social-mobile applications to be one of these classes. ■

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