

From the Editor in Chief ...



The Invisible Wireless Web

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Who hasn't heard the hype with the wireless Web? Even a brief scan of the popular media shows a remarkable interest in using a phone or PDA to read e-mail on the road, send files to the office, check the weather, get stock quotes, find directions to the nearest restaurant, buy flowers, even teleconference — to name but a few of the possibilities. You may be on the road with a phone that has a three-line screen, but by golly there is no reason not to use your copious free time to edit your financial projections!

I find two things odd about these applications: They are essentially knock-offs of what we might do on the wireline Internet, and they put the Web smack in front of the user. But more on that in a moment.

Small Is Big

The wireless Web can mean at least two different things, depending on the kinds of devices you use. When you use a laptop with a wireless modem, you have at hand practically all of the computing power and user interface capabilities of a desktop, and can easily run the same applications. If you prefer instead to use a smaller device or appliance — a phone, PDA, or suchlike — the device is more portable but correspondingly weaker.

Enabling the Web on appliances has caught the popular imagination. And for good reason. Developers see a worldwide market for wireless phones that exceeds 400 million, where more cell phones are sold in a month than laptops sell in a year. Likewise, phones hold sway among the appliances, selling more every two weeks than PDAs and pagers sell in a year. For this reason, I will confine my remarks to phones.

Hiding the Web

While a lot of technical attention goes to the how of enabling wireless Web access, the real ques-

tion is why. Why does anyone care to access the Web from a cellular phone? It certainly isn't for surfing the Web — at least not in any typical sense, where the surfing is definitely better from a desktop.

On wireless appliances, more so than on wireline computers, the Web has to be invisible. It is thus likely to be heavily application-specific and hidden within the logic of the given applications. This is simply because the device is so small that the overhead of making the user deal with a general-purpose interface will exceed the benefits the typical user can derive from the interaction. Of course, the basic technology will remain generic and reusable, but it will be encapsulated in specific applications.

When you are trying to develop an application with high uptake, you have to exploit the strengths of the target platform. The ability to communicate with other human beings is something you need wherever you are; it is also something that a phone is designed for. Therefore, it makes sense that applications supporting human communication will be prominent among the most successful applications for phones.

By human communication I mean communication of which the user is aware and which helps the user stay in touch with other humans. Machine communication, of course, must underlie most of what the device does, but it is merely a means to an end. For pushing the average stock quote or advertisement, communication occurs at the machine level, but usually not at the human level in that the human doesn't have to be aware of the message or respond to it, and may not want to be made aware of it.

For machine communication to be important, it must do something special that fits the user's needs. For example, it could deliver a notification from a bank about an important deposit. Again, because of the obvious limitations of the user interface, there will often be a lot of machine

communication for a tiny amount of meaningful information or for a brief but effective human communication.

Communication and Content

This point is different from, though related to, Andrew Odlyzko's argument in "Content Is Not King" (published in the February 2001 issue of the online Internet journal *First Monday* (http://www.firstmonday.dk/issues/issue6_2/)). A mathematician and well-known authority on the economics of the Internet, Odlyzko argues that point-to-point communication provides a much larger chunk of (wireless and wireline) network operators' revenues than content provides.

However, Odlyzko considers only broadcast content, not information services or e-commerce. Broadcast content (like streamed movies) is a clear case of a lot of machine communication not tailored to the user's present needs: only a few people will go out of their way to watch a movie on a phone. In my view, most information services and e-commerce – while more important in the appliance domain than broadcast content – would still lose out to human communication.

This is because watching movies or getting stock quote pings, like surfing the Web, are applications that don't embed naturally into the lives of most users. In most situations, the user would be made painfully aware of the activity and of the device and network limitations. Given a choice, the user would no doubt prefer an alternative, say a desktop, for those applications. In fact, I would claim that any application where the Web is visible will always suffer this fate.

And the best invisible applications for a phone will enhance the human communication that users seek from a phone. The wireless Web would be the most glorious when it is not seen at all. ☐

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