

TELECOMMUNICATIONS

Here Comes 3G. Really.

'Third-generation' cellular service is finally available in the U.S.—and spreading

By **JESSE DRUCKER**

AFTER A LULL, 3G is finally arriving in the U.S.

A little over a year ago, the future of so-called third-generation cellular services appeared in doubt. The services, which enable users to tap the Internet via cellular networks at speeds comparable to wired Web connections, were available in just a few markets as carriers were under pressure from Wall Street to cut capital spending.

Cellphone carriers had already spent billions accommodating more users with networks that allowed higher-speed data services but were still a far cry from what many considered a satisfying experience.

Now 3G services are beginning to gain a toehold in some large cities and are expected to be even more widely available over the next year. Verizon Wireless offers 3G in 32 cities—including New York, Los Angeles, Dallas, Chicago and Atlanta—covering about 75 million people, or about a quarter of the U.S. population. Sprint Corp. plans to make 3G available to about 129 million people in 39 greater metropolitan areas by mid-2005, and across its entire network by early 2006.

As 3G spreads, it will make the Internet available virtually anywhere you can get a cellphone signal, though for now it is aimed mainly at mobile-computer users.

As smaller devices become available with Web-browsing capabilities, 3G could change the way people use the Internet, just as cellphones changed the way people make phone calls: Web access will come to be expected anytime and anywhere.

Inspired by that vision, the European cellphone industry has invested more than \$100 billion (€76 billion) in 3G li-

censes and networks.

The first 3G services became available in the U.K. and Italy as early as March 2003, thanks to Hutchison Whampoa Ltd., a Hong Kong-based conglomerate. But Hutchison has mainly focused on using the technology to offer low-priced voice calls and video downloads of soccer action and music videos, rather than Internet access for laptop users.

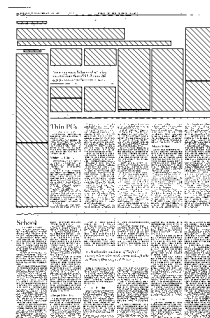
Hutchison's services suffered from a string of technical glitches in 2003 and Europe's biggest cellphone service providers waited until 2004 before they dipped a toe in the water. Like their U.S. counterparts, they began by offering laptop Internet access aimed at business customers, before rolling out mass-market 3G services.

Late last year, Vodafone Group PLC, the region's largest service provider, launched video calling, music downloads and other 3G services for cellphone users in 13 countries. Vodafone, which says its 3G network provides more than 60% population coverage in the U.K., Italy

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and other major European markets, is aiming to have 10 million 3G customers in Japan and Europe by the end of March 2006.

To be sure, 3G is still not an entirely satisfying experience. As virtually every cellular user can attest, dead zones and dropped calls are still major aggravations, and browsing the Web wirelessly promises to offer similar frustrations. Plus, while the speeds are faster than dial-up, they can still be maddeningly slow for users accustomed to T-1 or cable-modem connections.



Hello, EV-DO

Nor is anyone predicting that 3G will completely replace Wi-Fi, the networks millions currently use to access the Web wirelessly at home, in hotel lobbies, airports and coffee shops. Wi-Fi offers much faster speeds than 3G, but generally at a range of only about 100 meters.

Because Wi-Fi equipment is so cheap, many cities and towns in the U.S. are deploying Wi-Fi to cover entire neighborhoods, offering inexpensive, or in some cases free, wireless access to the Web. Similarly, big phone companies see continuing to offer Wi-Fi "hot spots" as an easy way to earn extra revenue. Some also are betting that many customers will continue using Wi-Fi rather than pay the high monthly fees of 3G.

Verizon Wireless, the No. 2 U.S. cellular provider, says it expects to double the area of its 3G coverage by the end of this year. So far, the company says, roughly 70,000 people have signed up for the service, which is based on a technology called EV-DO and is accessible currently only by inserting a special card into a laptop.

EV-DO offers transmission speeds averaging 300 to 500 kilobits per second—at its best, that's nearly comparable to the speed of connections using digital subscriber lines.

EV-DO-ready devices also will work on Verizon Wireless's more ubiquitous 1x network, but at much slower speeds—similar to that of a dial-up connection. Verizon Wireless is a joint venture of **Verizon Communications Inc.**, New York, and **Vodafone**, based in Newbury, England.

One drawback to using EV-DO: It's not compatible with the wireless technology used in Europe. Verizon Wireless plans to introduce software and another laptop card to provide access while a user is outside the U.S.; additional roaming fees will apply. The carrier is also exploring a single card that would use both EV-DO and a technology called UMTS, or universal mobile telecommunications service, which is compatible with the dominant global cellular standard, GSM.

EV-DO will spread farther as Sprint, the No. 3 U.S. carrier, starts rolling it out during 2005. Sprint currently offers a slower service called Vision to about

5.6 million subscribers, but the company plans to offer EV-DO to about 129 million people by the middle of this year, and across the Sprint network by early 2006. (That won't include the 20% of Sprint's coverage area served by its affiliates.)

Currently, Sprint and Verizon Wireless will charge \$80 a month for unlimited Web access using the EV-DO laptop card. Verizon plans to start early this year offering cellphones with access to the higher-speed services for \$15 a month. Both of those data-plan fees are in addition to any calling plan that a subscriber has. On Feb. 1, Verizon Wireless will launch a consumer-oriented service offering video, music and games over the new network tailored to mobile devices.

Another 3G network, by Cingular Wireless, is currently offered in only six cities, including San Francisco, Detroit, Phoenix and Seattle.

Down the Road

But Cingular expects to have most major markets covered by the end of 2006. And because the network is UMTS-based, U.S. subscribers should be able to use their equipment overseas, provided Cingular signs international roaming agreements. The Atlanta-based carrier, the No. 1 cellphone operator in the U.S., is a joint venture of **SBC Communications Inc.** and **BellSouth Corp.**

Nextel Communications Inc., which plans to merge with Sprint, has a 3G technology called Flash-OFDM that it has made available in North Carolina. But with the merger now in the works, Nextel is unlikely to continue expanding that service. The Reston, Virginia, company has said that it plans to eventually use Sprint's CDMA technology.

In addition to planning for a nationwide 3G network, the combined Sprint-Nextel also is considering developing a system that uses a wireless technology called WiMax, which is similar to Wi-Fi but has a range of several kilometers and is faster than 3G. Sprint and Nextel own spectrum able to carry WiMax signals, but the technology hasn't been standardized and deployment is likely many years away.

Finally, T-Mobile USA Inc., a unit of **Deutsche Telekom AG**, continues to rely solely on Wi-Fi for high-speed data. The company has deployed that technology in more than 5,000 locations, mostly Star-

bucks coffee shops and airport lounges.

Chief Executive Robert Dotson recently said the carrier has no immediate plans to offer higher-speed data access anywhere on its current cellular network, and doesn't see deploying 3G services for at least two years.

While other carriers are rushing ahead, a spokesman adds, T-Mobile takes the position that "3G technologies are still relatively immature."

For now, the carrier is upgrading its cellular network to a technology called EDGE, which provides wireless Web access, but at speeds only a little faster than dial-up. ■■■

The European cellphone industry has invested more than €76 billion in 3G licenses and networks in recent years.