

# WIRELESS INTERNET IN JAPAN OFFERS LOCALIZED SERVICES

*Web-enabled cellular phones rival PCs in popularity and provide unique applications*

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The wireless Web continues the celebrity lifecycle, going from underdog to international darling to whipping boy of the global press. You can't believe all the industry hype, but you'd better not believe all the critics, either. Although it will be years before wireless Internet services attain the same level of popularity in the United States that they enjoy in European and Asian markets, especially Japan, it would be a mistake to assume that Americans will never use these services in significant numbers.

*Japan is the global imagination's default setting for the future. The Japanese seem to the rest of us to live several measurable clicks down the time line. If you believe, as I do, that all cultural change is essentially technologically driven, you pay attention to the Japanese.—William Gibson*

## FIRST, WE'LL TAKE JAPAN

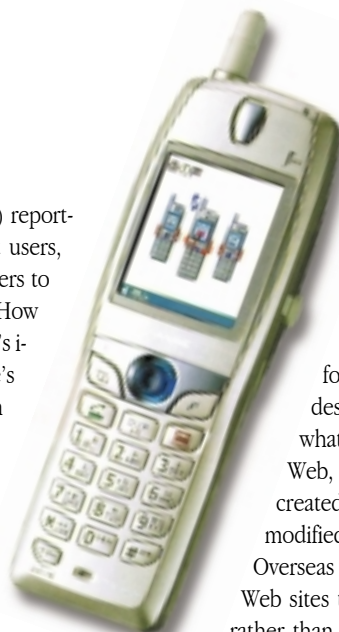
Internet-enabled cellular telephones have conquered Japan. As of May 2001, 36.9 million Japanese cellular subscribers could access the Internet from their handsets. This represents well over half of Japan's 62 million cellular users and more than one-fourth of the nation's total population. Growth remains strong: in May 2001 alone, 1.7 million new users signed up. No consumer technology — neither game consoles nor microwave ovens nor fax machines — has ever been adopted so quickly. In fact, the Internet-enabled cellular handset is poised to supplant the PC as the most widely used Internet access device in Japan. An April 2001 study by Japan's Ministry of Public Management, Home Affairs, Posts and Telecommunications (would the

acronym for that be MOPMHAPT?) reported 37.2 million fixed-line Internet users, compared to 34.5 million subscribers to Internet-enabled cellular services. How did these services — NTT DoCoMo's i-mode, KDDI's EZweb and J-Phone's J-sky — become so popular in Japan, and what are the prospects for similar services in the United States?

## WIRED VS. WIRELESS: DISPARATE ORIGINS

Modern computers and the Internet were invented in the United States and have remained US-centric ever since. While mainstream programming languages and scripts can be used to produce multilingual applications and Web sites, the programming languages themselves remain in English. We know that the dominant position that the English language holds on the Internet is loosening, but it will forever be the founding and default language of personal computing and the Internet. Call it first mover advantage.

The wireless Internet is new territory. It was not invented in, nor is it native to, any one country — or even any single region, for that matter. And the United States holds a decidedly non-dominant position. In fact, in an odd turning of the tables, NTT DoCoMo's i-mode handsets sometimes have trouble displaying Western languages properly, with some letters getting cut off completely. This is a relatively minor issue, but the point is that the wireless Internet wasn't born in the United States.



MADE IN (INSERT  
COUNTRY NAME HERE)

Wireless customers in each region of the world are, for the most part, enjoying services designed specifically for them. Much of what is out there on the World Wide Web, particularly commercial fare, was created by and for Americans and crudely modified, if at all, for use in other markets. Overseas users are often forced to select the Web sites they use for lack of anything better rather than because they are exactly what they need. Even homegrown offerings are often thinly veiled knockoffs of things that are perceived to have worked in the United States. This is not the case in the world of wireless. One need only look to Japan for more examples of this than we could begin to list here.

## HOW MUCH DO I OWE?

One of the most popular i-mode applications shortly after i-mode was launched was called *Warikan-kun*, which loosely translates as "Little Mr. Dutch Treat." As the name suggests, *Warikan-kun* is an i-mode service which can be called up to assist a group of people in fairly splitting a dinner bill — or any other bill, for that matter. This is important in Japan where it is not simply a matter of each guest paying for his or her own order, or even dividing the total by the number of people present. Managers are assumed to make more money and therefore expected to pay a higher percentage of the bill. People who arrive late have likely had less

time to indulge and thus pay less. *Warikan-kun* handles all of this effortlessly. But even though it's a "Why didn't I think of that?" application for Japan, *Warikan-kun* would find far fewer users in the United States, where diners in groups tend to be determined to pay exactly what they owe — no more, no less.

### Wow, This Really Works!

On the other hand, some applications seem eminently practical, even to a skeptical US eye. For instance, last year, I flew from Portland to New York to meet a colleague who was traveling from Japan. Upon checking in at Narita airport in Tokyo, my colleague learned that his flight was delayed an hour. He immediately sent me an e-mail from his i-mode handset to let me know to meet him an hour later than planned. Then, realizing he wouldn't return to Japan until after his rent was due, he wired the payment from his bank account using the same handset. Not bad. And that was eighteen months ago!

Most successful i-mode applications — even the disparate examples above — have one thing in common: they were designed with a clear understanding of users' needs. For this, users can thank Mari Matsunaga, a former publishing executive and the single person most responsible for shaping the i-mode service and articulating its focus on delivering cheap, timesaving services to its users. When Matsunaga came to DoCoMo to design the i-mode service offering, she had no technical or telecommunications background. This proved to be an advantage: she was able to help DoCoMo target the average consumer for whom accessing the Internet from a personal computer is too complex and intimidating.

Matsunaga's experience at Recruit Co. Ltd. was also valuable. Recruit is a publisher best known for its magazines consisting mainly of classified ads. Representative offerings include used cars for sale and listings of vacant apartments. While working there, Matsunaga developed a clear understanding of the type of information for which Japanese consumers are willing to pay and the appropriate price point. It is no accident that the maximum fee of 300 yen (about US\$2.44) for i-mode content is about the same as the cover price of Recruit's magazines: this is

## How Is Wireless Most Used in Japan?

Entertainment	This area is growing especially rapidly, fueled by off-line companies — especially video game companies with existing game content and firms that own popular media properties — that see wireless as a lucrative channel to leverage existing assets. Offerings include applications such as downloadable ringer melodies, screen saver and wallpaper images, fortune telling and quiz games.
Communication	The king of communication applications is e-mail, the most popular application for Japanese wireless users. Other offerings include chat, bulletin boards and similar services.
Information	Most location-specific services — map and direction services, shop/movie/event listings, job openings, real estate information and similar services.
Transaction	Banks and brokerage firms are increasingly aware of the importance of wireless services in attracting and retaining customers, on-line settlement and trading capabilities are widely available. Wireless handset shopping, so-called "m-commerce," has also shown significant growth, despite technical limitations that have hampered widespread adoption. NTT DoCoMo has launched a shopping service in cooperation with one of Japan's largest convenience store chains that has the potential to drive dramatic expansion in this sector.
Enterprise applications	Representative applications include groupware and full-fledged mobile intranets — any application used by a business to increase the efficiency of internal operations.

a price point at which Japanese consumers have proven willing to purchase information.

### HIGH-SPEED LAUNCH

Of course, Matsunaga's service design was only one of several factors that contributed to i-mode's success. NTT DoCoMo's careful planning, ensuring that both handsets and abundant content were available at rollout, was also crucial. This helped drive consumer uptake, as did set-up costs that are dramatically lower than PC-based Internet access. Social factors also played a role: thanks to widespread use of mass transit, commuters are a captive audience at least twice a day.

Meanwhile, because the penetration rate of cellular phones is so high, Japanese consumers are very familiar with these devices and receptive to using them for e-mail and other on-line functions — more so than PCs, which for many users continue to connote complexity. This being the case, the clearly delineated options provided by carrier-sanctioned default menus and the simple user interface of Internet-enabled cellular handsets are also a selling point, especially attractive to beginners who find it difficult to use PCs to navigate the confusing array of options offered by the Internet. Finally, Japanese consumer susceptibility to fads and trends has helped sustain the boom. Internet-enabled cellular phones are currently a hot product, and everyone wants one.

NTT DoCoMo launched i-mode months before competing services and has parleyed its first mover advantage into a commanding share of this market. Over 60% of Japan's Internet-enabled cellular phone subscribers have i-mode phones;

J-Phone's J-Sky service and KDDI's EZweb service split the remaining market share more or less evenly.

### Whoa, Not So Fast

Still, these market share calculations suggest larger user numbers than may actually be the case. It is important to note that a "subscriber" is not necessarily a "user." According to a study by NetRatings Japan, only 9.7 million wireless subscribers, just over a third of the total at the time, actually used their phones to access the Internet in February 2001. Compare this to the 26.3 million people

who accessed the Internet via a PC in Japan in February, and it quickly becomes clear that the PC as an Internet access device is not dead and won't be for some time.

Why the relatively low user-to-subscriber ratio? A recent study by Japan Gartner Group reveals that "half of Japanese users in their 20s and 30s are not satisfied with the wireless Web experience," citing lack of appealing content and complicated, difficult-to-use design as the primary culprits. Despite the growing pains, though, wireless in Japan keeps growing — and growing fast.

### WHAT'S HOLDING BACK WIRELESS IN THE UNITED STATES?

Why isn't the US wireless market growing as fast as Japan's? After all, other portable consumer electronic devices such as the Walkman and the Gameboy have succeeded here. What's so different about Internet-enabled cellular telephones? Skeptics of the transferability of i-mode's success to Western markets point to the peculiar applications that have driven its growth, applications that many feel would not work outside Japan — certainly not outside Asia. Some of the best-known applications include downloadable ringtones, cartoon character wallpaper, fortune telling, horoscopes and recipes. While it's true that the mass-market appeal of some Japanese wireless applications would not survive a trip across the Pacific, others might surprise us. Sometimes people mistake things that are ahead of their time for things that "will never work."

### THAT'S WEIRD. CAN I TRY IT?

I recall a colleague telling me in the late eighties that only in Japan would you find something as strange as karaoke. "Can you imagine a bunch of Americans

sitting around a bar taking turns singing into a microphone?" Now I don't have to imagine it. I can go to any one of a host of local bars and find exactly that. I remember a similar reaction on my part when a Japanese colleague brought his Sony Playstation to a party with a game called Dance Dance Revolution. This is a game that requires the user to follow on-screen dance moves precisely, dancing on a Twister-like mat wired to act like a giant joy stick, tracking your every step. The initial reaction was, "Weird!" — definitely another only-in-Japan oddity. Less than an hour (and a few beers) later, there was a waiting list to get jiggy with it. If you've been to a large video game arcade in the United States recently, you probably saw this game and noticed that it was attracting the biggest crowds. Consumers are fickle, and it's hard to predict what will catch on. But we do know what caught on in Japan.

**SO WHAT CAN I DO WITH THIS THING?**

Japanese Internet-enabled cellular telephone users report using e-mail more than anything else, with entertainment applications running a close second. According to NTT DoCoMo, entertainment sites receive 64% of accesses to official sites listed on the i-mode default menu and account for approximately 70% of unofficial sites. Claiming 19% of total accesses, news and weather is the next most popular category on the official menu, followed by ticket reservation sites with 5% and financial services with 4%. Meanwhile, the most popular kinds of free content are news, which is used by almost half of i-mode users, directory services and traffic reports.

Although the application and service offerings on each carrier's default menu are only accessible from that carrier's handsets, this does not necessarily mean that these services are not available to subscribers to other services. Instead, the most popular applications are made available to users of other carriers as well — either through the original provider or through an enterprising competitor that duplicates the original service. Broadly speaking, the cellular Internet applications currently available to Japanese consumers can be divided into four areas, with business applications targeted at corporations composing a final fifth category: 1) entertainment, 2) communication, 3) information, 4) transaction and 5) enterprise applications.

**YOU'VE GOT MAIL — BY THE TRUCKLOAD**

E-mail is the killer app for Japan's Internet-enabled cellular telephones. Unlike other

applications, which tend to attract subscribers from limited demographic segments, e-mail has near-universal appeal: over 80% of business users and over 90% of teens report sending and receiving e-mail from their cellular handsets. Of course, different demographic groups use e-mail very differently. Although teens ostensibly send e-mail to keep in touch with friends — handset-based e-mail has replaced the pager-based text messaging services that previously ruled the youth market — for many teen users, sending e-mail is as much an end in itself as a tool for communication. Sending e-mail to friends is the hip thing to do and is a cool way to assert one's status as a member of the "in crowd." As a result, teens send more e-mail than any other age group: almost one-third of teen users report sending more than six messages per day. For adult users and especially businesspeople, handset e-mail is more of a functional tool to communicate with colleagues and friends. The majority of adult users sends fewer than three messages per day from their handsets.

**YOU RANG?**

**C**haku-melo is short for *chakushin melody* and literally means "incoming transmission melody." Downloadable custom ring tones are the most popular fee-based content for Japan's Internet-enabled cellular telephone users. Over half of i-mode users report using *chaku-melo* services. Users can download *chaku-melo* from free sites as well as commercial sites, and some handset models allow users to program their own melodies using the handset buttons, resulting in the rise of magazines that publish printed "scores" showing users which buttons to press to generate the latest hit song.

*Chaku-melo* services are popular for two reasons. First, they serve a practical purpose by making it easy for a user to confirm that it's his or her phone that is ringing — not the phone of the person sitting next to him or her. Second, there is an enormous variety of ring tones, ranging from Japanese pop music to Star Wars and classical music. The variety of ring tones makes it easy for consumers to customize their handsets and make a personal statement with every incoming call.


**TIM'S TWO BYTES WORTH**

**I**t is often said that the key to understanding the present — and likely the future — is to study the past. With that in mind, let's take a look at the history of the transfer of high technology between Japan and the West.

Tim Clark, strategy director for Ion Global Japan and editor of the *Japan Internet Report*, points out that "Asian nations, including Japan, were slow to adopt PCs because of a critical limitation — early PCs didn't allow Asian users to input text in their native language [and] double-byte compatibility for personal computers came years after the first English operating systems." Apple's relatively larger piece of the personal computer pie in Japan compared to the United States is due in large part to the fact that "the Macintosh operating system incorporated Japanese character support before DOS and other alternatives."

Clark goes on to note that since operating systems began supporting Japanese, personal computer use has increased sharply in Japan. Consumers were always interested in computing, but the technology was initially so difficult to use that they were discouraged.

As Clark points out, it seems that in the case of the wireless Internet, this process may work in reverse. Naysayers frequently cite poor user interfaces, in particular low-quality handset screens, as a reason why Internet-over-cellular services will not be accepted in the United States. But in the two and a half years since i-mode launched, handset screens have transformed from tiny black and white displays to slightly less tiny color displays, and handset manufacturers are now developing organic electroluminescent displays that promise further improvements in clarity and brightness.

Handset and transmission technology is improving, and service offerings are growing more sophisticated as well. By 2002, when DoCoMo and AT&T launch their Internet-enabled cellular service in the United States, content providers and handset makers will have addressed most of the current shortcomings, and US consumers may well be won over. In the words of Tim Clark, "DoCoMo has provided a blueprint for how to create a wireless user experience far superior to anything currently available outside of Japan. The Japanese cellular experience may eventually come full circle in the West as well — and in ways we haven't yet imagined." 

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