

Japan's mobile phone marvels go back to the future

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An employee of Japanese mobile communication giant NTT DoCoMo demonstrates how to buy a softdrink from a vending machine with a mobile phone at the company's headquarters in Tokyo. NTT DoCoMo's phones since 2007 feature a cashless payment system, which allows users to buy lunch at a hamburger chain, simply by swiping their phone over an electronic pad.

In the Japan of 2020 a stressed-out salaryman may unwind from his hectic futuristic lifestyle by time-travelling back a few centuries and taking a virtual stroll through medieval Tokyo.

As he walks over arched wooden bridges, he will chat with the avatars of his real world friends, admire pollution-free views of Mount Fuji and perhaps do some cash-free souvenir shopping for a digital download of a woodblock print.

He will navigate through the city once called Edo from the comfort of his intelligent living room, wearing 3-D glasses and moving about by waving a super-networked mobile phone that is attached to his wrist like a watch.

"This is Nihonbashi in virtual Edo," an invisible tour guide will say in an upbeat if slightly tinny voice. "It's a virtual community that is popular worldwide. A lot of people have logged on today already!"

Welcome to the future as imagined by [NTT DoCoMo](#), Japan's mobile telephone giant with 55 million subscribers, which has long been a leading force for innovation in the high-tech paradise that is [Japan](#).

Its Shangri-La is the 'Future Station', located in a skyscraper 29 floors above Tokyo, where visitors are taken on guided tours of the company's mobile phone marvels, and treated to a glimpse of what's to come.

Such as the wearable phone of 2020 that DoCoMo envisions will be the user's constant companion, fitted with a small flip-out screen and capable of projecting images onto a wall or into thin air in the form of a [hologram](#).

It will be an ID to enter the family home or to board a flight, a device to video-chat with friends and the office, and a remote control to activate the robo-vacuum cleaner or tell the fridge to order new groceries.

Made from recyclable materials and partially charged kinetically through body movements, the device will be equipped with simultaneous translation software to connect the user to everyone else, anywhere, anytime.

The vision is bold, but in Japan that doesn't make it unrealistic.

In many ways the mobile phone future has already arrived in Japan, where the evolution of the devices has taken a separate path to the rest of the world.

On Tokyo's crowded subway trains, newspapers are a rare sight as most commuters plug themselves into their cellphones or other handheld electronic devices -- web-surfing, mailing, playing games or watching television.

Japanese cellphones started sending email 10 years ago, have had terrestrial TV for years and long boasted video cameras, barcode readers and an 'i-concierge' assistant that gives hints on a late train or a traffic jam.

DoCoMo's phones since 2007 feature a cashless payment system, which allows users to buy a soft drink from a vending machine or lunch at a hamburger chain, simply by swiping their phone over an electronic pad.

"By having a phone you can do almost everything," said Takeshi Natsuno, known as the 'father of i-mode', the popular Internet service DoCoMo launched a decade ago, and now a professor at Tokyo's Keio University.

"All convenience stores and 60 percent of Tokyo taxis are equipped with readers so you can pay by phone," he said, adding that this is one reason the central bank three years ago started to reduce the number of new coins minted.

DoCoMo co-develops phones with manufacturers such as NEC, Fujitsu and Panasonic, who then custom-make the handsets for it. Usually the makers are identified only discreetly with their initials in the model name.

Among recent offerings is the bright-yellow Kids Phone F05A by Fujitsu, which features a pull-string alarm that emits a shrill noise and sends an email alert to the parents that instantly pin-points the child's location.

In another new model, the two halves of the phone are held together magnetically and can be easily separated, allowing users to talk and web-surf at the same time, or to split the device into a TV and a remote control.

Other newcomers include a cellphone with a small solar panel that in a pinch can give the user a few extra minutes of power, a phone with a 10-megapixel camera, and a range of waterproof models to use in the bathtub.

Despite, or perhaps because of, their sophistication, Japan's mobile marvels are rarely seen outside the archipelago. The only Japanese maker with a strong international presence is Sony Ericsson.

Experts say Japan's more than half a dozen big manufacturers have long relied on the huge domestic market and designed phones specifically for Japanese tastes, customs and, with their often hefty price tags, wallets.

During the cellphone boom years of the 1990s and 2000s, Japanese companies raced ahead and adopted the second- and then third-generation standards years before their international counterparts, effectively insulating the market.

More recently, however, the sector has taken a beating as a deep recession has rocked Japan's economy. An end to industry subsidies meanwhile has made phones more expensive at a time of few real technological breakthroughs.

Cellphone sales fell by one third from 51.72 million in fiscal 2007 to just 35.85 million in 2008. A rebound is expected in coming years but in the long term the market is set to shrink as Japan's population greys and falls.

Meanwhile, the iPhone and other smartphones have marked a quantum leap for the rest of the world in turning phones into multi-functional personal gadgets with Internet access, GPS-guided maps and a universe of software applications.

The iPhone has caught on only gradually in Japan, where it is marketed by DoCoMo rival Softbank, but the device and other smartphones show that Japan's mobiles no longer have an undisputed edge over foreign makes.

"The American and European markets have rapidly 'Japanised' in terms of mobiles," said Natsuno, who warned that the new phones, made by information technology companies, are rapidly shaking up the industry.

Natsuno, who uses a Japanese phone and an iPhone, said his foreign-made device has only a few drawbacks, such as lacking the 'wallet function' and a privacy mode that, he joked, made having an extra-marital affair dangerous.

"Why are so many people using the iPhone now?" he said.

"The phone is the closest device to the human body. PCs are too big and easily run out of batteries. If you consolidate all the functionality within one device ... the [mobile phone](#) is the best device for human life."

Natsuno said in future he expects mobiles to boast advances such as basic artificial intelligence, sophisticated biometrics and batteries that last one week -- but he says it may not be Japanese companies who make

them first.

"Now the leaders of the industry are IT players, and telecom players are following," he said. "China, the US and Europe are becoming more like Japan.

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