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## Analysis: Japan's Advanced Mobile Phone Environment

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Widespread advanced use of mobile phones in Japan has not come about serendipitously: the Japanese have taken to their cell phones because of the country's highly advanced mobile phone technology and network infrastructure. Additionally, the government's ambitious strategic plan to make Japan the most advanced "e-nation" in the world has boosted the industry, created an ideal environment for promoting mobile phone usage beyond simple person-to-person calling, and spurred domestic demand for high-tech handsets.

### Mobile Phones Tailored to Japanese Way of Life



Click [here](#) to view a two-minute video of Japanese cell phone culture.

With widespread access to fast and low-cost broadband networks, Japan's mobile phone industry boasts some of the world's most advanced mobile phone technologies. The mobile phone, or keitai, is rapidly linking users' everyday needs to virtual applications. For example, most mobile phones are able to download train schedules, receive personal health biofeedback, execute banking and other financial transactions, play games,[\[1\]](#) display digital/terrestrial TV and full length novels, and even find temporary employment for its owner via a GPS-linked application.

- The latest offering by NTT DoCoMo, the largest Japanese mobile phone carrier with more than a 50 percent market share, is the new MH2H, or mobile home to home technology. The technology allows the user's handset to stream content from the user's home PC to a remote TV at a friend's home or another office.[\[2\]](#)
- The Ply Phone, a prototype designed by KDDI, may incorporate advanced features such as a mobile projector, color photo printer, game controller, and such quintessentially Japanese features as a tissue or mint dispenser.[\[3\]](#)



A ply phone with mobile projector (KDDI website)

A distinctive feature of Japanese mobile phones is the use of thousands of pre-installed icons and characters including "emojis," "animes," and "emoticons," used extensively in mobile communications. The predominant use of the emojis and a new mode of slang called "gyaru moji" by school children, combined with the Japanese penchant for texting, has shaped a web-savvy youth culture that considers anyone unfamiliar with it as "kuki yomenai," or unable to read the air around them.[\[4\]](#)

This use of high-tech gadgetry, advanced infrastructure, and unique applications such as emojis, QR (quick response) bar code readers, and hardware such as a horizontal flip screen for widescreen TV viewing, is shaping a "super-phone" culture, which has made it difficult for overseas manufacturers, including those from the United States, to enter Japan's mobile phone market.

- Recent initiatives by Apple to introduce its iPhone to Japan's market have met with slow sales. Japanese mobile phone users complained about the iPhone's large size, short battery life, and slow capability to convert to *keitai* lingo.[\[6\]](#)



A QR code being captured by a mobile phone's camera. QR codes are like bar codes that link to specific URLs (Doc Zone).[\[5\]](#)

### Government IT Strategy Bolsters Mobile Developments

Government efforts to develop its information technology (IT) infrastructure have been instrumental in bolstering

Japan's mobile industry. According to a Japanese Ministry of Internal Affairs and Communication white paper<sup>[7]</sup> and online trade media sources, after an economic downturn a decade ago, Japan's government initiated a plan to provide a variety of government incentives to industry to create what the government believed would become the most advanced e-nation in the world. These incentives included funding, human resources, technical assistance, tax relief, and subsidies for start-ups and ventures. In addition, the government deregulated the industry and has removed many obstacles to domestic competition.

- The government five-year plan, "e-Japan Strategy," began in 2001. In 2003, the strategy was further defined, stating that government, industry, and academia should cooperate so that Japan's new IT society "does not simply follow the West and can be transmitted as a model to the whole world." In 2004, the Japanese Government revised telecommunication business laws to promote deregulation of private carriers.<sup>[8]</sup>



Various phone applications (Cnet UK, 29 January 2007)

- To spur the adoption of broadband, the government subsidized 3G technology by not charging operators a licensing fee, according to technology news website *TechCrunch*.<sup>[9]</sup>
- Government regulation and subsidization of digitizing terrestrial television has buoyed mobile TV subscriptions. In Japan, many handsets are equipped with one-seg (1Seg) technology that allows mobile phone users to watch terrestrial TV on handsets free of charge.<sup>[10]</sup> In early 2008, the shipment of one-seg equipped mobile handsets passed the 20 million mark, two years after its introduction.<sup>[11]</sup>

#### Japanese Mobile Market Designed to Succeed

While some observers might attribute the widespread usage of mobile devices in Japan to cultural phenomena, such as reliance on public transportation giving the average Japanese commuter more time for personal communication, a study by *Infinitia*, a telecommunications market research company in Japan, attributes the strength of the market solely to technical reasons.

- *Government subsidization*: Since the government charged no spectrum licensing fees, network operators realized a profit after recouping their investment in network infrastructure.
- *Open standards and "Open Gardens"*: Operators, vendors, and content providers eschew proprietary solutions, opting instead for features that can be accessed by all mobile users and lead to more widespread adoption.
- Operators *pay content providers generously*, creating an incentive to produce a constant supply of fresh content, attracting users.
- *Mobile e-mail* was the default messaging technology, making mobile e-mail a key driver of mobileInternet adoption early on. Mobile e-mail is more versatile and provides richer content than Simple Messaging System, or SMS.
- *Pricing* for mobile Internet services, while not cheap, has always been transparent, encouraging users to make full use of the service without fear of hidden fees. <sup>[12]</sup>

The \$90 billion Japanese mobile phone industry is probably two to three years ahead of the US industry, according to various industry reporting,<sup>[13]</sup> buoyed by ample content and superior phones.

- The predominance of cutting-edge handsets combined with subsidized pricing by carriers has spurred strong customer demand. As of August 2008, nearly 104 million Japanese subscribe to mobile phone services offered by Japan's three major mobile operators NTT DoCoMo, KDDI, and SoftBank (*wirelesswatch.jp*).<sup>[14]</sup> See the Appendix for company information.

Ubiquitous use of mobile phones and advanced IT infrastructure have also been important factors in spurring Japanese e-commerce, where consumers can locate and purchase practically anything through their phones.

- In 2007, mobile users carried out over \$106 billion worth of business on their handsets, according to Japan's Ministry of Internal Affairs and Communications (*Tech Crunch*).<sup>[15]</sup>

#### Despite Success, Government Actions Cause Some Concerns

While government efforts have helped Japan to lead in e-technology, recent government actions are causing worry in the industry.

- The government is currently urging carriers to limit their subsidy of customers' handsets, and this has weakened demand for the new generation of higher-priced handsets in an already mature market, according to *Business Week* and various other news outlets.<sup>[16]</sup>
- Efforts to regulate online and mobile phone content for users under age 18 are viewed as ambiguous and a potential threat to content producers. A December 2007 bill mandating mobile content filtering was followed by two separate bills submitted in March and April 2008

to prevent browsing of harmful information, and this has created an outcry from bloggers, who called the bills "horribly dangerous," according to social activist blog *Global Voices*.<sup>[17]</sup>




### Outlook

Japan's mobile communications sector has become among the most advanced and heavily used due to government efforts and the willingness of network operators, cell phone manufacturers, and online content providers to provide open, or non-proprietary services. The latter has allowed for the development of services and features that can be enjoyed by all mobile users, regardless of the network carrier. Content providers have developed a wide array of applications to meet the Japanese users' needs, until the lines between daily routines and mobile usage becomes blurred, and a generation of hardcore mobile phone users has been born. These technological advances, supported by government subsidies to network operators and cell phone manufacturers, have made information an on-demand service, enabling Japanese consumers to gain access to real-time services where and when they want it.

- It is too early to tell how the battle for servicing Japan's coming generation of tech-savvy consumers will shake out, but the mobile media environment will certainly change. In the long term, should Japan continue with technology leaps, traditional products and services must either adapt to the new ways or relinquish their power grip and eventually their existence.
- The strategy of exporting its advanced information technology overseas should provide a new growth area for Japan's mobile industry on the international scene. However, ironically, Japan's remarkable success in developing such advanced products and infrastructures means that marketing to the United States and Europe may require them to "dumb down" their products and remove some of their most advanced mobile phone features to ensure that they will appeal to, and operate in, less advanced and technically savvy countries.

### Appendix: Japan's Mobile Service Providers

Japan has three major mobile service providers.

	<p><b>NTT DoCoMo:</b> Japan's leading mobile service provider has a 51.9 percent market share. Its headquarters is located at 2-11-1 Nagata-cho, Chiyoda-ku, Tokyo, Japan 100-6150</p> <p>URL: <a href="http://nttdocomo.co.jp">nttdocomo.co.jp</a></p>
	<p><b>KDDI:</b> Japan's second largest service provider has a 29.3 percent market share. Its headquarters is located at Garden Air Tower, 3-10-10, Iidabashi, Chiyoda-ku, Tokyo, Japan 102-8460</p> <p>URL: <a href="http://au.kddi.com">au.kddi.com</a></p>
	<p><b>Softbank:</b> Japan's number three provider with 18.8 percent market share. Its headquarter is located at 1-9-1 Higashi-shimbashi, Minato-ku, Tokyo, Japan 105-7317</p> <p>URL: <a href="http://softbankmobile.co.jp">softbankmobile.co.jp</a></p>
<p><i>Company logos obtained from the company websites; data for market share was obtained by dividing subscriber numbers by carrier over total subscribers in Japan. The subscriber numbers were obtained from <a href="http://wirelesswatch.jp">wirelesswatch.jp</a></i></p>	

### Overview

**Service Plans:** Japanese service providers favor data transfer over talking minutes by charging relatively high per-minute rates but offering data packages that are relatively inexpensive compared to data transfer rates in the United States. In addition to basic mobile plans, some of which include as few as 50-100 minutes per month, each service provider offers special deals on unlimited data transfer, high-speed Internet connections, or other data-oriented

discounts.

### NTT DoCoMo

**Corporate History:** DoCoMo was founded July 1992 through NTT Mobile Communications Network's takeover of Nippon Telegraph and Telephone Corporation's mobile communications business. It was first listed on the Tokyo Stock Exchange (TSE) in October 1989 and changed its name to "NTT DoCoMo" in April 2000.

**Service Lineup:** DoCoMo offers three types of mobile subscriptions:

- **FOMA:** Short for "Freedom of Mobile Multimedia Access," FOMA is DoCoMo's third generation (3G) service. When FOMA was launched in 2001, it was the world's first W-CDMA 3G service.
- **Mova:** DoCoMo's older second generation (2G) service is gradually being phased out -- according to the Telecommunications Carriers Association, about 19 percent of DoCoMo customers were still mova users as of February 2008 (*Japan Today*, 23 March 2008). DoCoMo stopped producing new mova handsets at the end of 2007 and is asking subscribers to switch to the newer FOMA 3G service.
- **mode:** DoCoMo's wireless Internet service was launched in February 1999. It is similar to modem-based wireless plans for PCs offered by US carriers.

**Product Lineup:** Most of DoCoMo's handsets are "clamshell" flip phones or slide phones that specialize in one or more function areas -- such as 1Seg television, digital photography, GPS capabilities, or high speed Internet. Compared to US carriers, DoCoMo only offers a limited smartphone lineup (just three options, including one BlackBerry as of October 2008). However, even low-end models include features such as "Osaifu-Keitai" (mobile wallet), "Chaku-uta" (ringtone downloading), "PushTalk" (conference calling), and Internet capabilities.

### au by KDDI

**Corporate History:** KDDI was founded as Kokusai Denshin Denwa Co., Ltd. in 1953 and became KDDI in 2000 through the merger of the DDI Corporation, KDD corporation, and IDO corporations. KDDI first launched its third-generation (3G) mobile phone service (CDMA2000 1x) in April 2002.

**Service Lineup:** Au KDDI's basic mobile web browsing service is called "EZweb" and includes e-mail, web browsing, picture and video sharing, and video conferencing.

- **Extended web services:** KDDI offers a variety of online services in addition to basic Internet access. Two examples are Lismo and "Run & Walk." Through the Lismo platform, users can purchase music, movies, and TV shows on their PCs then transfer this data to their cell phones. "Run and Walk" is advertised as a "personal trainer" that counts the calories used during exercising, customizes music playlists based on the tempo of the user's running or walking pace, and offers exercise-related advice during a user's workout. Au also offers osaifu-keitai.

**Product Lineup:** Au KDDI's handsets are similar to those offered by DoCoMo and include various models that "specialize" in areas such as 1Seg TV, digital photography, Internet browsing, or ruggedness. Even the models marketed for their "simplicity" or "user-friendly" design include data transfer, GPS, infrared, emoji, and other capabilities not usually found on low-end handsets in the United States.

### Softbank Mobile

**Corporate History:** Softbank's predecessor, Railway Telecommunication Co., was founded in 1986 and changed its name to Japan Telecom Co., Ltd. in 1989. Japan Telecom began offering 2G mobile service in 1994 and changed its name to J-Phone in 1999 and Vodafone K.K. in 2003. Vodafone became an affiliate for the Softbank Group in April 2006, and in October of that same year the company name was changed to Softbank Mobile Corporation.

**Service Lineup:** Like DoCoMo and au KDDI, SoftBank Mobile currently operates both PDC (2G), referred to as "SoftBank 6-2", and W-CDMA (3G) networks, known as "SoftBank 3G." Softbank will discontinue second generation (2G) service in March 2010 and is encouraging all current 2G customers to migrate to the company's third generation (3G) network.

- **3G Web:** In addition to basic web access, Softbank a variety of fee-based web services including music and movie downloads, weather news, games, and entertainment news. Softbank's version of "osaifu-keitai" is "S! FeliCa."

**Product Lineup:** SoftBank's 3G handset lineup is similar to those of DoCoMo and KDDI. These include models with pivoting screens for horizontal TV viewing as well as models that specialize in digital photography or Internet access (for example, see the 9225H model below).

Softbank secured an exclusive agreement with Apple to release the iPhone in Japan and began offering this handset in June 2008 ([mb.softbank.jp/mb/iphone](http://mb.softbank.jp/mb/iphone)). The unlimited data transfer service plan offered with the iPhone is approximately 7,280 yen (\$70).

Softbank is also focusing on what it terms "Internet machines," hand-held devices intended for Internet access over mobile networks. For example, in March 2008 Softbank released the 9225H Internet Machine, a mobile phone-sized device with a 3.5-inch VGA

screen, full QWERTY keyboard, and special keys to handle RSS feeds

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