

Handset Publishing: Just a Japanese Phenomenon?

By Joel Breckenridge

Japan's early push to mobile 3G service and a relentless feature war among the three mobile carriers — DoCoMo, KDDI-AU and Softbank (previously Vodafone) — created a vibrant mobile market. Mobile Internet access reached early mass acceptance compared with America and Europe, creating unique market opportunities for content providers and advertisers.

Japan is an excellent place to observe future mobile computing trends, especially in the cell phone market. Japan led the change from 2G to 3G, was the first to add digital cameras to cell phones and is now heavily marketing “1 Seg” (one segment of the 13 segment digital broadcast spectrum) TV service for handsets. On the software side, Japan was one of the first mobile markets with e-mail and Internet access.

The mobile Internet party officially started in 1999, when DoCoMo launched iMode. iMode was both the service name and the name of the HTML subset that later become known as iHTML. The iMode version of HTML was crafted specifically for the slower speed and tiny handset browsers of the day, with support for ShiftJIS Japanese encoding and “emoji,” the bewildering variety of beloved Japanese emoticons that have run wild on the Unicode private use area. This means that some emoji do not display correctly or at all on competing carrier handsets. Japanese font conferences are entertaining just to watch carriers blame one another for the emoji encoding mess. iMode's simplified HTML was necessary due to the slower 2G networks and limited handset display capacity of the day.

Even at slow data speeds, iMode was a success and was quickly followed by similar services from KDDI-AU and J-Phone (shortly to become Vodafone, then Softbank). Mobile Internet access exploded in 2002, when Japanese carriers rolled out 3G service, flat-rate data plans and 3G handsets with bigger, clearer displays. Mobile Internet access rates surpassed personal computer Internet access in 2004.

Ad Market

While the Internet market was taking off, the Japanese publishing and ad markets were in the doldrums, where they've been since the mid-1990s. The latest ad industry figures from Japan's No. 1 ad agency, Dentsu, show Japanese ad spending growing less than 5% year to year. However, advertisers reduced their print budgets

— newsprint in particular — and moved advertising to the Internet. Japanese Internet ad spending in 2006 was \$3 billion and will grow 30% this year. It's still dominated by banner ads and portals, but the shift to paid search has clearly started and is growing over 50% year to year.

Google does not dominate paid search in Japan as it does in the U.S.; Yahoo Japan has managed to hold onto 60% of the paid search marketing addition to its lead in banner ads. Yahoo Japan is also majority owned by No. 3 mobile carrier Softbank. If you haven't connected the dots yet, Softbank equals Yahoo Japan, and every Softbank handset has a Yahoo button on the keyboard that opens a mobile version of Yahoo Japan's portal page, with banner ads and the search engine. KDDI-AU and DoCoMo have similar “inside portals” (so called because the portal is hardwired to the keyboard button). KDDI-AU has a co-venture with Google search that it features on its inside portal. Market share leader DoCoMo does not have a name-brand search engine yet, but the industry is clearly watching for its entry into paid search.

Japan's early lead in mobile Internet has created a mobile ad market that will reach \$480 million this year and is growing 38% year to year. You might think that having an inside portal hardwired to the keyboard automatically means having a captive audience and the highest page view (PV) rates, but this isn't so.

Welcome to the Social Portal

In the past two years, DeNA's Mobage Town has evolved into a massively successful mobile site with the highest consistent page views of any Japanese Web site and a young demographic advertisers covet. PV rates are growing steadily, and the most recent traffic peak was in August, with more than 450 million PVs a day. Yahoo Japan mobile is lucky to have 100 million PVs a day and its growth is basically flat. The nearest competition is SNS mixi mobile at 190 million PVs a day.

DeNA's Mobage is a unique mix of SNS, online gaming and online auctions, with a sprinkling of Second

So Long ATSUI, We Hardly Knew You

MacOS X 10.5 Leopard introduced a new text application programmer interface called CoreText to replace the ATSUI and MLTE Carbon text apis. This is the third software makeover for which the few loyal MacOS developers who invested first in QuickDraw GX advanced text and layout technology and then ATSUI have had to program. Apple developer documentation states CoreText benefits are:

- a comprehensive, unified set of text-layout and font apis;
- high performance and ease of use;
- tight integration with Cocoa, Core Foundation and Core Graphics (Quartz);
- native Unicode handling;
- 64-bit application support;
- clean, simple, consistent api design;
- simple interfaces for simple operations;
- a flexible interface to layout and glyph data; and
- a predictable cost structure and rational division of labor.

Japanese software developer Ergo has dutifully adopted each and every Apple text technology. We spoke with Ergo Marketing Director Isamu Iwata back in 2002, when Ergo used ATSUI for the Japanese advanced layout features in its EGWord Version 12 word processor package. Ergo just released free Leopard updates to EG Word Universal 2, one of the first third-party programs to use Core Text. Iwata said speed is the primary benefit of the new API. "Core Text is much faster than ATSUI was. We have not programmed for 64 bit yet because the compatibility testing overhead is too steep for us and not really necessary for a word processor," he said.

Iwata was less sure if other developers will use CoreText's high-end typography features. "Other developers didn't use many ATSUI features and I don't think many developers will invest much in CoreText as it's an Apple-only solution," he said. Iwata has a point, as Apple does not even bother to use Cocoa NSStringView

or CoreText to implement a basic Japanese text feature such as vertical layout in its own Cocoa-based word processor, Pages. It even dropped the glyph variants features from the new versions of Hiragino Pro N without any explanation.

Ergo is looking forward to the iPhone developer SDK but is not getting its hopes up. "We'd like to develop our Japanese input module for iPhone, but Apple probably won't let us that far down in the OS," said Iwata. **TSR**



Glyph variants are in Hiragino Pro but not in ProN

Life-like avatars and virtual money called Moba-Gold. The last point is important; Moba subscribers purchase Moba-Gold with real money and put it to use selling and buying items and services. DeNA makes money from banner ads and Moba-Gold purchases, but the system is set up so that DeNA, subscribers and advertisers can all share revenue from user-driven content. The resulting business model will drive DeNA sales growth 50% year to year, to an expected \$210 million in 2007.

According to DeNA IR Investor Relations Group leader Atsushi Nagatoshi, "Moba-Gold is the highest growth driver, followed by online games and online novels (a service DeNA started in February). With novels, we have had a number of hits. The most popular ones have been published by Kodansha. Our PV rate for online novels alone is already higher than mixi mobile."

At present there is no method for budding online novelists to earn money from Moba Town, but Nagatoshi said this will soon change.

In addition to Moba Town, DeNA will issue its own search brand, which is being co-developed with **Yicha**.

The next step for DeNA will be to enter the Chinese mobile market. The timing for this is good, as China will be making a big 3G push in time for the Summer Olympics in 2008 and the mobile Internet market there could become an excellent opportunity.

Convergence

The only fly in the ointment for the mobile market is the arrival of "real Web browsers" such as the iPhone, which is due to arrive in Japan in 2008. With handsets such as the iPhone on the market, the line in the sand between PC Internet access and mobile Internet access will start to disappear. Japanese handsets already boast "real Web browsers," but they are still hampered by small screens, slow 3G data downloads and the pay-by-data packet plans carriers force on users. 3G Euro snobs who pooh-pooh the 2G Edge iPhone are in for a rude awakening when they find out how slow 3G Internet access really is.

Japanese mobile users still prefer lighter, faster and flat fee iMode. iMode will eventually disappear, but it will hang on at least until the WiMax service rollout,

Stroke Fonts Coming to Your Cellphone

Handsets have come a long way since the introduction of iMode in 1999. Displays have gotten bigger, resolution higher, CPUs faster. Despite the evolution, handset memory, CPU and storage are still very constrained compared to desktop computers. A handset OS has to be very compact and desktop technologies are a poor fit. This is particularly true with Asian fonts. Large Chinese and Japanese font sets consume precious storage, memory and CPU power. Bitmaps served well at first but today's higher resolution handset screens and Japanese graying population demand nice-looking easy to read scaling fonts.

TrueType and OpenType, good as they are, are desktop technology. A single MacOS X Japanese OpenType font Hiragino Pro has more than 20,000 glyphs and weights in at 9 MB. TrueType Asian font file sizes are even larger because TrueType data is not compressed. The solution for Japanese font vendor Morisawa was jettisoning OpenType data format and rasterizer altogether and creating its own.

The result is KeiType. Morisawa took six of its most popular designs, discarded the extended glyph sets down to the basic JIS 1 and JIS 2 sets (about 7,000 glyphs), eliminated most of the bezier curves, and created a new rasterizer that only consumes 50 Kbps of working memory. Morisawa KeiType sales manager Hajime Kusaka said the effort took five years.

"One of the objectives of KeiType is to bring the superior design qualities of Morisawa to cellphones. We think the shift from QVGA to VGA will happen very quickly. In less than two years most of the Japanese handsets will be VGA. Our original KeiType design concept was to have fonts that would look good up to 300 x 300 DPI." To keep fonts looking good at smaller sizes Kusaka said, "We don't use traditional hinting, but we have a concept we call 'tuning.'" Morisawa shrank KeiType data sizes to one third the size of the OpenType versions. In addition to scaling, the KeiType rasterizer can render simple animation effects as well. Morisawa fonts are used in Hitachi and Fujitsu handsets sold only in Japan. Kusaka said Morisawa are in negotiations with handset makers outside of Japan. If successful it will be the first time Morisawa fonts have been licensed outside of Japan.

Other font vendors are using other technology to get smaller, more efficient Asian fonts: stroke-based fonts. The ghost of QuickdrawGX turns up in surprising places. Back in 2000 we wrote about stroke font technology from Fontworks that had been developed for QuickdrawGX but was axed when Apple's Copland OS project was terminated.

Taiwan font developer DynaComware also created stroke-based QuickDrawGX Asian fonts. Dyna has reworked and repackaged the basic technology as DigiType Fonts for embedded devices. The story does not end there.

American font developer Ascender Corp., the old core crew of Monotype, licensed DynaComware's stroke font technology, fine tuned it and added extensive hinting courtesy of Tom Rickner who knows what he is doing.

Rickner helped create the first TrueType fonts at Apple, did all the hinting for Microsoft's Georgia and Verdana fonts and worked with Japanese font foundry C&G on Meiryō, the new Japanese font family Microsoft commissioned for Vista. Meiryō is beautiful font and one of the few Japanese fonts truly created and extensively hinted for the screen. MacOS X's Hiragino Pro Gothic family, good as it is, was Dainippon Screen's first PostScript font effort and lacked font programmers of Rickner's caliber.

Ascender Compact Asian Fonts, ACAF, is the **final product**. Rickner said all the fonts use a base library of 500 discreet parts to create the necessary glyphs. Because the same parts are used again and again, they take up less space and working memory.

Ascender has been in the news recently as the font supplier of the Open Handset Alliance aka Android OS. The Droid font set includes an Asian font set. Unfortunately, the Asian Droid fonts are TrueType, not ACAF. That means they eat a lot more storage and memory. Rickner said they are hooks in the Android OS so handset developers can license and use ACAF if they want better performance.

What about Chinese and Japanese on iPhone? Apple is mum on iPhone OS details until the developer SDK release in February 2008. A quick examination of iPod Touch Japanese input reveals Apple has chosen to stay with Hiragino Pro Gothic OpenType. Japanese text in the browser mode is slow but this is the trade off Apple made staying with the OpenType rasterizer. The Japanese glyph set was likely seriously pruned and the Japanese input of MacOS desktop has been replaced all together with a new method created by Toshiyuki Masui. There is a YouTube clip of it in action here: <http://japanese.engadget.com/2007/10/04/ipod-touch-hidden-feature/> **TSR**

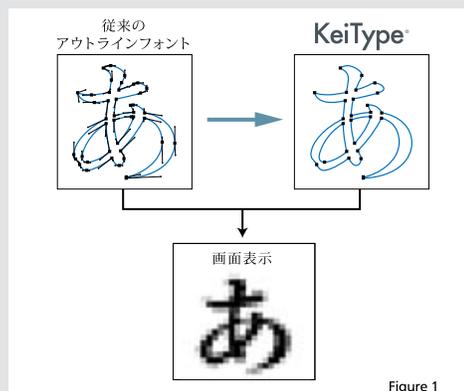


Figure 1

which is coming next year. DeNA does not see iPhone as a threat. "We might consider optimizing our pages if Apple sells a few million iPhones here, but convergence just isn't an issue for us," said Nagatoshi.

In the end, convergence really is a non-issue. Inexpensive, universal mobile Internet access has

created a vibrant market in Japan that is connecting people and commerce in creative new ways. The arrival of the iPhone and competitors will only push it in new creative directions. It will be fascinating to watch those developments and the rise of mobile ad market in America as well. **TSR**