

The Second Wave of Japanese Desktop Publishing

JAPANESE DTP ARRIVED just over a decade ago with Apple's NTX-J PostScript printer and Linotype's first Japanese PostScript imagesetter. They came at the right time: The early-'90s economy was bubbling, companies had money to burn and Japanese DTP took off. It was a young, booming market and it forgave many mistakes that would haunt the industry later.

By 1996, the go-go days were gone and they would not come back. By this time, DTP tools (Quark Xpress, Illustrator, Photoshop and, to a smaller extent, PageMaker) had captured nearly 40 percent of the production process. For a conservative industry like Japanese publishing, this was phenomenal—until compared to the West. There, in the same amount of time, practically the entire industry converted to DTP production. Japan is still about 40 percent and holding.

What happened? Three things: the economy, the failure of Western technology to address Japanese issues, and the same old cultural differences Westerners have been running into since Commodore Perry knocked down the doors in 1853. They just do things differently here.

The economic crunch hit the publishing market hard, and it hasn't really recovered. Consider the book and magazine market: On average, this year's revenues are down 3.4 percent over last year.

Books and magazines	
1997	2,637,416 million ¥
1998	2,541,508 million ¥
1999	2,460,700 million ¥
2000 (Jan-June)	1,232,445 million ¥

The advertising industry has been down, but has recently shown signs of recovering: On average, revenues are up 10.4 percent so far this year.

Advertising	
1997	5,038,567 million ¥
1998	4,772,064 million ¥
1999	4,647,553 million ¥
2000 (Jan-June)	2,675,668 million ¥

Basically, the publishing industry overextended itself in the bubble years of the early '90s and is still adjusting.

Some of the difficulty is the publication distribution structure. Anybody in the business will tell you there just isn't enough shelf space and return rates are climbing. Internet publishing is not much of a factor yet. Japanese book retail laws, which prohibit stores from selling below suggested retail prices, will be relaxed soon and will put tremendous pressure on the current price structure, which supports lots of marginally profitable items.

Hiragino Mincho	W3	愛の国
Hiragino Mincho	W6	愛の国
Hiragino Kaku Gothic	W3	愛の国
Hiragino Kaku Gothic	W6	愛の国
Hiragino Kaku Gothic	W8	愛の国
Hiragino Maru Gothic	W4	愛の国

Hiragino. In Japan, Mac OS X will include a family of fonts, Hiragino, with an impressive 17,000 characters.

The Japanese market is also a highly segmented one. There are the major newspapers, which have very specialized workflow systems and in-house fonts. There is the book industry, which runs the gamut from standard *bunko bon* hardbacks to the ingenious, very popular pocket-size *tanko hon* paperbacks (which really have no equal in the West). There are lots of printers, using both DTP and traditional systems, that cover everything in-between. In a class of their own are *manga*: the hefty weekly comic books you can find on subway luggage racks, left there by salarymen too embarrassed to take them home.

On the whole, the industry is still in a slump and has been treading water for the last few years, with relatively little investment in new technologies such as computer-to-plate. At the same time, competition and consolidation in the printing sector have forced prices down—more than 30 percent in the past year alone—so there is a great need to reduce production costs and increase

Adobe's final solution for the Japanese font problem is OpenType. OpenType will be a very big deal and, in the long term, fundamentally change the market.

efficiency. This is the great challenge of the Japanese publishing industry. Meeting it will require new investment in hardware and software. The challenge for vendors is to provide the right products. Those who watch the market and listen to customers carefully will find opportunity.

The font technology failure

A designer once said, "Fonts are like air." They are the environment in which DTP lives and thrives. Compared to the West, the Japanese DTP air is pretty thin.

One of the great tragedies was the refusal of Shaken KK, the largest, most popular, and perhaps most beautiful Japanese font library, to license its faces to Adobe or have anything to do with PostScript. It kept its proprietary machines and formats, losing 40 percent of its market share (and lots of prestige and talent) in the bargain. The industry is filled with ex-Shaken people. A low point came a year and a half ago when tax raiders found several safes in the company basement filled with 10,000-yen bills; the president of Shaken had stashed away the money in the early '80s and was now reporting it as profit.

This sorry state of affairs had two huge repercussions. It denied a large part of the Japanese font legacy to designers working with DTP. (Imagine a world without Helvetica and Times and you get the idea.) It also left the only other competitor, Morisawa, which did license its library to Adobe, with a practical monopoly. But these were not the only problems.

Initial problems. The first implementation of Japanese PostScript Type 1 fonts had serious shortcomings. First of all, they could not be downloaded on a per-job basis, but had to reside permanently on the printer. This turned the production process upside down; service bureaus and printers were suddenly dictating to designers which fonts could and could not be used.

For every PostScript device, users had to invest in font licenses—and Japanese fonts are very expensive. In a market where making a single face can easily require ¥30,000,000 (about \$280,000) and consume two years, font vendors made sure they got maximum return on their investments. To this end, Morisawa and Adobe came up with the idea of marketing two flavors of PostScript printer fonts: low-resolution (up to 600 dpi) and unlimited. A single unlimited-resolution Japanese font costs ¥218,000 (about \$2,000).

The situation became more complex when ATM J arrived on the scene in late 1993. Morisawa's ATM fonts used hardware binding to lock the font to the hard disk. This resulted in a high maintenance operation, because hardware binding required installer floppies for each font and for every CPU. (This remains true even today.) If the user got a new hard disk, he had to send the old floppies back to the vendor and exchange them, for a fee, for new ones. Large operations had the extra burden of keeping track of the floppy that had been installed on each CPU. On top of all this, each installation took time; putting a family of 15 Kanji fonts on two or three Macs could easily eat up a day.

In addition, compared to traditional systems, these fonts had primitive typographic features: lack of pair kerning, lack of proper metrics and poor Gaiji support. (Gaiji are Kanji characters outside of the current JIS [Japanese Industrial Standard] and Unicode encoding sets and are not included in a standard font. They comprise many "unofficial" Kanji characters, mistakes and misinterpretations, and seldom-used Kanji passed down for generations, long before printing presses and governments created standards. These Gaiji characters are widely used in people- and place-names. To this day, they are a reason for publishers to hang on to their proprietary systems.)

Last but not least, Japanese PostScript fonts were not cross-platform.

The first fix. Adobe has been trying to fix the font problem. Its first attempt was CID (character-key ID). CID divorced two-byte PostScript fonts from dependence on any encoding scheme and allowed character subsets to be downloaded to the printer on a job basis, laying the foundation for PDF font embedding in Japanese Acrobat 4.0 as well.

Unfortunately the CID font upgrade was a marketing wash-out. Upgrades were not cheap, and there were few benefits the end user could really see. Morisawa also decided to tweak some glyph designs and the font metrics. Designers would open old files with the new fonts and find they had to redo everything. They stayed away in droves. As a result, the installed base is still overwhelmingly OCF (original composite font), which has slowed acceptance of PDF as a major production format.

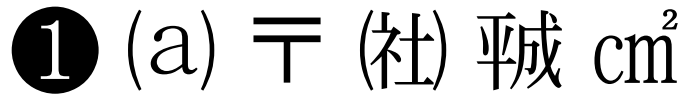
Dueling fixes

Adobe's final solution for the Japanese font problem is OpenType. OpenType will be a very big deal and, in the long term, fundamentally change the market. OpenType finally brings true font parity between Windows and Mac. Morisawa and Fontworks are busy preparing OpenType upgrades. It marks the first time their font libraries will be available cross-platform. Both companies see Windows as an opportunity for revenue growth—something that has been missing on the Mac side for years. Users will finally be able to choose the platform that best fits their needs and budgets without worrying about font problems.

This will be especially interesting because Mac OS X and OpenType are both arriving in 2001. According to a Japanese Publishing Consortium survey in 1999, Apple has nearly 80 percent of the DTP installed base. However, a large share of the machines in the printing and publishing areas (but not in design) are pre-G3 PowerPC systems that will have to be upgraded to run Mac OS X. Apple Japan's "We'll let the market decide" marketing statements may become a true nightmare if the market chooses Windows instead of Mac OS X.

AJ 1-4. The most important feature of Japanese OpenType will be the Adobe Japan 1-4 character collection. This is the big Gaiji fix everybody has been waiting for. AJ 1-4 addresses the Gaiji

Annotated forms. These include shorthand glyphs for such Kanji as “corporation limited,” specially designed numbers, etc.



encoding problem and provides a consistent and cross-platform way for font developers to add Gaiji to OpenType fonts. Adobe says the collection is “to provide professional publishers with a glyph set that will suit their needs.”

AJ 1-4 will add 6,000 glyphs. They will include additional Latin characters: macroned vowels, italic forms, fractions, third- and quarter-width numerals and punctuation and Latin ligatures.

They will also offer a rich set of Kanji:

- Annotated forms. These are popular ‘shorthand’ glyphs for such Kanji as “corporation limited” as well as specially designed numbers.
- Hiragana, katakana and Kanji ligatures
- Alternate kana for horizontal and vertical writing
- Ruby glyphs. These are special kana characters that are placed next to difficult Kanji to show readers how to pronounce them. Many software DTP packages offer this feature. However, traditional ruby glyphs are a different design so they are easy to read at the small point sizes in which ruby glyphs are always used. With OpenType, these special designs can finally be included in a Japanese font.
- Kanji and Kanji variants. Anyone familiar with Japanese knows the language has changed more in 200 years than English has. Particularly after World War II, many Kanji were simplified and, even though the older, more complex Kanji disappeared from newspapers, magazines and school textbooks, they still live on in books, maps and proper names. There are also many different variations of certain Kanji, such as the ‘nabe’ character for the name ‘Watanabe’ (see illustration).

AJ 1-4 was created by Adobe in cooperation with Morisawa, Fontworks and other industry experts. It’s not going to satisfy everybody, but it’s an excellent effort that should take good care of the majority. The only drawback is timing, coming as it does on the heels of the CID upgrade catastrophe. Adobe and Morisawa are planning to market two packages: Standard, which will have the same features as current CID fonts, and Pro, which will have AJ 1-4 Gaiji and advanced layout.

Character layout. Advanced typography is another major OpenType feature and one that, until now, has been an elusive goal. After all, Apple has been pushing advanced typography for years, first with QuickDraw GX and now with ATSUI (Apple Text Services for Unicode Imaging) in Mac OS X. Apple is still pushing its solution; the Hiragino fonts for Mac OS X will include both OpenType layout and Apple Advanced Layout (AAT) tables.

Advanced layout is not a trivial feature to add, particularly for a complex written language such as Japanese. As noted in the Gaiji section above, there are all kinds of ligatures, vertical variants and arcane Kanji. But a well thought-out and executed set of features can vastly simplify the user experience and address many shortcomings of Japanese DTP.

Variation Kanji. Certain characters, such as the ‘nabe’ character for the name ‘Watanabe,’ have several equally valid forms.

WATA	NABE		
渡	辺	JISX0208-4253 (UNICODE-8FBA)	
渡	邊	JISX0208-7820 (UNICODE-908A)	
渡	邊	JISX0208-7821 (UNICODE-9089)	
Nabe variations Adobe Japan 1-4			
邊	(AJ14235)	邊	(AJ14240)
邊	(AJ14236)	邊	(AJ14241)
邊	(AJ14237)	邊	(AJ14242)
邊	(AJ14238)	邊	(AJ14243)
邊	(AJ14239)	邊	(AJ14244)

One example of how this can be used is Morisawa’s new Mincho Kyoiku font. This font family has special glyphs required in Japanese school texts that help children learn how to write. Because it is based on the standard Mincho design, Morisawa digital type manager Nobuo Tomita said, it would make sense to implement the different glyphs as variants in the standard Mincho font package instead of selling them separately as they do now.

GX legacies

At the World Wide Developer Conference and at an Apple font developers’ conference in Tokyo shortly afterward, Apple stated that Apple Advanced Typography tables were the “recommended” way to add advanced layout features. One Apple engineer described the differences between the two approaches this way. “AAT is pretty much a superset of OpenType [layout], with much better performance. There’s no real pressure for us to do this [support OpenType layout directly in ATSUI].” The Hiragino OpenType fonts for Mac OS X have both AAT and OpenType layout tables.

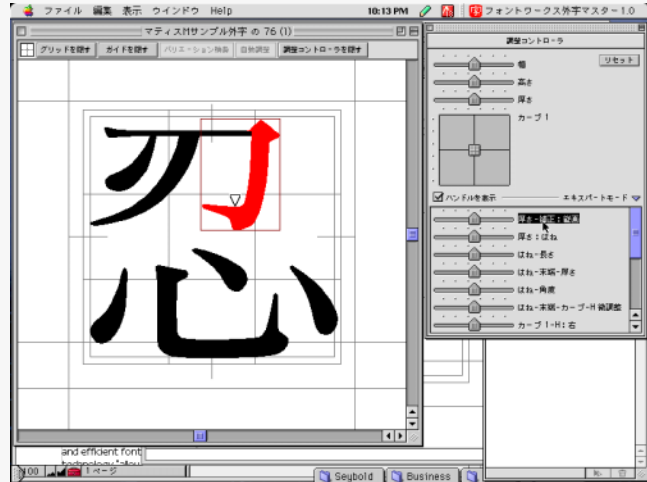
ATSUI is a system-level API, while OpenType layout is an application-level API. One very nice thing about ATSUI is that application developers don’t have to know all the details of font table formats and how to process them. ATSUI just takes care of it. OpenType layout requires the application to do all the processing, so developers have to know a lot about a language if they want the features to work right. On the Windows side, there is the OpenType Layout Services Library, which helps somewhat; but whether on

Stroke Fonts: The Future of Japanese Type?

OpenType, the Adobe Japan 1-4 Character Collection and Unicode do a good job of breaking the current limitations of Japanese fonts. Unfortunately, encoding is not the only problem. You also have to create all those extra Kanji. The proposed Adobe Japan 1-4 character set alone is 6,000 characters. One of the glaring deficiencies of current outline technology is that every single Kanji must be traced and tweaked extensively. A regular Japanese font has nearly 7,000 characters; add the Adobe Japan 1-4 character set for OpenType and you have a whopping 13,000 glyphs.

Take that total and multiply by each weight (light, demi-bold, bold) that has to be designed, and you have an idea of how much work goes into font-making and why Japanese fonts are so expensive. The fonts are large—anywhere from 3 to 8 MB each—and they are not very efficient, which is one of the reasons why Japanese Multiple Master fonts will never happen.

An interesting feature of Mac OS (both 9 and X) is the Open Font Architecture (OFA) that evolved from QuickDraw GX. As the name implies, OFA is an open plug-in architecture. It works with any font technology, be it PostScript, TrueType, or a completely new technology, such as stroke fonts created specifically for Japanese-Chinese-Korean writing systems.



Gaiji Master. This program allows the designer to import, modify and fine-tune stroke parts to create high quality Kanji glyphs quickly and easily.

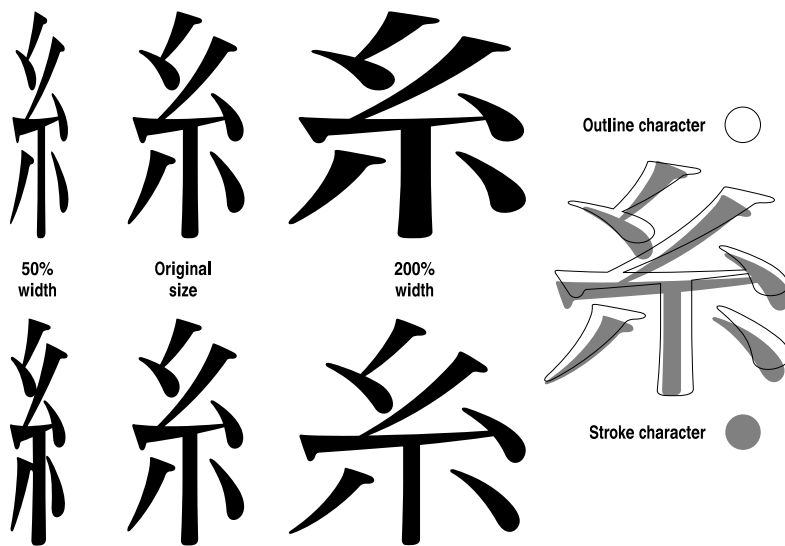
Recombinant parts. Anybody who has studied Chinese or Japanese knows that although each Kanji is unique, certain parts occur again and again, recombining to create new characters. You can get a good feel for this by looking at Chinese or Japanese calligraphy. The brush is the most natural way to write Kanji, and with a little study, you quickly comprehend the strict order of each stroke.

In a similar way, Fontworks International broke down its Kanji fonts into parts that loosely correspond to brush strokes. These stroke parts are kept in a library that the stroke-font scaler uses to draw the character, resulting in a much smaller and more efficient font. Torsten Buck, Fontworks technical director, told me that stroke technology "allows us to do weight variations over the full range from Light through Ultra Bold without losing typographic details," all in a 4-MB font. An equivalent PostScript Kanji font family can weigh in around 18 MB.

Where stroke technology really shines is character creation. Once a base library of parts has been created, a designer can create high quality Kanji quickly and easily. A key

In an **outline character**, the individual strokes are 'merged' into a single outline. The only way to change the width or height of the character is by scaling the outline, resulting in stretching or compression of the design. Note the resulting

changes in stroke weight in the vertical strokes and distortion in the shapes of horizontal and angled strokes. The angle and size of the serifs are also no longer consistent with the original font design.



In a **stroke-based character**, it is possible to make changes to the width or height of the character by changing the construction recipe data. Even at such extremes as 50% and 200% of the original width, it can be seen that the stroke

weight, serif size and head angles are correct. It has also been possible to re-position the strokes correctly for the new designs. The typographic quality and design integrity of the character are not compromised by the re-sizing process.

Stroke Fonts: The Future of Japanese Type? (Continued)

feature of stroke technology is that it preserves the stroke width as the part is scaled, which is impossible to do with PostScript outlines.

To create a new Kanji, you simply use a similar character, swap out the parts that need to be changed and, perhaps, fine-tune them.

Stroke fonts are a great technology to break the Japanese font logjam of high cost and limited design. It could do for Japanese fonts what Fontographer did for Western typography: put real power in the hands of designers and open up the floodgates.

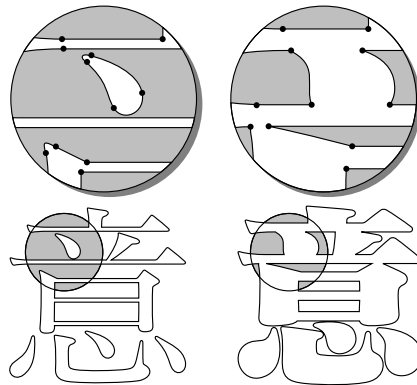
Apple fumbles. Unfortunately, Apple doesn't see this as an opportunity. It creates great things like ATSUI and OFA and then forgets about them, leaving third-party developers holding the baby. When Fontworks approached Adobe's InDesign team to discuss stroke font technology, Adobe didn't even know what ATSUI was. Clearly somebody in Apple Developer Relations wasn't doing the job.

Fontworks's original plan was to have full-blown Japanese stroke fonts with advanced typography and multiple weights. But in the face of Apple's indifference, it postponed the plan and instead released Gaiji Master last February. This is a slimmed-down, Gaiji-only version of 2x2, Fontworks's heavy-duty in-house stroke font development environment. It is a fascinating piece of software, and it reminds you of the early Macintosh days when the graphics software was thrilling and cutting-edge.

E-book opportunity. One reason why Fontworks went ahead with this is that it believes e-books and e-publishing could be a huge market in Japan. And stroke fonts could be the key. As Fontworks President Ross Evans put it, "For that to happen, fonts have to be as easy to read on a screen as they are in a book, otherwise people won't adapt to it. Fonts have to be designed for the technology."

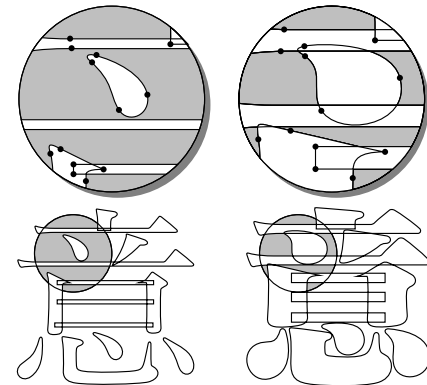
Japanese and Chinese Kanji are complex and don't hold up well at small point sizes on computer screens. They break down com-

With **outline font technology**, blending is not possible between characters of widely separated weights due to differing numbers of objects and vector points.



This feature of stroke font technology means that it is possible to easily generate fonts in a virtually unlimited range of weights, almost as a 'by-product' of the production process.

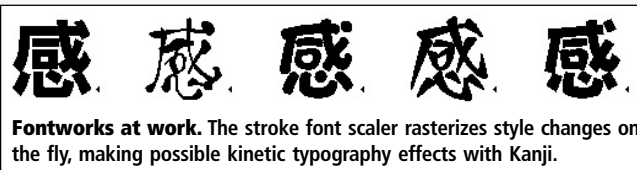
With **stroke font technology**, even characters of widely separated weights have the same number of objects and corresponding vector points, which means that blending is possible across the entire range of weights in a font family.



It also makes possible a variable weight font - a single font containing all the data necessary for the user to specify a weight anywhere on a sliding scale from light to ultra-bold.

pletely with bold and italic faces. All of the currently popular Japanese font faces were designed for print and are not screen-optimized. LCD screens that display up to 210 dpi will be coming soon from Sharp. But as Evans explained, "Even that is far less than a laser printer at 600 dpi. It has taken Shaken 18 years to build up their library of 150 fonts. How are they going to optimize them for the screen? With stroke technology we can do that far, far faster than anyone can."

He showed me demonstrations of what the technology can do. The stroke-font scaler rasterizes everything in real time, without any heavy multimedia code. The quality appears very attractive for Web publishing.



Evans continued, "This is the future of type. How can you have this stuff happening in Kanji unless you have stroke fonts? Apple can do this and nobody else can ... if they wanted to support the technology."

Joel Breckinridge

In the end, Japanese OpenType's greatest achievement will be that it delivers most of the features the high-end customers have been asking for: It will finally bring the Japanese printing environment to the same level the West has had for years.

Windows or Mac, application developers will not find it easy to implement OpenType layout.

Adobe, of course, has the advantage over the competition here because its own type layout library, Cooltype, is built into every Adobe application. Adobe will pull out the stops and bundle the KozukaMincho Pro OpenType Kanji font, which of course does not have AAT tables, with InDesign J, due to be shipped in the first quarter of 2001.

Unhappy developers. Apple's AAT solution might be better technology, but some font developers are not amused. Morisawa's Nobuo Tomita said, "Apple has not been very forward with their plans.... AAT has lots [of features] that don't have much to do with Japanese. We plan to go with Adobe's cross-platform solution." If Morisawa doesn't support AAT, then the case is pretty much closed.

Adobe, predictably, isn't very enthusiastic about AAT either. "I went over to Apple and told them to just kill it.... We went through this whole thing with GX already," said Adobe's Asian Font product manager Julie Ma. Given Apple's lack of marketing enthusiasm for ATSUI—it is ignoring some fantastic third-party technology that makes use of it, such as Fontworks International's stroke font technology (announced at Tokyo Seybold two years ago)—it is understandable that developers are hesitant. Quark, for one, is hedging its bets; when asked which technology it plans to go with, Masato Nishimura of Quark Japan said, "We'll wait to hear from our customers before we make any decisions."

Another Apple move not sitting well with font developers is the additional Gaiji characters that are part of the 17,000-character set in the Mac OS X Hiragino OpenType Pro fonts. These go well beyond the Adobe Japan 1-4 collection.

Not much is clear at this point, but the extra Gaiji appear to be another ATSUI-only feature guaranteed not to work with Adobe software (nor with any other application that does not support the Apple API). The feature by itself is not bad, but Apple has not communicated with Japanese font developers well, and that is bad. The developers need detailed information to define their own OpenType features and to make sure it all works seamlessly with Hiragino and Mac OS X, and that information has not been forthcoming. As one font developer moaned, "Just when things are looking better, this happens and everybody loses." If Apple really wants Mac OS X to be the best publishing solution, it will have to get its Developer Relations act in high gear, and fast.

In the end, Japanese OpenType's greatest achievement will be that it delivers most of the features the high-end customers have been asking for: Gaiji, robust cross-platform support (allowing developers to put both OpenType layout and Apple's AAT layout in the same package), and embedding and dynamic downloading. It will finally bring the Japanese printing environment to the same level the West has had for years. As Adobe Japan's Seiichiro Miyajima, group manager for product marketing said, "To put it simply, it will be the same as using Roman [one-byte]." The timing for Japanese OpenType is difficult, but the benefits are very real. The industry will get there—eventually.

Japanese layout and the promise of InDesign J

In order to really understand the differences between Japanese and Western layout, you have to go back to elementary school. Think back to second grade when you were just learning cursive; the teacher gave you a piece of paper with lines. This was the bottom line, that was the top line. She taught you to write along the bottom line.

In Japan, the students get a piece of paper with rows of little boxes. The teacher tells the kids to write Kanji characters in the centers of the boxes. Japanese typographic layout is exactly the same; it is all based on little boxes, known as virtual bodies. It is also called the grid system, because the middle of each box is one center point on a grid. Everything is calculated from the center; there is no baseline. The whole system makes sense when you realize it all comes from the days of block type; the virtual bodies are blocks of metal type set end to end. The vocabulary, the measurements and the aesthetics all evolved from that.

Virtual bodies. Unlike DTP layout, which is graphics-driven, Japanese text composition, called *kumihan*, is driven by how much text will fit in a given space. Designers know how many characters (virtual bodies) are supposed to be on a line and on a page before they start composition, and this is how they discuss layout with writers and editors. Western composition is calculated from margins, a wholly different concept.

Adobe Japan InDesign product manager Hiroshi Miyamoto, who has typesetting experience, explained the difference. "It's very important for [Japanese] operators to know the number of characters on each page, and it's difficult to work that way with PageMaker, Quark Xpress and Illustrator. PostScript Japanese fonts (OCF, CID, OpenType) have no virtual-body information whatsoever, and historically there is no baseline in Japanese *kumihan*. But since PostScript fonts have only baseline information, that's how all DTP software developed. Japanese fonts have different baseline positioning, so that when you change the font, the line breaks change. Traditional systems used the grid system, so as long as you kept the same size, any font line breaking stayed uniform, and even if you did change the size, the grid made it very easy to make adjustments. If you are trying to calculate grids in Xpress, the point system doesn't match well, so you end up with too many, or too few characters on the page, and the designer compensates by incrementing in .01-point values, which is overkill.... Also it's very difficult to handle pages that have both English and Japanese, a real problem for magazines."

It's not impossible to do quality *kumihan* with DTP. It just takes more effort than traditional systems, and everything has to be done manually, which is inefficient. For text-heavy and specialty market segments still using traditional or proprietary systems (news-papers, books, *manga*), the cost benefits of DTP are just not there.

Japanese engine. InDesign J, announced this past February at MacWorld Tokyo and due to be shipped in the first quarter of

2001, is the first major piece of DTP software that follows Japanese typesetting conventions. To this end, InDesign J has a special Japanese typesetting engine and Japanese layout grid. Because there is only baseline information in PostScript fonts, InDesign J calculates and creates a full-width *zenkaku* virtual body, and this allows the designer to calculate the number of characters in a line, on a page or in an InDesign text frame, based on point size and line spacing.

Another basic Japanese *kumihan* function that professionals expect to have is known as Ji-Dori-Gyo-Dori. In traditional systems the priority is:

1. Calculate additions to the previous line, if the first character of the next line is a punctuation mark.
2. Calculate the shift kana so the first character of the next line is not a punctuation mark.
3. Calculate the average spacing of each kana.

This sounds easy to do, but it's not, for two reasons. First, as noted above, everything is calculated from the virtual body's central grid point. Second, there are special sets of punctuation characters and Kanji known as "Classes." Proprietary systems have these highly specialized line-breaking rules and Class settings built in, so they can automatically calculate and adjust the spacing very quickly. They are also very good with mixed Japanese and English, which is half-width: two Roman characters equal the width of one Kanji.

InDesign J has all these features. InDesign also has support for the *kyu* measurement standard used in traditional systems, where one *kyu* equals 0.25 millimeters. Quark Xpress supports *kyu* too, but Adobe promised that InDesign will have a more accurate method to calculate Japanese *kyu* and will eliminate errors that occur in the current versions of Xpress and PageMaker.

Quark's reaction. Quark is not standing on the sidelines. "We foresee strong growth in the market as Japanese font technologies become richer and easier to use. More and more designers will feel comfortable using DTP and especially Quark Xpress instead of traditional typesetting methods," Desktop Systems Product Manager Masato Nishimura explained. He could not discuss specific features of Quark Xpress 5.0J, other than saying it will not be carbon-compliant. "That version will be a release subsequent to 5.0." But he did mention some features requested by Japanese Xpress users that will very likely appear: placing each character in a desirable position (center) even if a line contains characters of different font sizes; scaling characters by center line grid in line-width increments in vertical text; enabling users to easily keep a full-width *zenkaku* type setting mode for all Japanese characters and punctuation.

However, Quark will not pursue InDesign's approach of matching all the features of traditional *kumihan*. Adobe has followed the Japanese Industrial Standard (JIS) X4051 typesetting and composition specification (written by an ex-Shaken employee, no less), which is the *kumihan* "bible." (Follow it and you'll never commit compositional sin.) Quark has not. "We want to give the most important features to the majority of users," Nishimura explained. "Many designers feel they have enough features already," a sentiment I have heard from others in the industry. From a layout perspective, the current tools are good enough. But they are

not good enough for the unconverted 60 percent who are dealing with composition rather than layout.

So the big question is, will this new environment, the second wave of Japanese DTP arriving in 2001—OpenType, advanced layout, Gaiji extended character sets, cross platform Kanji, InDesign J, Quark Xpress 5.0J—finally convince the unconverted to make the change to the open standards-based digital workflow that DTP has to offer? The answer: definitely maybe.

Cultural differences

"At this point I don't think the issue has to do with technical reasons," Toppan Printing KK Publishing Information Center's Shinichi Konno, told me. "It has to do with middle managers and their way of thinking. Many companies know they have to move to a digital workflow at some point; some are even feeling panicky, but those kind of people don't want to take the responsibility for changing over." Having worked in the Japanese publishing industry for more than ten years, I can attest to the very conservative mentality of middle managers, and I can even agree—up to a point. I have been in many situations where a company desperately wants to change but doesn't know how. If you listen carefully and talk with the managers on a level they understand, amazing transformations can take place. But it takes time and patient effort.

There is another factor at work, too: *shokunin* mentality. "Shokunin" is a tricky Japanese word. The dictionary translation lists the word as artisan or craftsman, but the nuance implies a long apprenticeship, an obsession with quality and detail and pride—traits the Japanese are famous for. I call them specialists, and Japanese culture does cherish specialists. The publishing industry is full of them, and if there is one thing you don't do, it is tell a specialist his business. But specialists tend not to see the big picture. They focus on their own little area of expertise and have trouble understanding company-wide benefits of digital workflow.

This is where Adobe is playing a smart, subtle hand with InDesign J. It is using Japanese standards such as JIS X4051 and is also using all the specialty words. The marketing material is carefully scrubbed clean of foreign words such as layout (*recauhito*), and text (*tekisuto*), instead using native specialist words like *kumihan*. Even the official product name foregoes the lazy 'J' for Japanese that most product names go for, using the formal "*Nihongo ban*" instead.

Quark, too, has a solid, if slightly different, vision. "The nucleus of our strategy is media-independent publishing, the next generation publishing model that encompasses print, Web, E-books ... and beyond," Nishimura explained. He said Quark hopes to free publishers to create and manage content so they can deliver it anywhere at low cost, with a layout appropriate to each media format.

It sounds good, but here again—and this is the whole point of this article—developers simply cannot do a localization job and sling their products out in the market. It takes time, careful study of market needs, and thorough knowledge of the segments and specialties therein. For example, media asset management has not

done very well as a category in Japan. But it can, as it has for CRS Systems, the Japanese localizer and distributor of Canto's Cumulus. CRS has seen Cumulus gradually grow from a software package into an intranet integration business, as Japanese managers slowly understand the cost savings from integrated workflow. However, like the font and layout situation, it has to happen in a Japanese context to which *shokunin*, the specialists, and middle managers can relate.

Conclusion

Current Japanese DTP workflow is far from perfect. It is expensive and unreliable; it has primitive typography and layout and a limited variety of Kanji fonts that lack necessary Gaiji characters. Perfect Japanese DTP workflow should have a rich set of fonts, rich typography, layout and composition, Gaiji character sets, and the

ability to pass files between computers seamlessly and print without any problems.

The second wave of Japanese DTP will not magically convert the unconverted. It will be a gradual change, as companies see and truly understand digital workflow as cost reduction *and* potential revenue growth. The highly segregated nature of the Japanese market also means there are plenty of specialty niches to fill with all manner of InDesign plug-ins, Quark Xtensions and flexible media management systems, giving the 60 percent all the more reason to convert to a standards-based digital workflow.

A friend once told me that Japanese society is like an egg. In the West, the shell is brittle. A small amount of force from the inside can break through and bring change. But the Japanese shell is tough and rubbery; a small force can only bend the walls. It takes much more force to break the Japanese egg. But once it breaks, change can come very quickly. The publishing market will take time, but it will change. And change is opportunity.

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