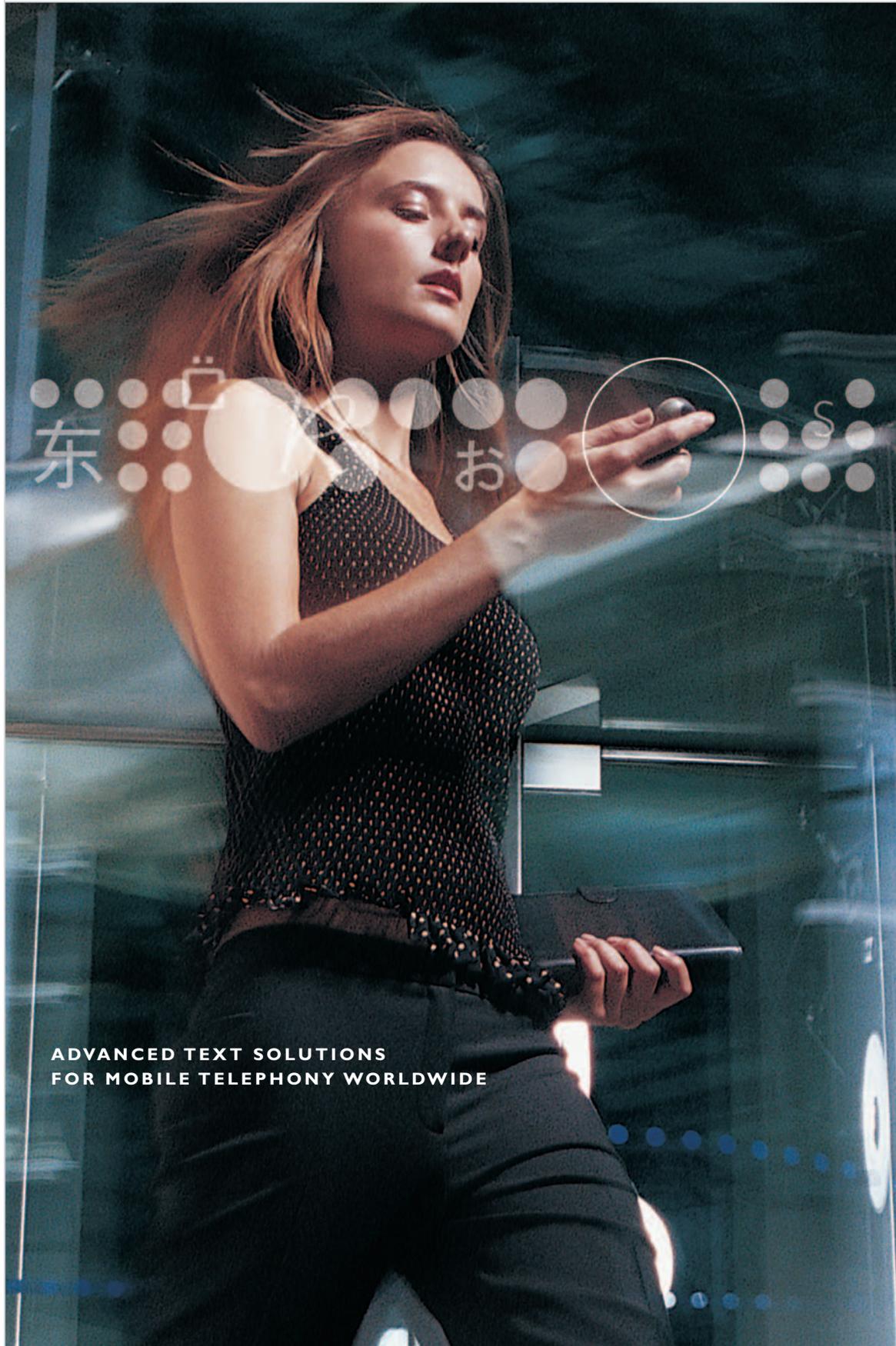# Mobile Solutions

Consider what's in the message your phones are sending: **Text**

ADVANCED TEXT SOLUTIONS FOR MOBILE TELEPHONY WORLDWIDE

Monotype Imaging

Want to succeed

in mobile telephony?

Text enables features and functions — no matter what language your customers speak. Text has the power to define the user's experience and make your product stand out from the crowd. To be successful, text needs to:

Personalize. Localize. Differentiate. Brand.

No matter the language. Your goal is to create an experience customers prefer — one they can identify with you and your products.

Monotype Imaging leadership

Monotype Imaging helps customers improve communications through all aspects of fonts and font technologies. A pioneer in the introduction of these technologies to mobile phones — our customers continue to look to us for:

PERFORMANCE

Monotype Imaging technologies are designed to satisfy the particular demands of memory-constrained devices — whether those demands involve legibility, display quality, storage capacity, portability across devices, speed, font choice or all of these.

GLOBAL RESOURCES

It takes worldwide resources to build a global selection of fonts and the technology to use them. Monotype Imaging is an international company with offices in the U.S., the U.K., Germany, China and Japan, with additional resources in Taiwan and Korea. Our professionals include specialists in a variety of disciplines, including typeface design, typographic engineering, language expertise and type production.

MARKET PRESENCE

We produce fonts and font technologies for consumer electronics devices that generate text in a variety of languages. Some of our fonts are part of standard operating systems, including the Windows® and Mac OS® platforms. We also offer a rich assortment of typeface products — more than 100,000 are available from Monotype Imaging's Fonts.com™ store for creative professionals working in desktop environments.

INDUSTRY COMMITMENT

We are active in standards organizations to promote technologies that enable stylized, scalable fonts that display with fidelity and consistency from device to device. We enthusiastically support key standards initiatives and work with major platform partners looking to bring clarity and cohesiveness to the mobile telephony space.

Innovations on display

What text says about you

Whether text enables a preferred customer experience — and whether you can easily scale that experience across markets, languages and product platforms — depends on multiple factors:

- Are typefaces within your product line consistently legible?

- Does the type complement graphical elements that also appear on screen?

- Does the type work inside user interface themes, applications or other mobile content?

- Can your products display complex scripts such as Devanagari, an Indic script?

- Does your product successfully deal with thousands of letterforms (as in Chinese)?

- Can you easily change size, typeface and format attributes (like embolding) to accommodate resolution, screen size, application or other factors?

- Can you create distinctive (brandable) user interfaces?

- Can you offer any or all of these benefits within the resource-constrained mobile phone platform?

- Can you offer them within the resource-constrained environment of your engineering organization?

If not, then consider the Monotype Imaging solution — embedded text technologies and fonts that deliver the complete user experience today's consumers want.

ORIGINAL   FONTS IN A BOX
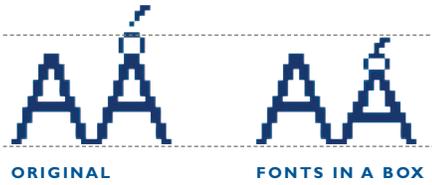
Fonts in a Box™ is an iType® font engine feature that prevents characters from being clipped on small displays — something that doesn't happen in desktop environments, or where limitations associated with small screens don't exist. The problem occurs when diacritics (such as accent marks) should display on top of a character, extending its height beyond the display region for that character. Rather than simply clip the character — a normal action when using standard composition techniques in resource-constrained environments — the iType font engine intelligently reshapes the character. It then appears properly proportioned next to other characters yet fits fully in the display. This capability also applies to descenders (such as the lowercase y), which also might otherwise be clipped.

Text as your customers want it

Consumers look for phones that are easy to use and support the features they want, such as Web browsing, business applications and games. What consumers are looking for is the same text experience they've grown accustomed to on their desktop computers.

SCALE THE FONT, SCALE THE EXPERIENCE

Once the domain of desktop computers, scalable fonts are now available for mobile phones. But scalable fonts don't just scale text. They also scale the experience consumers want — regardless of how different consumers may define that experience or in how many different markets.

Scalable fonts let you:

- Render type at any size supported — for different applications, different screen sizes, different resolutions and different products

- Offer displays with different shapes, sizes and resolutions — to support many different market requirements and consumer tastes

- Use just one font file for each type design — to fit more designs and more languages in a phone

- Deploy products faster — to offer product benefits to buyers sooner

But mobile phones have many constraints. Limitations on memory size, display size and display resolution impose unique requirements on font scaling technology. So does the fact that there are hundreds of different phone platforms on which to port software — rather than the handful of platforms that exist for PCs.

Bringing the benefits of scalable fonts to the mobile phone requires special expertise and technology — plus a comprehensive approach that addresses all factors affecting text display.

That's the advantage of Monotype Imaging.


ARABIC FONT:
MONOTYPE AKHBAR™

HINDI FONT:
LUCIDA® DEVANAGARI

THAI FONT:
MONOTYPE SANS™

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*In addition to **scale**, something else that impacts how characters display is **shape**. Characters from complex scripts may have different shapes depending on adjacent characters. Monotype Imaging's embedded font technology lets mobile phones follow these conventions despite a phone's limited memory capacity.*
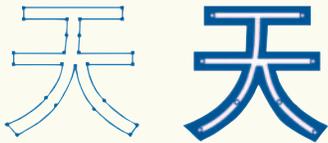
The Stroke-based Character uses megabytes less storage than outline characters when working with East Asian fonts.

INNOVATION ON DISPLAY

Desktop computers change the size of text by scaling it rather than storing individual bitmaps of all characters at various sizes. As mobile phones increasingly adopt scalable technologies, challenges exist as to how to exploit the benefits of scalability in resource-constrained environments. Scalable outline fonts, for example, scale text using points along the edge of the outline. But storing thousands of East Asian characters that way uses a lot of memory. So Monotype Imaging brought forward stroke-based fonts.

In stroke-based characters, points are placed along the center line. Less than half the points are needed to render characters, improving character-generation performance. Reusing graphemes also adds significant savings in memory or disk space requirements.

泊 拍 柏 伯

The same graphemes are used to build various characters, minimizing memory or disk space. All elements combine to create pleasing, easy-to-read characters that are rendered on the fly.

SMARTHINT™ FOR SMARTER PHONES

Another challenge involves how to render East Asian characters at small sizes legibly. The problem: as type scales to smaller sizes, spaces between character strokes may disappear. As a result, intricately shaped characters look blotted.

SmartHint technology — a Monotype Imaging innovation supported by the iType 3.0 font engine — compensates for this effect by correctly preserving spatial relationships while removing some strokes, if necessary, without changing the meaning of the character.

STANDARD:

| 24 PPM | 18 PPM | 14 PPM |

SMARTHINT TECHNOLOGY:

| 24 PPM | 18 PPM | 14 PPM |

THE LIMITATIONS OF BITMAPS

Unlike scalable type that can be rendered on the fly as needed, bitmaps are stored images of previously rendered individual characters.

One limitation of bitmaps is that they consume lots of memory, since many font sets are required to support different sizes or styles, such as bold and italic.

Another limitation is that bitmaps often don't display well in combination to form words. For example, character shapes can't be changed to obey language conventions or enhance readability (such as to add accent marks or to space proportionately).

Nor can sizes be selected for display other than those for which bitmaps have been prerendered and stored. Bitmaps also don't support anti-aliasing, techniques used to soften jagged effects around curves and edges.

PHONE PERSONALITY TYPES

Do you target a youth market? Is your brand geared more toward the busy professional? Perhaps you're looking to target multiple market demographics with a single offering.

Monotype Imaging's ESQ® (Enhanced Screen Quality) Mobile collection contains typefaces based on the TrueType® and OpenType® formats targeted to express user interface themes, content, services and applications — while still respecting the technical limitations of mobile phones.

ESQ Mobile fonts are sourced from Monotype Imaging's vast typeface collections, including the Monotype®, Linotype® and ITC® libraries. ESQ Mobile fonts have been fine-tuned by typographic specialists to ensure maximum fidelity and readability at small sizes. East Asian ESQ Mobile fonts are SmartHint-enabled, stroke-based designs.

Fonts continue to be added to the ESQ Mobile collection. Designs are based on distinctiveness and appropriateness for user interface applications and for the ability to convey branding and style.

ESQ Mobile fonts from Monotype Imaging allow you to personalize user experiences or enhance them by conveying style and expression.

Friendly
ITC Bauhaus® Medium

Athletic
Crillee™ Italic

Powerful
Kobalt™ Bold

Exotic
ITC Benguiat® Gothic Medium

Romantic
Nadianne™

Clarity
Univers® Regular

Smart
Friz Quadrata™ Regular

A complete Solution:

ESQ MOBILE FONTS
- Latin-based
- Chinese
- Devanagari
- Arabic
- Many more

+

i|TYPE®
font engine

+

World Type®
layout engine

ESQ Mobile fonts combined with the iType font engine and WorldType® Layout Engine provide a complete solution that fulfills your text needs, from multilingual font support to enabling the creative expression of mobile themes.

Monotype Imaging brings together the three key elements needed to deploy a great text experience to a wide array of mobile phones: the iType Font Engine, WorldType Layout Engine and fonts especially designed to exploit these capabilities while satisfying market demands for personalization and style.

ITYPE FONT ENGINE

The font engine is software that renders characters from fonts for display by applications on a device. The iType font engine has been specifically optimized to bring the benefits of scalable fonts to the resource-constrained environment of mobile phones. Based on the TrueType and OpenType industry-standard font formats, the iType font engine supports Monotype Imaging innovations.

ESQ Mobile fonts allow you to complete user interface themes and enhance applications and content with stylistic designs — all while improving legibility on mobile devices.

ESQ Mobile fonts support the following:

- Linked fonts enable applications to use characters from multiple fonts even if there isn't enough memory to load all the fonts at once.

- Stroke-based fonts ensure that East Asian characters are stored with the smallest possible footprint.

- Multilanguage support lets phones work with most of the world's writing systems, including Latin, Cyrillic, Chinese, Indic, Japanese, Korean, Hebrew, Arabic and Thai.

- SmartHint technology renders East Asian characters so they are more legible at smaller type sizes.

- Fonts in a Box makes text with diacritics such as accent marks and descenders such as the lowercase y fully viewable on small displays.

WORLDTYPE LAYOUT ENGINE

While the font engine renders individual characters, the layout engine determines how these characters are rendered as a block of text on the display. This is an especially challenging problem in writing systems such as Arabic where one character may be substituted for two other adjoining characters or where characters may have different shapes based on their positions in a sentence. Other layout issues include where to allow line breaks or spaces between characters and whether text reads (and the cursor advances) left to right or right to left.

Like the iType font engine, Monotype Imaging's WorldType Layout Engine is optimized specifically to work on (and port to) the world's diverse population of mobile phones and also support most of the world's writing systems. The WorldType Layout Engine complies with the Unicode™ universal character encoding specification, an industry standard that enables electronic text to convey all the world's written languages and symbols.

The mobile ecosystem

Network operators

Do you want to move creative, value-enhancing services and applications to market quickly? OEMs may not have installed the fonts needed to support your applications. Or the manufacturer may have embedded type as bitmaps, making type hard to change to support new applications or to enter new markets — especially such markets as Asia.

Monotype Imaging removes these barriers with technology that makes deployment, tailoring and localization of type fast and easy worldwide.

NETWORK OPERATORS WANT

- More fonts than OEMs have already embedded in phones
- A "create once, deploy many" approach
- More compelling applications — so high-speed data networks have greater perceived value
- Differentiation and branded experiences
- The ability to localize content to target markets
- More product offerings going to market faster

WHAT MONOTYPE IMAGING DELIVERS

- Scalable font choices tailored to the mobile environment
- Ability to port applications device to device
- Distinctive typefaces allowing operators to better differentiate services
- Freedom from OEM embedded fonts — type designs that "complete the theme" or enable high-quality display of branded content
- Easy character substitution, reshaping and other complex layout effects
- Creative freedom

OEMs and ODMs

Do you want to create your own brand presence in worldwide consumer markets? Do you want to present a more inviting target for application developers and operators looking to port value-adding applications and services to your many phone models?

Building Monotype Imaging into your platforms enables you to meet both objectives with technology and fonts optimized specifically for international deployment on mobile phones.
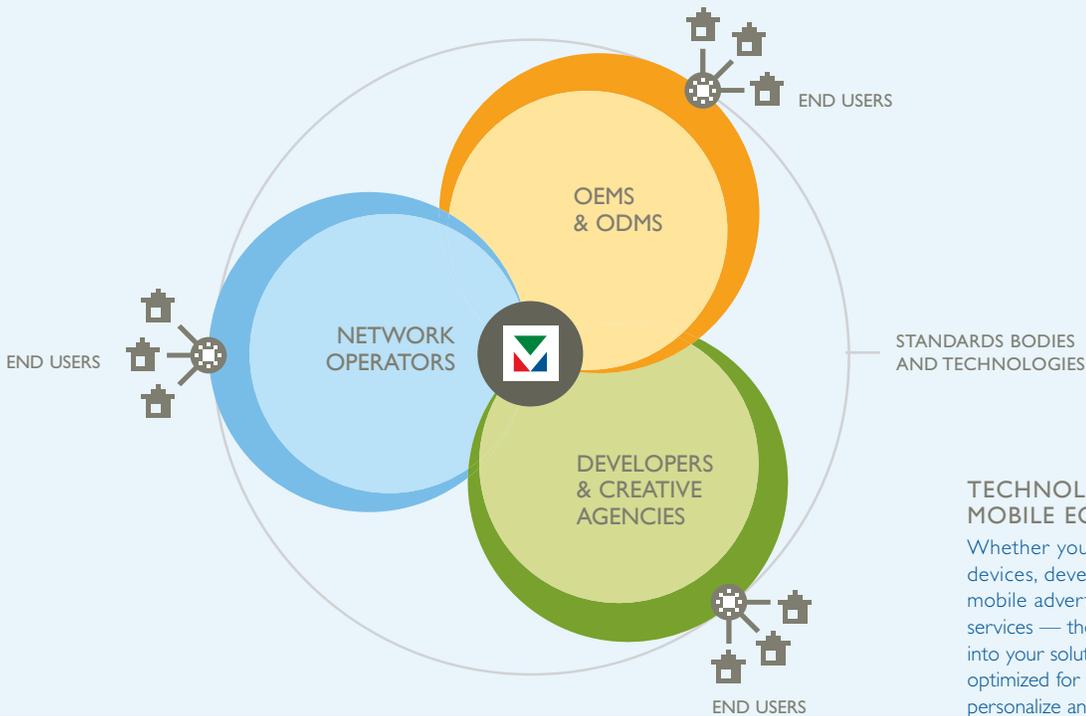
WHAT OEMS AND ODMS WANT

- Higher brand awareness
- Greater value differentiation
- Faster time to market
- Products moved to multiple platforms faster
- Ability to more quickly address finer consumer segmentation
- Ability to more quickly capture emerging markets
- Text readability

WHAT MONOTYPE IMAGING DELIVERS

- A unified development environment with multilingual support
- Robust complex text composition
- Comprehensive multilingual font offerings
- Scalable fonts that offer font choice, readability, layout and time-to-market advantages that bitmap solutions can't match
- Bitmaps with the same high-quality design and consistency as scalable type — wherever bitmaps are the most practical solution
- Font technology that's small enough, fast enough and flexible enough for the target environment
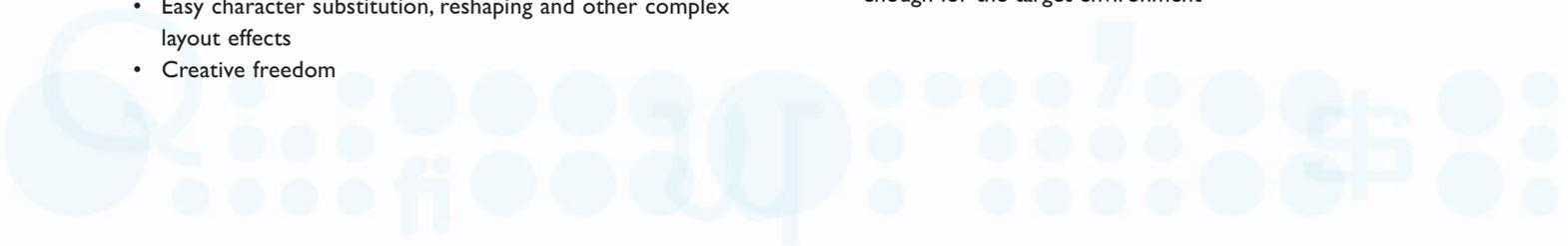
With its global resources and market presence, Monotype Imaging is at work throughout the ecosystem of mobile telephony — including standards environments that are a key to advancing text fidelity and consistency from device to device. Consumers get what they want — the high-quality experience they expect.

END USERS

OEMS
& ODMS

END USERS

NETWORK
OPERATORS

STANDARDS BODIES
AND TECHNOLOGIES

DEVELOPERS
& CREATIVE
AGENCIES

**TECHNOLOGY FOR THE
MOBILE ECOSYSTEM**
Whether you make equipment, design embedded devices, develop applications, design content for mobile advertising or operate mobile telephony services — the ability to embed mobile font technology into your solutions is critical. That's font technology optimized for mobile phones — ready to customize, personalize and localize for global markets.

END USERS

Developers and creative agencies

How does your text look on mobile phones? Does it have the same impact as when displayed on a desktop computer? Does text complement the graphic elements in a way that engages end users?

Monotype Imaging lets text express content in the style to which users have become accustomed — no matter the platform or language. Fonts are a proven way to influence and appeal to users' emotions. Get the response you want from the creative effects you create — on any phone to which you deploy.

DEVELOPERS AND CREATIVE AGENCIES WANT

- A wide selection of fonts that look great on cell phones
- Flexibility to choose fonts that not only express creativity and emotion but also differentiate and personalize
- Fonts capable of delivering unique and compelling branded experiences
- The widest possible audience for content
- The ability to use technologies for the phone based on industry standards
- The ability to consistently deliver stylized or branded content that will be displayed as it was intended to be viewed

WHAT MONOTYPE IMAGING DELIVERS

- ESQ Mobile fonts that have been optimized for high-quality display on mobile phones
- Font designs that complement user interface and content themes
- Typefaces or custom designs that can be tailored to work within branded content and applications
- Support for multiple languages
- Scalable fonts based on TrueType and OpenType standards — yet fine-tuned for the small screen
- The iType font engine and WorldType Layout Engine — solutions that handle text rendering and text layout functions

Standards leverage your investment

A great solution is not a profitable business if it must be reinvented each time it is transferred to another device. That's why Monotype Imaging supports key standards in the embedded space — and why the company works closely with standards leaders.

Our relationship with QUALCOMM, for example, means that adopters of the BREW® solution can leverage Monotype Imaging's fonts and font technologies. The BREW solution includes a development platform and content-delivery system for deploying graphically rich content across a broad range of low- to high-end mobile phones.

Our partnership with Symbian means that Monotype Imaging technology will be part of the Symbian OS™ SDK and that adopters of Symbian OS will experience the benefits of successful text deployment.

Our partnership with Ikivo, a leading provider of industry-standard Mobile SVG (Scalable Vector Graphics) solutions, is bringing the benefits of stylistic, scalable fonts to the SVG environment for creating rich media applications and content.

Other platforms compatible with the iType font engine include the Linux®, Java™ and HTML/CSS platforms. We also work with key standards-setting organizations such as the Java Community Project, the Khronos Group, MPEG, Unicode and the DVB (Digital Video Broadcasting) Project.

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