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WGR Presents:

Mobile Entertainment analyst

In-depth coverage of the wireless entertainment business

Wireless Pornography –

A Delicate Balancing Act for Wireless Carriers

by Adam Guy

Having already spent billions of dollars on spectrum licenses, infrastructure and marketing, wireless carriers around the world are growing desperate for additional revenue to support their 3G business plans. It should come as no surprise that many carriers are turning to digital adult entertainment—a descendent of the world oldest profession—for a little bit of ROI.

For the past few years, it has become almost clichéd to say that the 3G business model depends on compelling applications. If history teaches us anything, it is that the mass market will pay for pornography. From the early days of the printing press to the advent of photography, VCRs, video cameras and the Internet, pornography has been not only the premier moneymaker but also a driver for technological innovation. On the Internet, innovations like image management software, live video, pop-up advertising and real-time credit processing are all largely dividends of the demand for pornography.

As the wireless marketplace evolves to more closely resemble fixed-line Internet, it is only logical that pornography would be among the first profitable applications.

There are two basic models for using wireless networks to monetize pornography. The first is to use the wireless channel to drive traffic to other pornographic venues, such as wired Internet sites. The second model involves the actual sale and distribution of pornographic content via the wireless airwaves—made possible by the next-generation technologies.

Wireless as a Marketing Channel

An example of the first model is Barcelona-based Private Media Group—the notorious distributor of hard-core pornography. The firm's "Private Stars" service involves sending SMS messages to a porn star (the mobile number is advertised in a number of adult

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Mobile Games in Korea

by Michael Thuresson

Nowhere on Earth is there a greater concentration of game players and developers than in South Korea. It all began when PC network games catapulted to prominence in the late 1990s via the country's PC bang (Internet café) phenomenon, which coincided with a period of rapid broadband connectivity growth. As a result, US gamers are familiar with famous Korean titles such as NC Soft's Lineage and Game Venture's Fortress2 blue. Lineage has over 6 million registered users. Fortress2 blue is Korea's most popular network game with more than 10 million registered users.

Coming to Wireless

In recent years, as downloadable wireless games have fundamentally changed the way Koreans wait for trains and kill time, a tremendous shift has occurred. Korea's hyper-competitive game development community has embraced the wireless medium, and with an almost fanatically export-focused and IT-savvy government behind them, they have begun to transfer scores of games to emerging overseas markets. These battle-tested titles are now invading — you guessed it — the United States.

US publishers, carriers, handset manufacturers and development houses have recently begun to feast on content from the world's most advanced and competitive game market. In September 2002, Nokia announced an agreement with the Korean Game Development and Promotion Institute (KGDPI), a South Korean government-funded entity. The deal calls for Nokia to provide technical support, advance access to handsets, and special access to channels of global distribution. "While today we do these things with selected individual developers, this is the first time that we've signed an agreement with such a government-

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(Editor's note:We're changing the format of Short Messages this month. Instead of one rather short article, this section is becoming a "Month in Review" column. Collect them all for an unabridged history of our little industry. Send email to leaks@wirelessgamingreview.com if you've got news that should appear here.)

New Games Announced Last Month

The holiday game release schedule is no less brutal in mobile than it is with consoles and PCs. Game releases came early and often in November, with the overarching story being that huge brands are moving quickly to mobile.

One of the biggest titles came from **JAMDAT**. It published **Vicarious Vision**'s first wireless game, Activision Inc.'s **Tony Hawk's Pro Skater® 4**, for wireless. **Verizon Wireless** signed a two-year alliance with **New Line Cinema** to promote **Lord of the Rings**. Verizon launched a LotR website and is promising mobile games to go with the logos, ringtones and other content. The games should be released just before the movie goes live on December 18th.

Thumbworks, that also did Etch-a-Sketch, is bringing **"Suzuki Motocross Challenge"** to Verizon as well. Think of the cross-marketing opportunities as the motocross season gets underway this spring.

Also released with a major film, **Handy Games** announced the availability of **"007 Ice Racer."**Available on **Vodafone Live** for J2ME handsets including the M50, 3410, GX10, 7210 and 7650, the game puts you behind the wheel of a very small Aston Martin Vanquish. We tried **Danjaq's** ExEn version of the game and were not impressed, but Handy Games has a great reputation for J2ME, so hopefully the mainstream versions are better.

SonyEricsson is also playing off the Bond hype, with product placement all through the film. SE has kicked off their publicity campaign with a Flash-intensive web site, multinational TV commercials and an assortment of contests.

More brands on the way… **THQ** licensed the unbelievably great **Worms World Party** from **Team17**. THQ will have an exclusive worldwide development license for the game, except in Korea, where **M Dream** has the rights. **Hexacto** is already promoting their version of the game, which runs on **Microsoft's** Smartphone OS.

Gameloft and **WES** have both signed on to deliver Java games to O2 subscribers in Germany. Gameloft also announced plans for expansion into the UK, Ireland, Austria and France (on i-mode).

According to the company, **In-Fusio** has been named **Orange's** preferred mobile games service supplier. Under a new agreement, In-Fusio's ExEn service will be offered to all of Orange's 21 subsidiaries across the globe.There are some great games on ExEn (including **Crash Bandicoot**) but some Orange subscribers have reported real frustration at not being able to download their favorite games even though they've got the phones and the service.

Partnerships, Mergers, Acquisitions, Fundings, Openings and Closings

Let's start with the bad news. Last month, **Sprint PCS** announced plans to **lay off** 1600 full time workers and 500 contractors. Most of the cuts will come from back office departments like marketing, IT, network and finance. Also Swedish content provider **Aspiro** applied for "Company Reconstruction" which is Swedish for **bankruptcy**.

Two interesting mobile music announcements… **Zingy**, the self-proclaimed "largest mobile entertainment provider in North America", announced it will provide mobile entertainment products to **MSN Mobile** users. **Sony Music** announced that it is acquiring **Run Tones,** a privately held New York technology company which sells ring tones.

The most interesting partnership deal last month was between **Motorola** and **Handango**. The companies announced a collaboration to use Handango's AMPP wireless download and provisioning Platform for Motorola content. Does that mean that **Nextel** will use Handango too? Noooo.At least not yet.

They're Catching On...

Finally, a roundup of the articles, surveys and reports that indicate the broader business community is catching on to mobile entertainment. **Reuters** summarized the mobile entertainment phenomenon with the phrase **"Gone are the days when a cell phone was just a phone."** They're catching on.

David Fox at **O'Reilly Network** went to CTIA last month and came back with a nice article about mobile games and their makers. It's mostly about the US market, but it's always good to see O'Reilly paying attention.

Both **Yankee** and **IDC** issued positive research reports on the industry.Yankee sees the Western European mobile market having steady revenue growth and subscriber adds next year. In particular, data ARPU is forecast to increase from $2.78 per month in 2001 to $9.71 by 2007, due to games and other services.

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Entertaining Standards—an Oxymoron?

by Paul Goode, Chair, Mobile Games Interoperability Forum

Now that the Mobile Games Interoperability Forum has issued its V1 specification and is in the process of merging its efforts with those of the Open Mobile Alliance, it seems like a good moment to look back on why the MGIF was created, what the MGIF has accomplished and what still needs to be done.

Why Games?

Sex and games have overtaken governments and their military budgets as the key drivers in technological innovations in computing—their impact on Internet network capacity, video streaming and the PC's processing capabilities are well documented. In the mobile world, it is hoped that, alongside multimedia messaging, sex and games will entice consumers to upgrade to color screen phones and faster mobile networks. As far as standardization is concerned, standard interfaces for games are less developed and attract funding more easily.

Why Standards?

If the mobile industry is to deliver compelling games quickly and establish itself as a serious marketing channel for entertainment companies and brand owners, there are commercial and technical issues that need to be addressed. Mobile games are evolving from network based, using technologies such as SMS and WAP, to downloadable, running richer graphics on the handsets. The next phase is recognizing the growing importance of the community aspects of downloadable games, such as high scores and competitions, and incorporating the communication capabilities of mobiles as key elements in game design. There are significant technical challenges in creating games that run on multiple devices, across different networks and use a range of network-based services.

What is currently referred to as the "mobile games platform" is fragmented, with portability and interoperability issues. The success of SMS has demonstrated the importance of the universal availability of a service within a market, irrespective of the network operator or the handset involved. For mobile games, various proprietary solutions are good indicators of what is possible, but mobile's potential for true mass market gaming will be realized when deployment of games can happen easily across the majority of mobile users. Standardization can enable this.

Mobile Gaming Interoperability Forum

It was with these issues in mind that the Mobile Games Interoperability Forum (http://www.mgif.org) was founded in June 2001 by Ericsson, Motorola, Nokia and Siemens to lower the technical barriers in developing games for mobile. In addition to the four founding companies, the MGIF Sponsors are Borland, Capcom, Cash-U, Codetoys, Digital Bridges, iFone, Infusio, Konami, Metrowerks, Picofun, Symbian, Terraplay and THQ.

Why Bother?

Of course there is the question of why anyone should bother trying to standardize such services, instead of leaving it to market forces. However, the key factor here is the need to enable the whole network, not just limited domains. This does not mean that one size fits all, but rather that the widespread adoption of certain interfaces and protocols, while still leaving room for competitive innovation, is the fastest route to converting niche gaming activities into a truly mass market phenomenon. The success of GSM in the mobile industry has been due to the creation of a multivendor environment around a common platform. This has led to competitive pricing and considerable innovation. The tortoise that is the world of standardization delivers more than the haste of assorted hares. It is still important to note that standardization plays a limited role and the bounds of its activity need to be carefully defined. Also, I do not

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What is currently referred to as the "mobile games platform" is fragmented, with portability and interoperability issues.

Stat!

Worldwide Mobile Terminal Sales to End-Users 1Q02 to 3Q02

(Thousands of Units)

Company	3Q02 Sales	3Q02 Market Share (%)	2Q02 Sales	2Q02 Market Share (%)	1Q02 Sales	1Q02 Market Share (%)
Nokia	37,447	35.9	35,089	35.6	32,531	34.7
Motorola	15,030	14.4	15,496	15.7	14,533	15.5
Samsung	11,063	10.6	9,342	9.5	9,030	9.6
Siemens	8,145	8.4	8,247	8.4	8,229	8.8
Sony/Ericsson	4,999	4.8	5,309	5.4	6,009	6.4
Others	27,572	26.4	25,220	25.6	23,424	25
Total	**104,256**	**100**	**98,703**	**100**	**93,755**	**100**

Source: Gartner Dataquest 2002

Technology Explained

Invidious Displays

by Cashman Andrus

What makes a beautiful phone? A mobile that'll impress your friends, wow your mother and attract admirers at bars? Other than microscopic size (which is so 2000), your best chance of impressing with your mobile is if it has a great screen. And just how do you know what makes a great screen? Read on.

Nearly all computer displays, including those in mobile phones and other portable devices, are based on a few common principles. The first of those shared concepts is the "pixel," short for "picture element," the basic unit of computer graphics. Pixels are normally square (although they don't have to be) and arranged in a grid array to make up the full screen. Each pixel can be individually addressed by software and assigned a value that corresponds to a particular display state. In the simplest black and white display (which you would find in a Nokia 61xx phone, for example), each pixel can have one of two values, black or white (well, dark grey or light green, to be precise). In a more complex, greyscale display, the values could be four, eight or sixteen different shades of grey. And in a color display, hundreds, thousands or millions of different colors are possible, as shown in Table A.

Table A: Common Color Capabilities

bits per pixel (bpp)	*colors*
1	black, white
2	4 greys
3	8 greys
4	16 greys
8	256 colors (palettized)
12	4096 colors (4 bits per color)
16	65,536 colors (5/5/6 bits for RGB)
24	16 million colors (8 bits per color)

To produce color displays, a more advanced concept, the "subpixel," is needed. A subpixel is a fragment of a pixel, which is colored red, blue or green. By combining three subpixels (one of each color), a single, full-color pixel emerges. Subpixels are rectangular and generally three times as tall as they are wide, so that the final color pixel is square. This trick of using subpixels takes advantage of a quirk in the way the human eye works. Because of how the cones in the retina are constructed, it is possible to fool the eye into seeing any possible color by using only the right combination of red, green and blue (RGB) light. Each subpixel provides one of these three colors, so by setting each subpixel to the right value, a pixel of any color can be generated.

Get Liquid

The most common display technology for mobile devices is, by far, the Liquid Crystal Display (LCD). Available in black and white and full-color versions, LCDs resemble a sandwich made of different materials that control the flow of light through them. The simplest black and white LCDs are a stack of six distinct layers: an upper polarizer, two layers of glass electrodes with a layer of liquid crystal between them, a lower polarizer and a reflector. By changing the charge on the glass electrodes, the liquid crystal material will line up in one of two directions, which changes the polarity of light going through it. In one direction, the light is aligned to pass through the upper polarizer, but in the other direction, the light is blocked. In greyscale displays, intermediate polarizations of the liquid crystal allow appropriate proportions of light to pass through. Color LCDs use the same principle but add the extra complexity of an RGB filter on top. By aligning individual liquid crystal cells with colored overlay, a subpixel is created.

Many subtle variations of LCD technology are now in use. There are different ways of driving the screen: passive matrix (cheaper, but tends to blur on quick screen changes) and active matrix (fastest response time, but at higher cost and power drain). There are different solutions for lighting the screen, from reflective to transflective to transmissive, using frontlights, backlights and sidelights. And there are different manufacturing processes and filter tweaks that can lower the cost, raise the viewing angle or improve the color quality. All of these factors are important when designing devices, as the wrong choice can have a big impact on performance and user satisfaction. Just think, how bad would it be to have a pager that you can't read when outside, or a remote control that is unusable in the dark? Unfortunately, no single screen is perfect in all lighting conditions, and all LCDs are based on chunks of glass, which are heavy, fragile and expensive to produce.

This trick of using subpixels takes advantage of a quirk in the way the human eye works.

Totally Organic

Organic Light Emitting Diode (OLED) technology has emerged as the main hope for moving beyond LCDs in portable devices. OLEDs are an extension of a very familiar technology: the common LED, which is used for indicator lights, as

well as screen and keypad backlights in phones. LEDs are semiconductor light devices, which use very little power, produce little waste heat and are very durable and long-lasting. However, because they are constructed using standard semiconductor manufacturing processes, they are fairly expensive (on a per-element basis) and cannot be reliably manufactured in the large arrays needed for a portable screen.

LCDs resemble a sandwich made of different materials that control the flow of light through them.

By turning to organic molecules, instead of traditional semiconductors like silicon and germanium, engineers can build large OLED arrays using processes more suited to mass production. OLEDs are an emissive technology, meaning they need no backlight, and potentially they offer a very high-quality, lightweight and low-power option. There are two main branches of OLED technology: Small Molecule Organic LED (SMOLED), developed by Kodak beginning in the 1970s, uses a process similar to that used for active matrix LCDs. Light Emitting Polymer (LEP) technology, developed more recently by Cambridge Display Technology, uses plastic semiconductors, which can be printed onto a glass or plastic substrate using a process similar to ink-jet printing. Both technologies have been licensed to an array of technology, manufacturing and product partners, and both have started to show up in products, if only in limited use. OLED segment displays and small, bitmapped screens are common in the latest Asian phones, but they tend to be used only for external "caller ID" displays, while the main screen is still color LCD.

Before OLED main screens become common in phones and other mobile devices, a variety of problems need to be solved. Color is an important issue; the existing displays mostly use only a single color in each element, without the subpixel arrangement necessary to display full color. Full color displays have been demonstrated in labs and prototyped, but manufacturing has not yet begun. Longevity is a difficult issue as well because organic molecules, by their nature, are likely to degrade with time and use. For commercial use, OLED displays need to last at least as long as the product does, which means one to three years of constant use for a mobile phone. Early prototypes had not only a short life, but an inconsistent one—certain colors would degrade faster than others, so a full-color screen would gradually lose its red, even while green and blue still worked. As an emissive display, brightness is also very important, so the screen can be seen in direct sunlight. But the most important element is manufacturing cost. OLEDs, especially the LEP variety, have the potential for very low-cost construction. Color LCD screens are now the most expensive elements of modern phones, so offering a cheaper, high-quality OLED replacement would ensure rapid adoption.

Paper and Ink

A little closer to the realm of science fiction, we find two attempts to digitize the most successful display technology of all time: paper and ink. While they take different approaches, both try to build ultra-low-power, reflective screens using flexible materials at extremely low cost. The first is Gyricon, a research project from Xerox (www2.parc.com/dhl/projects/gyricon/), which is working on "electronic paper."

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Handset Highlights

Nokia 5100

Modes: GSM/GPRS 900/1800/1900
Price: $200-300
Screen: 128 x 128 pixels, 4096 colors
Apps: MIDP Java
Available: February 2003

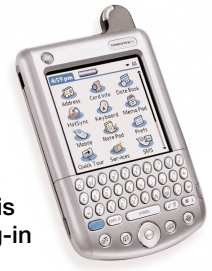
If anyone still thought mobile phones were just for yuppies, the Nokia 5100 would show them otherwise. Sporting such unusual features as a thermometer, sound meter and flashlight, this is a state-of-the-art phone that thinks outside the box.

Sony Ericsson T608

Modes: CDMA 1xRTT 800/1900, AMPS
Price: ?
Screen: color
Apps: MIDP Java
Available: Q1 2003

Sony Ericsson's first CDMA 1x phone will also be the first CDMA phone ever to offer Bluetooth capability. Expected to be available first from Sprint PCS in the USA.

Palm Tungsten W



Modes: GSM/GPRS 900/1800/1900
Price: $550
Screen: 320 x 320 pixels, 65K color
Apps: Palm OS
Available: February 2003

Palm takes on the Blackberry with this new GSM smartphone. The emphasis is clearly on data, since a handsfree plug-in is required to make a voice call. Still, Palm can't be counted out yet.

Nokia 6800

Modes: GSM/GPRS 900/1800
Price: ?
Screen: 128 x 128 pixels, 4096 colors
Apps: MIDP Java
Available: February 2003

Nokia has unveiled a unique approach at easing the text-entry problem. In normal operation, the 6800 looks like a regular phone, but with the flip open, a full thumb keyboard is revealed.

Games in Korea

Continued from page 1

affiliated organization," says Lee Wright, director of Global Developer Marketing at Nokia's Dallas headquarters. "It is a testament to the quality of the games that we see coming from developers in Korea, which is, in turn, a very positive reflection on all of the good work being done by the Korean Game Development and Promotion Institute."

The IMF Supports Games?

US companies would not have nearly the access they do if not for the Korean government's nurturing support. It has been crucial to creating this gaming nirvana and fostering an environment ripe for international content deals. After the International Monetary Fund floated South Korea $60 billion in 1997 to address the country's financial crisis, much of this money eventually filtered down to capital-hungry startups and, in turn, game developers, through programs like KGDPI. "The Korean government has given the game industry strong support through its non-profit organizations that promote Korean contents overseas," says Phillip Yi, vice president and COO of Web Eng Korea, a mobile entertainment provider in Seoul.

> These battle-tested titles are now invading — you guessed it — the United States.

An agile government agency born of the economic need to export, KGDPI takes IMF money and trains and houses game programmers; offers them ancillary services like accounting, PR, and sales support; and gives them a shot of venture capital when needed. Even Korea's lofty central bank, Bank of Korea, has gotten behind the country's game software machine. It offers preferential lending terms to small, export-focused companies, a contingent dominated by software developers ever since the global IT/semiconductor market went south. According to the Ministry of Commerce, Industry, and Energy, Korea's exports decreased by 7.1% to $90.23 billion in the period from January through July 2001. The report stated that this decrease is mostly attributable to a drop-off in the export of semiconductor chips and computer products, down 63% and 37%, respectively. In contrast, the Information Ministry reports that software exports were up 150% for the same January to July period.

Serious Business, Fun Content

Despite taking their role of global leader in game exporting so seriously, the Koreans churn out an unbelievable amount of fun content. "The US publishers we bring to Seoul are blown away by the quality of content, the breadth and depth of it," says Edward Moulem, director of Digital Media Business Development for iPark Silicon Valley, another IT/media-focused government entity. iPark, founded by the Ministry of Information and Communication (MIC) and the Korea IT Industry Promotion Agency (KIPA), has offices in major tech trade centers like Tokyo, San Jose, London, and Shanghai. The Silicon Valley office is the hub of Korean wireless game importing to the US; Moulem estimates that mobile games comprise 40% to 45% of total digital media imports.

iPark orchestrates transpacific deals by regularly hosting seminars at an exhibition center in Seoul. Companies such as Activision, Vivendi/Universal, Electronic Arts, Konami, Disney and THQ have recently made the journey, where they are personally escorted to a showroom floor, given their own display table, and introduced to the best development talent Korea has to offer. Moulem likens the freewheeling activities there to the Wild West, with deals often being cut right on the showroom floor. "We run 75 to 100 developers through the room. There's usually a full day of meetings from 9 in the morning to 5 or 6 at night, with developers meeting one publisher after another. It's exhausting, but you see a lot of great content." Wireless game developers often show their wares on their own laptops, and iPark supplies the necessary consoles for display and even provides each US company with its own translator.

> Even Korea's lofty central bank, Bank of Korea, has gotten behind the country's game software machine.

What iPark has accomplished provides evidence of what is possible once superficial cultural and geographical barriers are lifted. Any American that claims that Asian content has little appeal to US consumer tastes, or that the overall success of wireless entertainment in Korea has little relevance here, would face a strong argument from the US companies placing major bets on Korean talent. "A number of US companies have opened up offices in Seoul to leverage the content and to take advantage of the services of some of these developers," says Moulem. "We have signed up around 95% to 97% of all US game publishers to a relationship with iPark Silicon Valley. You can save up to 40% or 50% on your development costs by farming it out to the Koreans." Cheaper costs to market. Superior content. Game

translatability. Few logistical impediments and easy access to the Korean market. Not surprising, with all of these factors, that a number of other US companies have joined the feeding frenzy.

Localization and Distribution

Moulem indicates that, for the most part, the games being imported to the United States don't involve much language and therefore do not require too much localization. This is key because taking games from point A, in a Korean developer's library, to point B, part of a US carrier's service, is a complex process. The growing complexity of the different US carrier service plans, the question of handset availability and integration, software protocols, developer revenue splits, and the leftover cultural gap—all of these raise issues, which are largely foreign to Koreans, that have spawned an international service niche. "These Korean companies don't know how to do business here and need an agent to guide them," says Paul Trowe, president of Evolution Consulting, a channel partner for iPark that places Korean games with US publishers.

> "These Korean companies don't know how to do business here and need an agent to guide them..."

Trowe's business is based in Austin, Texas—about as far removed from Korean culture as you can get—once again signifying the cosmopolitan appeal of great games and the translatability of Korean content. "A cool game is a cool game in any language or culture," says Nokia's Wright, just up the road from Trowe at Nokia's Dallas headquarters. Wright explains that there is great enthusiasm for games with Asia-designed characters here, especially among younger consumers. With the US market just beginning to tap into the upside of this demographic, we can expect more deals like the one recently made by Web Eng Korea.

Web Eng Canada operates as the North American portal for its Korean partner, and the company announced a deal in November that involves importing several Korea-tested games. The immediate focus is to optimize the games for new US J2ME devices with color displays, such as the Nokia 3650 and 7210 models, and the Motorola T720 and i95cl handsets. According to the press release, some of the first available titles for the Nokia 3650 and Motorola T720 will include: Fishing King, Fallen Angel, Commanders, Double Block, Match Puzzle, Animal Bingo and Killing Boss.

After doing some detailed technical and cultural legwork, the company brings these titles directly to US carriers. "Aside from the tweaking needed to suit carrier implementations of J2ME and the devices that are available to consumers in the US and Canada, there are several other things that we take into account—language translation, game title changes to appeal more to our culture, and even specific references within the games must all be considered to optimize the experience for North American gamers," says Tyler Weichel, president of Web Eng Canada. "For example, for 'Fishing King' we not only modified the types of fish to those that are more commonly found in North America, but also the types of bait being used to catch the fish."

All of this sounds like fun, which is the most important point to those now waiting for the US game market to mature. The transpacific flow of Korean games will obviously help pick up the slack and attract consumers as US wireless development matures. Once US publishers perfect their wireless offerings, we should also see, as Weichel says, "a raising of the bar". More imports from Korea will help broaden the overall game selection, draw in a wider spectrum of players and, most important, grow the overall consumer market. ■

Stat!

Worldwide Mobile Terminal Sales to End-User Estimates for 3Q02

(Thousands of Units)

Company	3Q02 Sales	3Q02 Market Share (%)	3Q01 Sales	3Q01 Market Share (%)	Growth (%)
Nokia	37,447	35.9	32,996.8	34.1	13.5
Motorola	15,030	14.4	14,681.6	15.2	2.4
Samsung	11,063	10.6	7,259.7	7.5	52.4
Siemens	8,145	7.8	7,215.1	7.5	12.9
Sony/Ericsson**	4,999	4.8	7,183.9	7.4	-30.4
Others	27,572	26.4	27,361.0	28.3	0.8
Total	**104,256**	**100**	**96,698.1**	**100**	**7.8**

** Ericsson sales only in 3Q01. Sony 3Q01 sales included in Others.
Note: This table does not include iDEN sales to end-users.

Source: Gartner/Dataquest (November 2002)

Short Messages

Continued from page 2

A new study by IDC shows great promise in the US mobile game market, predicting the number of total gamers there will climb from 7.0 million in 2002 to 71.2 million in 2007. IDC cites improved hardware, quality content and carrier desperation to drive data revenues as factors contributing to growth. ■

Pornography

Continued from page 1

magazines) and then receiving personalized text and multimedia messages, which include an electronic coupon to access a dedicated Web site with exclusive video content. In addition to a U.S. $10 per-user subscription fee, Private builds a database of mobile numbers that it then can use to entice subscribers to interact with porn stars at peak times, such as late at night. Private offers carriers a strict franchising model that gives Private input into the marketing of the services. Given the implicit skittishness of companies involved in distributing pornography, carriers will welcome the opportunity to offload the responsibility of marketing adult content.

Nowhere is the double-edged sword sharper than in the US...

This summer, Japanese officials exposed the true underbelly of wireless pornographic marketing by shutting down the "Wingiri" scam. The racket simply used a computer to automatically dial thousands of mobile phone numbers and hang up on the first ring. Unsuspecting recipients of these crank calls would return the "missed" call only to find that they had accessed a premium sexual content line—one that costs a lot of money per minute.

Wireless Delivery of Pornographic Content

The first true delivery of wireless pornographic content came from SinPalm. Created in June 2000, SinPalm, a unit of PK Entertainment, pioneered the delivery of erotic stories to Palm and Pocket PC devices. One of SinPalm's more successful markets was business professionals who found themselves reading steamy stories during not-so-steamy business meetings. In the past several years, SinPalm has evolved from a simple channel of erotic text to a comprehensive, sexually diverse portal offering pictures, daily news feeds with sexual overtones and short video clips.

SinPalm's evolution from text stories to full-blown multimedia pornography represents a logical migration from 2G to 3G adult entertainment. Along with next-generation packet-data network upgrades, colorful high-resolution handsets with the memory and processing graphics, audio and video offer a feature-rich environment for adult entertainment.

Playboy, the leading household name in adult content, has enjoyed success in Scandinavia charging users on a pay-per-download basis through a licensing deal with Wireless Entertainment Services, and it has allegedly struck deals with mobile operators Hutchison and Virgin Mobile. In October 2002, Playboy signed a three-year deal with Legend Mobile to distribute Playboy content on CDs and secure digital cards. The first edition, which will contain a series of images, games and editorial material from Playboy magazine and Playboy.com, retails for US $19.95. The two parties expect to expand their joint offering to use wireless networks to deliver adult content.

...the rumor mill suggests that Hutchison will leverage deals with Playboy, Adultshop.com and other adult content providers.

Early next year, 3G operator Hutchison plan to launch its $3 billion 3G data network in the U.K. and Italy. While the carrier has not openly admitted that it is going to marquee adult content, the rumor mill suggests that Hutchison will leverage deals with Playboy, Adultshop.com and other adult content providers.

The Double-Edged Sword

Hutchison's coyness is symptomatic of the Catch-22 that carriers face as they wrestle with the stigma of seedy content. On one hand, carriers are desperate for incremental revenue as subscriber growth slows and expenses mount. On the other hand, wireless carriers maintain such a close relationship with their subscribers that the carriers will be held accountable for any negative impact that distributed content has. Carriers deliberately created this environment, using their walled-garden approach to second-generation wireless data to hold onto the relationship with the end user and avoid becoming a dumb pipe. Unlike the post office, which receives no blame for what it might deliver, the minute a pedophile reaches a young wireless user with a multimedia message, the wireless carrier will bear a share of the blame.

...the mass market will pay for pornography.

In response to this very real threat, the U.K. Home Office, the government agency responsible for internal affairs, recently threatened to create a content regulatory body if wireless carriers cannot come up with a method of blocking hard-core pornographic images to mobile phones and connected devices. Clearly carriers would prefer to regulate themselves rather than answer to government censors. The advent of location-based technology adds an additional level of risk to the equation.

Games We Like

by Matthew Bellows

The Sims Online

It's exceeding strange that, with all the fantasies and imaginary landscapes we can explore via videogames, the most popular one ever, The Sims, has been about recreating a human life in the suburbs. The Sims provided us with the chance to create an additional life than the one we were born with. But while The Sims gave us the chance to choose a new body type, skin color, hair style, house, job, and so on, the main thing it didn't give us was the chance to interact with other "real" Sims.

That's all going to change. I've been playing the beta version of Sims Online for a couple days now. The Sims Online is a revolutionary videogame and a potentially interesting large scale social experiment. In preparation for the official launch, currently scheduled for December 18th, here are some impressions of the online version of the most popular PC game ever.

Location, Location, Location

The most striking thing to me about The Sims Online, is that location doesn't matter at all. While Sim City and the rest of the macro-Sim titles all made location, zoning, circulation and urban planning a key element to the game, The Sims Online hardly acknowledges that it exists. While there are roads through various areas of the game map, a birds-eye view of the city is a case study in urban sprawl. Because Sims can teleport instantly between locations, there is no need for zoning or circulation plans. Maybe, hopefully, this will change as the game world evolves. Maybe the Onliners will form a central city government to seize land by eminent domain for the construction of roads and parks. Now the Sims Online world looks like a checkerboard of land claims.

I'm a sucker for the tragedy of the commons too. If you're ever in Blazing Falls City, come visit Saint Ullr's Chapel, due north of the urban center and right on the edge of the snowfields.

Cooperation and Communication

Since interacting with other people is the whole point of the Sims Online, the game designers have put a lot of effort into encouraging Sims to interact. At a very basic level, socializing is a basic Sim need. One of the eight meters that indicates the health of your Sim is "Social". If you don't spend at least some of your time talking with other Sims, you get unhappy. There's no inverse meter that makes you unhappy for getting into too many stupid conversations, but judging by some of my interactions, there really should be.

Sims have to learn Skills to earn money and survive in the city, and there are any number of training spots to practice Logic, Mechanics and Body abilities. The game designers have encouraged cooperation here by increasing the speed with which Sims gain skills when more people are practicing a certain skill. There are numerous games scattered around the world, most of which require two or more people to play. And when a Sim gets the urge to settle down and build a house, it's much more efficient to pool resources with roommates instead of trying to do everything yourself.

In Sum

The Sims Online is a massive social experiment, like most online games have been. But this one takes place in a fairly familiar world, and so the behavioural observations we learn from playing are more directly applicable to broader society. With millions more people invested in the Sims world than in EverQuest or other online games (The Sims had sold 6.3 million units as of last March; including expansion packs, Sims sold 13 million units) the Sims Online is going to change the way our society looks at online games. And perhaps the way we look at ourselves.

Nowhere is the double-edged sword sharper than in the US, where the country's puritanical past and First Amendment principles are often at odds with each other. On the Internet, speech is as free as it gets, yet last year, Yahoo! responded to pressure to reduce access to pornography from its portal site and discontinued selling banner-ad space to adult entertainment advertisers, in addition to taking other anti-porn measures.

No U.S. carrier (not even the sexiest—MVNO Virgin Mobile USA) has announced its intention to offer adult content, but many have attempted to straddle the issue by offering to test wireless Internet content filters while shifting responsibility for youth access to content to parents.

Another unknown is the degree to which the mass market is willing to experience adult entertainment in public. This is particularly uncertain in the U.S. where adult magazines are delivered in discreet wrappers

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Invidious Displays

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Actually, this paper is a thin plastic sandwich, which embeds a layer of bichromal beads—microscopic, spherical plastic pellets with a black side and a white side. The hemispheres are electrically charged, so that one side is positive and the other negative, like a tiny magnet. Each bead is encapsulated so that it can spin freely but can't leak out. By switching on a mild electric field over a sheet of these beads, they will flip to show one side or the other.

Organic Light Emitting Diode (OLED) technology has emerged as the main hope for moving beyond LCDs in portable devices.

The second is eInk (www.eink.com), which, as its name implies, has produced a kind of "electronic ink." Instead of bichromal beads, eInk uses charged particles inside liquid-filled microcapsules. Each capsule contains two colors of particles, oppositely charged. When an electric field is applied, one color of particle floats to the top, while the other sinks to the bottom. Because only the top particles are visible, the direction of the field determines which color shows. One important difference from Gyricon's approach is that eInk can be deposited onto almost any surface, including fabric, paper or plastic, using standard printing equipment.

For both of these technologies, with the proper array of switching electronics a full bitmapped screen can be constructed; the active elements are made of thin plastic, so the screen will be flexible, roll-able and even foldable—as well as lightweight and shatterproof—and could potentially cost only pennies to manufacture. The problems with bringing them to market are substantial, however. The biggest one is that chemistry is hard; no one has yet figured out how to apply Moore's Law to chemical engineering, and manufacturing a practical product is a serious challenge. Color is also an issue, though some full-color prototype displays have been shown. These problems could well take years to solve.

Now and Soon

So, for mobile devices, the present is all about LCDs. Large displays are the order of the day, with many phones now offering a 120 x 160 or 128 x 128 pixel screen. Color is definitely in, and while most of the first wave offered only 256 colors, more screens now have 12- or 16-bit color (in practice, there's little visible difference between them at this point, at least for reflective and transflective displays). Over the next year or two, this trend is likely to continue, with more phones that have high-resolution, high-color LCDs. But in that time, we will probably see the beginnings of a move to OLEDs. Depending on how fast that technology develops, the move may be quicker or slower, but it's not far away.■

Pornography

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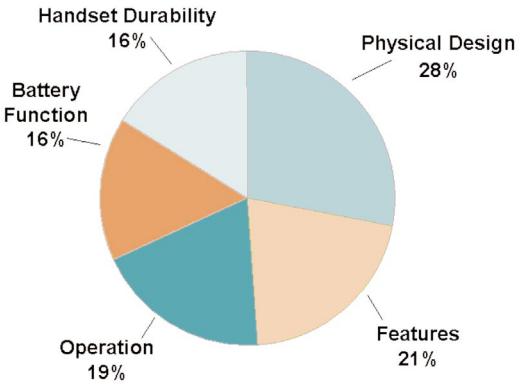
and consumers shudder at the idea of being caught viewing pornography on the subway. Perhaps this is an area where the smaller screens of wireless data are an asset rather than a liability. New high-resolution color displays are difficult to discern unless the user is looking directly at the screen; thus lending a degree of privacy to public viewing of pornography.

Whether the prudish like it or not, mobile pornography is on its way. The potential revenues are just too lucrative for wireless carriers and content owners to resist. Ultimately, carriers will find a balance between offering an open environment and protecting the privacy of sensitive subscribers.■

Stat!

J.D. Power and Associates
2002 U.S. Wireless Mobile Phone
Evaluation Study℠

Customer Satisfaction Index Weights



Source: J. D. Power and Associates 2002 U. S. Wireless Mobile Phone Evaluation Study℠

Standards

Continued from page 3

wish to give the impression that standardization work is necessarily slow; clear focus and cooperation can deliver timely results.

MGIF Initial Accomplishments

The scope of the forum is meant to address issues of portability and interoperability, with the initial focus on the server-side features for network-based games. The MGIF V1.0, released on Oct 21, 2002, provides specifications for a basic set of common, reusable functionalities in the form of programming APIs that address some of the core functionalities for server-based mobile games, such as connectivity, metering, session management, score and competitions, timers and logging. The specifications, related white papers and supporting technical documents are publicly available on the MGIF Web site. The benefits of these MGIF specifications include reducing developers' costs through standardizing access to core game services for server-based applications, as well as reducing the cost of ownership and delivery of games for mobile operators and service providers.

> The V1.0 provides a good foundation, but we would be the first to admit that there is still much work to be done

Feedback on V1 and the Next Phase

The V1.0 provides a good foundation, but we would be the first to admit that there is still much work to be done, especially around enabling client/server interactions. The feedback we have received from some developers since releasing the V1 specification is that they would prefer to see this work addressing more of the issues of interoperability across the network before those of portability. In other words, the MGIF should focus on enabling those areas outside the control of the developer before reducing porting costs. On November 7, 2002 in London, the MGIF hosted an open requirements workshop, gathering input on both server and handset issues to be addressed in later releases. The day included lively debate on the future direction of the industry, and a frank panel discussion between leading handset manufacturers and a number of game developers on what remains to be done. Areas identified for possible standardization include game-related digital rights management and billing, cross-mobile network interfaces, lobbying, tournaments, cross-platform issues, persistence, in-game communication and enabling fast real-time gaming.

Merging with the Open Mobile Alliance (OMA)

It may seem ironic that even standards bodies need their own standards body to coordinate their activities, but that is what the OMA does. The OMA is a recently formed standards body established "to remove the barriers to global user adoption by ensuring seamless application interoperability."—in other words, to pull all the standardization of the various mobile application enablers together into one organization. The OMA is in the process of incorporating the work of the Wireless Application Protocol Forum, the Multimedia Messaging Service, Wireless Village, SyncML and the Location Interoperability Forum. Integrating the MGIF into the OMA will give games a higher profile among the larger mobile community, especially mobile operators. The development of more complex client/server games requires access to handset and network services being defined within the OMA, such as billing, presence management and messaging. The mobile community needs the input of game publishers, game developers and content owners as it strives to become a major entertainment platform and channel to market. The intention is that the MGIF will be integrated by the end of 2002 and established as the Games Services working group. Details of the OMA can be found at http://www.openmobilealliance.org

> ...even standards bodies need their own standards body...

Call to Action

Standards may not seem the most entertaining of activities, but they are important nonetheless. Anyone committed to the success of mobile games is encouraged to contribute to this work. I do recommend visiting the OMA's Web site to find out how to join. This invitation is made especially to game publishers, developers and content owners. Given the emerging state of mobile games, this is a great opportunity to drive its development as a major entertainment channel. ■

Stat!

Top 10 Downloaded Games on Telecom1's TX1 channel

(Sky channel 689) November 2002

1. Space Invaders(tm)
2. Super Golf
3. Iceblade Penguin
4. PhantomEagle 3D
5. New Skool Skater
7. Zapper Racing
7. Combat Tank Attack
8. Zapper
9. Fruit Machine
10. Fishing King

All games are £4.50.

**source: TX1.com*

Contributor Bios:

Adam Guy (adamguy@infotekresearch.com) is Director of Research and Consulting at InfoTek Research Group. Before Infotek, he spent two years as a senior analyst of mobile wireless research at The Strategis Group. Prior to that, he worked as a lobbyist for GTE Corporation, now Verizon Communications. Guy has an MBA from the American University in Washington, DC, and a BA in English from the University of North Carolina at Chapel Hill.

Michael Thuresson (michael@japaninc.com) just relocated to the U.S. from Japan after spending two years in Tokyo as a wireless industry journalist and analyst. He now operates out of San Diego, California, and covers mobile media and entertainment in Japan and the U.S. as a freelance journalist and consultant.

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Cashman Andrus left a career of slinging code and herding cats to co-found Wireless Gaming Review. Before WGR, Cashman was Director of Development at Yesmail and an award-winning application developer for the Palm platform. He earned a Bachelor of Science degree in Brain and Cognitive Science, with a concentration in Computer Science and Linguistics, from the Massachusetts Institute of Technology.

Matthew Bellows Matthew has worked in telecom and the Internet since 1995. Before co-founding Wireless Gaming Review, Matthew was Director of Business Development for Engage (NASDAQ:ENGA). At Engage, Matthew managed the team responsible for 4,000 advertising contracts that drove $30 million in annual revenue. He received his MBA with high honors from the Olin School of Management at Babson College. Matthew's first job in the game industry was as a tester at Infocom, where he spent the bloom of his youth playing Leather Goddesses of Phobos.

Anne McLellan (annemclellan@attbi.com) has varied experience in graphic design and production, with a specialty in publications. Anne has worked as a consultant in corporate training and development, and in marketing, for education and arts clients. She has a BA in Fine Art from Brandeis University, a Graphic Design Certificate from Mass College of Art and studied design and illustration at the Art Institute of Boston and Rhode Island School of Design.

Amy Monaghan (cinetrixie@yahoo.com) Amy has edited research on infrastructure and applications, as well as telecom and media, for Forrester Research Inc. (NASDAQ: FORR). Her background is in science and technology publishing: she has edited publications of the Massachusetts Medical Society, Rockefeller University Press, and Cell Press. Amy holds a Masters degree in English literature from the University of Chicago and a Bachelor of Arts in English literature from Wellesley College. She is not as boring as her career path might suggest, and she rides a black Schwinn Classic cruiser.