



MUG Musings

Volume 2 Number 2

We print ALL THE NEWS that fits

February 2008



To Leopard or not to Leopard, that is the question. Actually the when is more appropriate. I have talked to many members that have already installed it and are enjoying many of the new features. I have installed it on my desktop and my laptop and thankfully have experienced no problems.

There are many articles being written about Leopard and some of them are worth your time reading. Once site is macworld.com which has many articles with links to other sites. If you have already installed Leopard, Apple Mail lets you access many RSS feeds dealing with Apple topics.

If you are interested in purchasing Leopard or some of the other new Apple programs, go to mac360.com. There, you will find discounted prices as listed below. Remember that by purchasing online, you can most of the time, eliminate tax and shipping.

- Apple Mac OSX Version 10.5 Leopard (Single User) \$109.99
- Apple Mac OSX Version 10.5 Leopard (5 User Pac) \$169.99
- Apple iWork '08 \$69.99
- Apple iLife '08 \$69.99
- Microsoft Office 2008 Home & Student Version (3 User) \$130.99

Should you buy a book? The simple answer is yes. There are so many new things in Leopard that having a reference manual is a necessity. Some of the books that I am familiar with are listed below. Most can be found at Borders or Barnes & Noble. The prices listed below are from amazon.com

- The Little Mac Book, Leopard Edition by Robin Williams \$13.59
(This is an excellent book for the new Mac user. I use this book in my Beginning Mac class)
- Mac OSX Leopard: Peachpit Learning Series by Robin Williams \$19.79
(Goes into more detail than the above)
- Mac OSX Leopard: The Missing Manual by David Pogue \$20.99
(Even more detail)
- Teach Yourself Visually: Mac OSX Leopard by Lynette Kent \$19.79
(Uses many pictures and diagrams)

New Nano

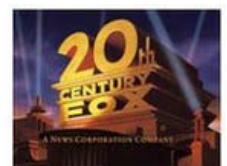


Tuesday, Jan 22nd 2008
by Satsuki Then

I know Valentine's Day is not far away from today, and Apple knows that too. Today, iPod Nano gets a new color, Pink. The 8GB model is the only one that gets the Pink treatment. Pink gadgets are usually associated with breast-cancer awareness charity, however in this case; Apple did not mention any charity benefit on the Pink Nano. Pink nano is now available worldwide.

<http://gizmodo.com/>

Apple & Fox



THU DEC 27 2007
BY JASON CHEN

So not only are Apple and Fox coluding for a movie rental deal on the iTunes service, they've got a special deal in place that allows users to rip Fox DVDs onto their computers. Financial Times isn't clear on exactly how the format works, but from what we gathered from past news, the files are going to be pre-ripped and reside on the disc already optimized for iPod/iPhone or AppleTV formats.

<http://gizmodo.com/>



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MUG Musings is published monthly by the Lincoln Hills Macintosh Users Group as a means of informing the dues paying membership of timely events, educational opportunities, tips and general information. Articles submitted for publication must be received on or before the 20th day of the month to be included in the next issue. All submissions are subject to modification due to space limitations, the opinions expressed in this publication are those of the authors and do not necessary reflect the opinions of the officers or membership of the MUG.

Board Member of the Month



Dave Perkins

First Vice President

David Livingstone Perkins was born in a small, two-room farmhouse in northeastern South Dakota. His mother was so enamored by the Scottish missionary, David Livingstone, that she chose to name her first son after him. What she did not know was that her ancestors were very prominent in the Glasgow weaving industry and that Dr. Livingstone worked in the Glasgow weaving mills to pay his way through Glasgow University. Thus, he probably worked for the family.

David suffered through the Depression and Dust Bowl days of the early 1930's while attending a one-room country school. He completed twelve years work in eleven, graduating from high school at sixteen. He enlisted as a Naval Aircrewman immediately after his seventeenth birthday and spent the next eight years on active duty attaining the rank of Chief Aviation Electrician.

After discharge from the Navy, in 1953, he worked for a brief period at the Lockheed plant in Marietta, GA where he was an inspector on the first production C-130 Hercules aircraft. Then he worked for Northrop Aircraft at Cape Canaveral on the USAF Snark intercontinental missile. This was when the Cape was nothing but a snake, alligator and mosquito infested swamp. There were no facilities there and it was like living at a frontier military base.

In 1957 Dave moved on to the Convair Division of General Dynamics in San Diego, CA where he was a Technical Representative with the USAF on F-102 and F-106

Leopard Tip – Time Machine

Some Mac users of Leopard have been reporting problems with Time Machine not working correctly. It seems even new external hard drives (which are required in order to use Time Machine) aren't playing nice with the application. The solution: reformat your external drive -- even if it's brand new. The drive's factory formatting can sometimes cause problems, so make sure to format it on your Mac before using it for Time Machine. Remember, formatting erases all data on your drive. It's best to make sure there's nothing on there you want to keep.

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delta winged, coke bottle shaped interceptors. It was during flight testing of these aircraft at Edwards AFB he became acquainted with personnel who would later become famous, like the astronaut who stated, "This is one small step for man, one giant leap for mankind."

Upon completion of the Convair contracts Dave went to work for the Lockheed Missiles and Space Company in Sunnyvale where he spent the next twenty-eight years working on the Polaris, Poseidon and Trident Underwater Ballistic Missile programs for the Navy.

This was a most rewarding career which involved much travel both in the United States and overseas. On many of those trips his wife, Isabel, accompanied him. For her it was a vacation and permitted things like visiting her cousins in Spain.

During this time period Dave pursued a degree at San Jose State University and graduated in 1979 with a BA in Art (painting) minoring in writing.

Upon retirement Dave and his wife moved to Grass Valley, CA and became involved in many activities, including writing, painting, gardening, photography and genealogy. After twelve years of idyllic retirement they parted with their dream retirement home and became residents of Sun City Lincoln Hills where they have become active in the genealogy, writing, painting, photography and computer groups.

Dave was dragged kicking and screaming into genealogy because an unrelated lady pestered his mother for family details and she referred this lady to Dave because "he knows all about the family." This really wasn't true but his detailed and scientific mind forced him to "correct obvious errors" in data. The rest is history and almost 40 years of research still has not led to the door unlocking information about his maternal

(Continued on page three)

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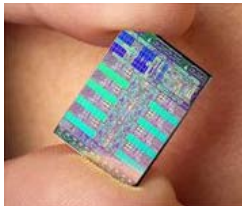
grandmother, Martha Cecil Myers.

Dave has written a number of articles for publication in national magazines, like Heritage Quest, the book 500 Brickwall Solutions to Genealogy Problems, The Parke Society family newsletter, and for several years wrote a genealogy column for The Union Newspaper of Grass Valley, CA. He has lectured on many subjects and organized several genealogy seminars. He has also self-published one 700 page book of his memoirs and has another 700 pages in editing. Currently he is working on two books. A suspense novel and a book about his experiences attending a one-room country grade school.

32-nm Chip

Posted Dec 18th 2007
by Thomas Ricker

Toshiba just announced its membership in an alliance to develop system chips using 32-nm circuitry. That's well below the existing 45-nm processes used in manufacturing Intel's Penryn, for example. The alliance includes IBM, AMD, Samsung (already pushing 30-nm NAND), Infineon, Freescale, and Singapore's Chartered Semiconductor Manufacturing. No surprise really, what with Tosh already in bed with IBM to develop chips using 32-nm processes. The agreement is good until 2010 and covers design, development, and the production of the itty bitty circuitry. A move which should reduce manufacturing costs for the alliance with the savings passed along to us consumers.



<http://www.engadget.com/>



by Dan Tynan

No Wow, No How: Windows Vista

Five years in the making and this is the best Microsoft could do?

It's not that Vista is awful. The integrated security and parental controls are nice, and the Aero interface is as whizzy as it gets. Searching and wireless networking are much faster and easier than under XP.

It's just that Vista isn't all that good. Many of the innovations the operating system was supposed to bring--like more efficient file and communications systems--got tossed overboard as Microsoft struggled to get the OS out the door, some three years after it was first promised. Despite its hefty hardware requirements, Vista is slower than XP.

When it debuted last January, incompatibilities were rampant--in part because hardware and software makers didn't feel any urgency to re-vamp their products to work with the new OS. The user account controls that were supposed to make users feel safer just made them feel irritated. And at \$399 (\$299 upgrade) for Windows Ultimate, we couldn't help feeling more than a little gouged.

No wonder so many users are clinging to XP like shipwrecked sailors to a life raft, while others who made the upgrade are switching back. And when the fastest Vista notebook PC World has ever tested is an Apple MacBook Pro, there's something deeply wrong with the universe.

We have no doubt Vista will come to dominate the PC landscape, if only because it will become increasingly hard to buy a new machine that doesn't have it pre-installed. And that's disappointing in its own right.

PC World contributing editor Dan Tynan used to be disappointed, now he tries to be bemused.

<http://www.pcworld.com/>

Windows XP Upgrade

Submitted by Quincy Pince-Nez
12/19/2007 -

We know this is supposed to be funny but it rings so true. For the record, we have Vista running on Parallels - which runs good- not great. I am also personally writing this from a Sharepoint 2007 deployment certification class that Microsoft teaches in XP, not Vista :(

Review: Windows XP

I have finally decided to take the plunge. Last night I upgraded my Vista desktop machine to Windows XP, and this afternoon I will be doing the same to my laptop.

Look & Feel

Windows XP has quite a cartoony look and feel compared to the slick look of Aero Glass; this is mostly offset by the lack of strange screen artifacts caused by malfunctioning graphics code. You know, almost like static on the screen. This was a once or twice monthly occurrence on my laptop, and happened on my desktop whenever I logged in, and also whenever I played a 3D game after leaving Vista running for a couple of hours. I also miss the "orphaned windows" I got on Vista, dialog boxes that would not go away, in a sense they became part of the desktop, since you could drag a selection from within them, despite the fact that the Glass would render the selection below them. Such crazy graphics bugs appear to be a thing of the past.

<http://www.engadget.com/>

Leopard - Spotlight



Posted Oct 26th 2007

by Mat Lu

How it works: Spotlight was another Tiger innovation that just never quite lived up to its billing. It was hobbled by slowdowns and some bad design decisions on Apple's part regarding what sort of searches you could run. While it's a bit too early to say if it's substantially faster at least Leopard Spotlight goes part of the way towards improving things by allowing you to run Boolean searches with the AND, OR, and NOT operators as well as narrow your search results in various ways. In addition, like Google, Spotlight now knows how to add and define words, so you can run simple arithmetical calculations (e.g. "7+5") or look up words in the dictionary, just by typing them into the Spotlight search box. Spotlight can now also search other Macs on the same local network as well.

Who will use it: Everyone who needs to find things on their Mac(s).

PC is my Hero



There has been a lot of talk in the Mac press about the series of Mac commercials starring Mac and PC and the lack of counter commercials from the PC world. My feeling is that the PC people are smart and see that any attack would be counter productive and would only serve to tear down a lovable character we look forward to seeing at regular intervals, besides PC dresses better.

ED

News you can use Apple



Irwin's Hot Tip

of the
month

Hi

I have been asked at our meetings; how do you open movies in Quicktime, if they are not recognized by quicktime such as avi. movies.

The software that you can download is perian and is found at

<http://perian.org/>

Irwin:-)

iTunes Wi-Fi



Apple unleashed a slew of new things today, and one of the most important things (to me) is the new interface for the iTunes Store, the iTunes WiFi Store. As you might expect, the iTunes WiFi Store lets you browse and purchase music directly from your iPod Touch or iPhone (over WiFi). All music purchased from the iTunes WiFi Store will sync back to your iTunes library (sweet!).

Sadly, it seems this is limited to audio only, no video. Oh, and no word on if you can subscribe to podcasts via this interface (that would be insanely cool).

Posted Dec 2nd 2007

by Dave Caolo

Now that December has arrived and NBC's contract has expired, all of their content has been removed from the iTunes Store, as promised. That means no more Bravo, mun2, NBC, NBC News, CNBC, NBC Sports, Sci Fi, Sleuth, Telemundo or USA Network (Go ahead and look. We'll wait).

It looks like the two companies were unable to patch things up, not surprising considering their ugly, public fighting. Good luck to NBC with hulu and that wonderful NBC Direct service, which sounds great.



It requires Internet Explorer, the NBC Direct Player (Windows only) and the latest .Net framework. Videos are available for only 7 days after they initially air, and disappear from your computer 48 hours after you begin watching them (unless you remember to renew your license before then). Also, videos will only play on the computer used for the initial download.

Mac users cannot use the service, though NBC says a Mac version is "...planned for 2008." Finally, downloads cannot be transferred to portable devices.

Awesome.

<http://www.tuaw.com/>



Heads up Display in 3D



Posted Dec 17th 2007
by Nilay Patel

We've seen quite a few next-gen nav device concepts, but none with as much potential as the Virtual Cable, from a New Jersey company called Making Virtual Solid. The system uses a laser, a set of lenses, and a moving mirror mounted in the dashboard to project a 3D route-guidance line above the road ahead, as though it's actually out in front of the driver. Besides making driving that much more like a video game, the company says mass-produced versions will cost somewhere around \$400 as a factory-installed option, and can be easily interfaced with existing GPS systems. Sadly, there don't appear to be any live videos of the system in action, but judging from the number of patent applications and incredibly detailed schematics and explanations on the website, the vapor factor seems pretty low.
<http://www.engadget.com/>

incandescent light bulbs shelved by 2012

Posted Dec 24th 2007
by Darren Murph

Better late than never, right? Regardless of your feelings on said mantra, the United States of America has finally passed a law barring stores from selling incandescent light bulbs after 2012. 'Course, the EU and Australia have already decided to ditch the inefficient devices in the not-too-distant future, but a new energy bill signed into law this week throws the US into the aforementioned group. Better grab a pack of the current bulbs while you still can -- soon you'll be holding a sliver of history.



Worlds Smallest 1080p Camcorder



We like giving Sanyo heaps of grief over their boxy gear from time to time. But make no mistake, they've nailed it with their Xacti series of solid state camcorders. Meet the DMX-HD1000, their first to record full 1080p, 1,920 x 1,080 resolution video using the HD/MPEG-4 AVC codec. It features the ability to shoot 8 megapixel stills via its 1/2.5-inch CMOS sensor, a 10x optical zoom, 2.7-inch LCD, HDMI-out, and the ability to record direct to SD/SDHC cards for up to 2 hours at a charge. That's plenty of juice since an 8GB SDHC card will only hold about 1 hour and 25 minutes of Full HD recordings. All this in an itty-bitty pistol grip shooter which Sanyo claims is the world's smallest at this resolution. Available in Japan starting mid September for about ¥120,000 or about \$1,000.



Venturer HD DVD Player

Venturer Electronics today announced the launch of its first HD DVD player for the North American market. Responding to strong consumer demand for high definition video playback devices, Venturer will introduce the SHD7000 that offers the superior HD movie experience as defined by the DVD Forum. Featuring 1080i video output and an HDMI connection, the SHD7000 is designed to be compatible with the vast majority of HDTVs already in North American consumers' homes. With Ethernet connectivity to the network, the SHD7000 also allows users to access bonus features from movie studio web servers and unlock special prerecorded content on some HD DVD discs. Dolby TrueHD rounds out the high definition experience by presenting the HD DVD disc soundtrack as it was meant to be heard, virtually equal to the studio master. In addition to its HD DVD playback capability, the SHD7000 will up-convert standard DVDs to near HD picture quality via its HDMI connection, allowing a consumer's existing library of DVDs to look better than ever. CD playback is also supported. The SHD7000 will be distributed in North America by Venturer Electronics of Markham, Ontario, and sold through national retailers with retail prices expected to be one of the lowest among entry-level HD DVD players. Venturer Electronics, headquartered in Markham, Ontario, offers a wide selection of value-priced, high quality consumer electronics products. Since 1988, Venturer has focused on making the latest technologies affordable to North American consumers.
More Information: Email Venturer



Free My Phone

by Walt Mossberg

Suppose you own a Dell computer, and you decide to replace it with a Sony. You don't have to get the permission of your Internet service provider to do so, or even tell the provider about it. You can just pack up the old machine and set up the new one.

Now, suppose your new computer came with a particular Web browser or online music service, but you'd prefer a different one. You can just download and install the new software, and uninstall the old one. You can sign up for a new music service and cancel the old one. And, once again, you don't need to even notify your Internet provider, let alone seek its permission.

Oh, and the developers of such computers, software and services can offer you their products directly, without going through the Internet provider, without getting the provider's approval, and without giving the provider a penny. The Internet provider gets paid simply for its contribution to the mix: providing your Internet connection. But, for all practical purposes, it doesn't control what is connected to the network, or carried over the network.

This is the way digital capitalism should work, and, in the case of the mass-market personal-computer industry, and the modern Internet, it has created one of the greatest technological revolutions in human history, as well as one of the greatest spurts of wealth creation and of consumer empowerment.

So, it's intolerable that the same country that produced all this has trapped its citizens in a backward, stifling system when it comes to the next great technology platform, the cellphone.

A shortsighted and often just plain stupid federal government has allowed itself to be bullied and fooled by a handful of big wireless phone operators for decades now. And the result has been a mobile phone system that is the direct opposite of the PC model. It severely limits consumer choice, stifles innovation,



crushes entrepreneurship, and has made the U.S. the laughingstock of the mobile-technology world, just as the cellphone is morphing into a powerful hand-held computer.

Whether you are a consumer, a hardware maker, a software developer or a provider of cool new services, it's hard to make a move in the American cellphone world without the permission of the companies that own the pipes. While power in other technology sectors flows to consumers and nimble entrepreneurs, in the cellphone arena it remains squarely in the hands of the giant carriers.

The Soviet Ministry Model

That's why I refer to the big cellphone carriers as the "Soviet ministries." Like the old bureaucracies of communism, they sit athwart the market, breaking the link between the producers of goods and services and the people who use them.

To some extent, they try to replace the market system, and, like the real Soviet ministries, they are a lousy substitute. They decide what phones can be used on their networks and what software and services can be offered on those phones. They require the hardware and software makers to tailor their products to meet the carriers' specifications, not just so they work properly on the network, but so they promote the carriers' brands and their various add-on services.

Let me be clear: Any company that spends billions to build and maintain a wireless network deserves to be paid for its use, and deserves to make a profit and a return for its shareholders. Not only that, but companies like Verizon Wireless or AT&T Inc. should be free to build or sell phones or software or services.

What Is Needed

But, in my view, they shouldn't be allowed to pick and choose what phones run on their networks, and what software and services run on those phones. We need a wireless mobile device ecosystem that mirrors the PC/Internet ecosystem, one where the consumers' purchase of network capacity is separate from their purchase of the hardware and software they use on that network. It will take government action, or some disruptive technology or business innovation, to get us there.

To my knowledge, only one phone maker, Apple Inc., has been permitted to introduce a cellphone with the cooperation of a U.S. carrier without that carrier having any say in the hardware and software design of the product. And that one example, the iPhone, was a special case, because Apple is currently the hottest digital brand on earth, with its own multibillion-dollar online and physical retail network.

Even so, Apple had to make a deal with the devil to gain the freedom to offer an unimpaired product directly to users. It gave AT&T exclusive rights to be the iPhone's U.S. network for an undisclosed period of years. It has locked and relocked the phone to make sure consumers can't override that restriction. This arrangement reportedly brings Apple regular fees from AT&T, but penalizes people who live in areas with poor AT&T coverage.

Apple has also, so far, barred users from installing third-party programs on the iPhone, though the company announced last week it will open the phone to such programs early next year. (Web-based iPhone programs—those that run inside the Web browser—have been available from day one.)

These restrictions have rubbed some of the luster off the best-designed handheld computer ever made.

A few other "smart phones" sold primarily to businesses have been freer of carrier restrictions on third-party software and services than typical cellphones. But even these handsets, such as Palm Treos, Windows Mobile devices, and BlackBerrys, have been partly crippled by carriers in some cases.

Reader Responses

As a technology reviewer, I have met with multiple small companies that had trouble getting their programs onto consumers' phones without the permission of the carriers; getting that permission often requires paying the carriers. Sure, there are some clumsy workarounds that can evade the carrier barrier, but it's nothing like the ability small software companies have had for decades to offer their products for installation on Windows or Macintosh computers.

We also need much greater portability of phone hardware. Because the federal government failed to set a standard for wireless phone technology years ago, we have two major, incompatible cellphone technologies in the U.S. Verizon Communications Inc. and Sprint Nextel Corp. use something called CDMA. AT&T and Deutsche Telekom AG's T-Mobile use something called GSM. Except for a couple of oddball models, phones built for one of these technologies can't work on the other. So that limits consumer choice and consumer power. If you want to switch from AT&T to Verizon, you have to swallow the cost of a new phone.

But the problem is even worse. The government didn't require the CDMA companies to include a removable account-information chip, called a SIM card, in their phones. So, unlike people with GSM phones, Sprint and Verizon customers can't keep their phones if they switch between the two carriers, even though they use the same basic technology. And, the government allows the GSM carriers to "lock" their phones, so a SIM card from a rival carrier won't work in them, at least for a period of time. Techies can sometimes figure out how to get around this, but average folks can't.

The carriers defend these restrictions partly by pointing out that they subsidize the cost of the phones in order to get you to use their networks. That's also, they say, why they require contracts and charge early-termination fees. Without the subsidies, they say, that \$99 phone might be \$299, so it's only fair to keep you from fleeing their networks, at least too quickly.

But this whole cellphone subsidy game is an archaic remnant of the days when mobile phones were costly novelties. Today, subsidies are a trap for consumers. If subsidies were removed, along with the restrictions that flow from them, the market would quickly produce cheap phones, just as it has produced cheap, unsubsidized versions of every other digital product, from \$399 computers to \$79 iPods.

The Federal Communications Commission is selling some new wireless spectrum that will supposedly lead to fewer restrictions for technology companies and consumers, but it's far from certain that the carriers, with their legions of lobbyists and lawyers, will allow such a new day to dawn. Google Inc. is making noises about trying to bust open the cellphone prison, with new software and services, but that's no sure bet either.

Remember Landlines?

We've been through this before in the U.S., though many younger readers may not recall it.

Up until the 1970s, when the federal government intervened, you weren't allowed to buy your own landline phone, and companies weren't able to innovate, on price or features, in making and selling phones to the public. All Americans were forced to rent clumsy phones made by a subsidiary of the monopoly phone company, AT&T, which claimed that, unless it controlled what was connected to its network, the network might suffer.

Well, the government pried that market open, and the wired phone network not only didn't collapse, it became more useful and versatile, allowing, among other things, cheap connections to online data services.

I suspect that if the government, or some disruptive innovation, breaks the crippling power that the wireless carriers exert today, the free market will deliver a similar happy ending.



There is nothing to add but, "Right on, brother!" I am skeptical that the current politicians will do anything, however, to break this monopoly. That would require leadership and vision, something that is in very short supply inside the Beltway. I'd have to make the assumption that Verizon and AT&T are going to be big contributors in this upcoming election, so unless a wildcard like Gore were to come along, we can, unfortunately, count on the Russian ministries being around for some time to come.

Posted by Ron Lockhart October 22nd, 2007

The big carriers as Soviet ministries is an apt analogy. The carriers do what they want and even ignore specific requests from the FCC.

For example, "each of the national wireless carriers has mostly or completely ignored repeated FCC requests to submit network coverage maps and other information about their quality of service and service availability."

See <http://www.aarp.org/research/u.....eess.html>

Posted by Matthew Christopher October 22nd, 2007

Walt Mossberg



Walt Mossberg writes two columns, and edits a third, for the Wall Street Journal. He also publishes periodic interviews for the Journal, and occasional blog posts on this site. With Kara Swisher, he co-produces and co-hosts D: All Things Digital, a major high-tech and media conference.

Email me at mossberg@wsj.com.

baseline

In font design and layout, the invisible line on which the letters “sit.” The distance from one baseline to the next in a block of text, which is referred to as simply “line spacing” in word processors, is known as leading (leading, from the lead used in traditional movable type) in typography, so that’s what’s it’s usually called in layout programs.

benchmark

A performance or speed test comparing hardware or software. A few of the many available benchmarks include GL O.B.S., Whetstone, Dhrystone, Khornerstone, and John the Ripper. (Benchmark developers seem to have a fetish for odd names.)

When wielded by an organization with no stake in the outcome, such as a consumer magazine, benchmarks can make useful comparisons, although some may have little relevance to the kind of work you do on your computer. But since there are thousands of benchmarks to choose from, it’s easy for a company to pick one that makes its product look good, and then trumpet the results in its ads.

beta test

To subject new software or hardware to testing by a small group of users before releasing it publicly. Beta testing, like copyediting, is vital, because you can never find all the errors in your own work; it takes fresh eyes to do that.

Bézier curve

bay ZYAY · A curve defined by a specific type of equation, the Bézier is the basis of the PostScript language. Every graphic drawn with PostScript (as in Adobe Illustrator) is a collection of Bézier curves. And that includes every character in PostScript fonts— . they’re Bézier graphics, too! billionOne thousand millions: 1,000,000,000, or 109. Throughout

Lexicon Lessons ?

What do those terms mean

this book we use billion in its “short scale” meaning, the common U.S. approach.

It’s important to keep this in mind, because in many parts of the world the “long scale” definition is common, so the word means a million millions: 1,000,000,000,000, or 1012.

binary numbers

The native language of computers, a base-2 numbering system that uses only zeroes and ones. bit .binary + digit · The smallest piece of information possible, describing one of only two possible states: zero or one, off or on, yes or no. Also see byte.

bit rate

The number of bits of data processed in a certain amount of time, commonly expressed in kilobits or megabits per second (kbps and Mbps, respectively). The expression is used in two distinctly different ways:

1. The encoding rate of an audio or video file, as in “When creating MP3 files, a bit rate of 160 kbps is considered good quality.” In this case, the bit rate has nothing to do with how long the file might take to transmit (or how long it takes to play!). Instead, it has to do with how much data is packed into each second of playing time. A higher bit rate (256 kbps versus 128 kbps, for instance) includes more of the original content; it discards less detail, thus providing better quality, although in a larger file. However, different encoding formats (AAC versus MP3, for instance) can produce similar file sizes with different end results in audio quality because of the differences in their compression algorithms. (See FairPlay for information about Apple’s two different bit rates for some iTunes music files.)

2. Data transfer rate, such as on

a network: “802.11g Wi-Fi maxes out at 53 Mbps.”

bitmapped font

A font whose characters are described by a grid of dots rather than mathematical formulas as in an outline font; also referred to as a screen font. When you enlarge or shrink a bitmapped font’s characters, they get distorted because dots have to be added or dropped out as the grid changes size. Bitmapped fonts were the original font technology for the Mac, utterly magical at the time, when boxy lettering was the only thing available on other computers. Under Mac OS X, they can’t be used as standalone font files, but they are required as companion files to PostScript Type 1 printer fonts.

bitmapped graphic

An image file that consists of a grid of individual pixels, each one a specific color and brightness, like a picture drawn by coloring in the squares on graph paper. On computers, photographs are bitmapped, as are the windows, menus, and buttons you work with on the screen. Almost all graphics on the Web are bitmapped, with the exception of some Flash graphics.

Bitmapped graphics—also known as raster graphics—have serious limitations: if you enlarge them, their edges become aliased, and when you shrink them they look like squashed bugs. The alternative is to use vector graphics formats, such as EPS, Adobe Illustrator, or Flash, which can be scaled up or down without becoming jagged.

