

GET # INFO

Upcoming Programs

February 2006

Monitor Calibration

Lisa Colwell

Back-up Strategies, Part II

The highlight of our February meeting will be Phase 2 of Backing Up your Mac. Here is an opportunity to see several different kinds of backup software given in short presentations by some of our own TMUG members.

March 2006

Apple Update

Francis Shepherd, Apple Systems Engineer, will give us an Apple Update and a look at the exciting new features of iLife '06. The evening will include the monthly Question and Answers and a door prize.

Elections take place this March. We are looking for dedicated Mac users to move our organization forward. Contact anyone on the Executive Committee if interested.

Member Favorites are short presentations by members on their favorite freeware or shareware application, game, script, tool, trick or tip. Members are invited to step forward to present; there is plenty of room on the schedule.

If you wish to be included on the schedule please contact Allen Emory at aemory@earthlink.net.

PREZ SEZ



President Duane Reaugh

Looking Back to Move Forward

I hope you got to see the presentation on backing up your Mac. This month, we will see presentations from several folks on different software packages that members use to protect the most important part of any computer: your data.

It is officer election time again. If you are interested in any of the positions, please let me know at p@TMUG.org, or better yet, come to the February meeting and put your name in the hat.

After watching the QuickTime movie of the Steve Job Keynote address, all I can say is "Wow." It was no surprise that the first Mac to use the Intel processor was the laptop line, but to have the new Macbooks 6 months early was a surprise. Since the iMac uses a lot of the same components, the new Intel-based iMac was a natural extension. The iMacs are shipping now and the



Courtesy of Apple

"MacBook Pro with Intel Core Duo Processor Up to Four Times Faster Than PowerBook G4" — Apple

Macbooks are supposed to start shipping in February. Several of the Mac sites are reporting the actual performance is not as good as the benchmarks but still a big improvement over the G4. The rest of the Macintosh product line will be converted to Intel CPUs by the end of the year. I would not be surprised if the new Intel-based desktop Macs are released this summer.

I hope anyone who gets a new Intel-based Mac will bring it to the next meeting.

— Duane

NOTE: Officer e-mail addresses will be changing soon!

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<http://www.tmug.org/>

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Welcome to tmug!

Tom Rouillard

From the Treasurer:

It may not look like it quite yet, but there is a lot going on behind the scenes of the TMUG web site. Issues in the member services area are being cleared up, the membership rolls are being updated, and there is a core team working on a great new look and feel for www.tmug.org. If you need passwords, account information, or have general questions, send them to support@tmug.org, and watch for announcements via the TMUG list and this newsletter!

— Stefan

TIP FROM TMUG

My Secret Stuff

by Alec Whittaker, tmug

You need to protect that second set of books you would rather the IRS not see, the e-mail from your girlfriend you would rather your wife not get to read, your collection of downloaded internet pornography or, in my case, the filed patent claims which the law requires that I be “duly diligent” in protecting from entering the public domain. If you have individual password-protected accounts on your Mac and carefully log in and out each time you leave your desk, they are probably safe. If, like most of us, you just let your Mac to go to sleep when you leave your desk, everything is accessible to everyone.

But Apple offers a solution — an encrypted password-protected folder. Before creating this folder, it will be necessary to establish the size of the folder in advance. To do this, select an existing folder with sufficient capacity for the files you want to protect, then duplicate it. Rename this duplicate as, say, “My Secret Stuff.” Open Disk Utility and Images > New > Image from Folder in the Menu Bar. Select the folder “My Secret Stuff” and save as “My Secret Stuff” to your desktop after setting Image Format to read/write and Encryption to AES-128.

You will be asked to provide a password. It is obviously a good idea to uncheck the option to add the password to Keychain. A disk image with the designation “My Secret Stuff.dmg” will appear on your desktop. Click on it and use the password to open it. Then delete all the stuff in it that you used to establish its size. Eject the disk using control + e. You now have a password-protected disk image that you can open and drag files into. Eject the disk after each use leaving “My Secret Stuff.dmg” as a protected place for your files. Just don’t forget your password!

Apple Posts \$565 Million Q1 2006 Profit

by Geoff Duncan, geoff@tidbits.com

TidBITS#813/23-Jan-06

Well, it's official: Apple is no longer a computer company.

Apple posted its first quarter 2006 financial results last week, with revenue of \$5.75 billion and a profit of \$565 million for the quarter. The results are a 65 percent increase in revenue over the same quarter a year ago, although the company's gross margin was down to 27.2 percent from 28.5 percent a year ago. International sales accounted for 40 percent of the quarter's revenue. The results are the highest quarterly earnings and revenue in the company's history.

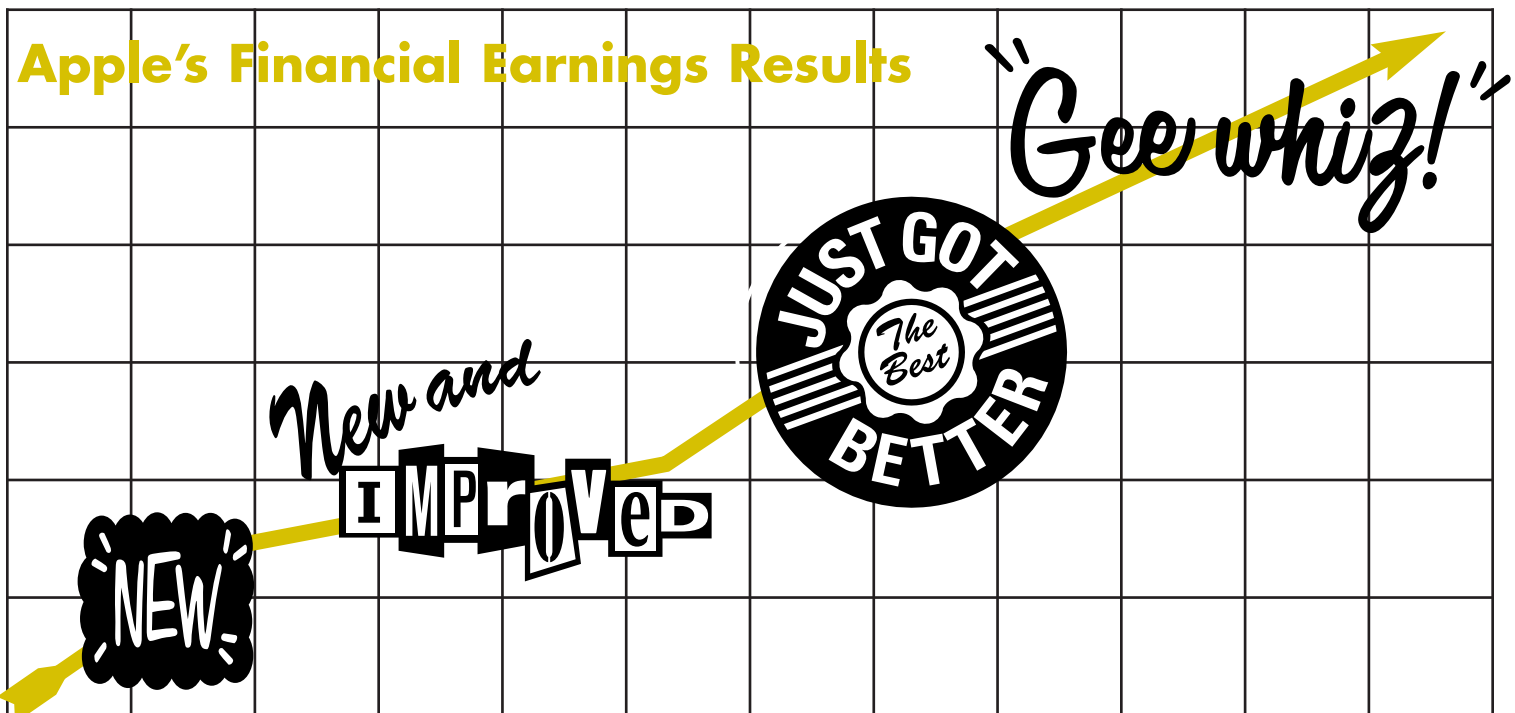
<http://www.apple.com/pr/library/2006/jan/18results.html>

To be sure, Apple still makes Macs. The company shipped more than 1.2 million Macintosh computers, basically flat with Mac shipments during the fourth quarter of 2005, but a 20 percent improvement over the same quarter a year ago. Why the static quarter-to-quarter sales figures? Sales in the Americas and among portables were particularly weak, due to an aging notebook product line and the public knowledge that Apple is transitioning from PowerPC to Intel processors, no doubt causing some customers to defer purchases until details of new Intel-based products became available. (In case you missed it, Apple just announced Intel-powered iMacs and MacBook Pro portables at Macworld San Francisco.)

<http://db.tidbits.com/getbits.acgi?tbart=08392>

However, in revenue terms, the iPod success story is still unfolding. The company sold more than 14 million iPods during its first fiscal quarter amounting to \$2.9 billion in revenue. This figure is significant because roughly half of Apple's quarterly revenue came from iPod sales alone. Roll in money from other music products and services (e.g., the iTunes Music Store, etc.) and Apple's iPod and music businesses accounted for roughly 60 percent of Apple's revenue for the quarter. The quarter marks the first time Apple's non-computer business has out-earned the company's desktop, notebook, software, peripherals and services offerings.

Looking forward, Apple says it expects second quarter revenue to be around \$4.3 billion, a conservative figure that sent Apple's share price into a bit of an after-market tumble. The reasons for a cautious revenue figure include a possible slowdown in iPod sales after the holiday buying season, and a pause in Macintosh sales prior to the introduction of Intel-based models. Some analysts are also cautioning the company may not want to become too reliant on income from the turbulent digital music player market.



It's Not Easy Being Steve

by Frank Petrie

Steve Jobs has to be under more pressure than David Copperfield. The first time you make a dove disappear. To 'WOW' the audience the next time you have to make a woman disappear. Then a Lamborghini. Then an elephant. And next a yacht. How do you continually top yourself?

It's practically a lose-lose situation. So Steve introduces the original Bondi Blue iMac. After a while he introduces the iBook. Then the Titanium PowerBook. Then a new form iMac. Then the ubiquitous iPod, then the G5 tower, and on and on.

This conundrum is starting to come to a head. Since we always expect Mr. Jobs to 'WOW' us with 'One More Thing...', people seem to get more and more ho-hum every Macworld about the announcements. They're ready and geared to whine.

Take for example, the announcement of the MacBook Pro. I plead 'No Contest.' My first thought about the laptop was, "What no FireWire 800!?" Once I was escorted down from my chair and the switchblade removed from my hand, some calm, knowledgeable people began to explain to me that it wasn't a big deal at all. Since most people have no need for that speed, they pulled it from the base model to cut costs. If I want my FireWire 800 (and I do!) I can purchase an ExpressCard/34 with my beloved 800 ports!

That makes a whole lot of sense. I used a PCMCIA card for a long time with my Titanium to give me extra FireWire 400 slots! And I was perfectly happy with that arrangement. So, some people will pocket some dosh, whereas, those of us who crave speed can get it à la carte,

The next hurdle was the name. I can safely say that no topic provided more fodder for conversation that week than whether

the moniker 'MacBook Pro' was worthy of its lineage. "It doesn't roll off the tongue!" was the general consensus. I'm still not enamored with the name but I realize in hindsight that they could just as simply called it "Bob" and it would have been the same computer. And I fully understand wanting to leave the 'Power' prefix behind, Yet again, Steve can't win.

And you know, the furor over these topics didn't abate during the entire show. But as I read somewhere (I apologize for not remembering whose quote this is) that Mac users will whine about the Stevenote product announcements for the entire week of Macworld, then reflect and read up on what was actually introduced, then spend the next couple of weeks clamoring to get a hold of one.

While doing a daily vodcast from the Exhibit Hall the entire week for Macsimum News, it was my privilege to interview, amongst many Mac luminaries, Mr. Leo Lapotre. One of my standard questions was "using the Macworld rating scale of five mice, how would you rate MWSF 2006?" Leo looked at me and without hesitation responded "two."

"Two?" Why two? "Because I'm waiting for the other shoe to drop." He feels that it'll be a year with a monthly "One More Thing..." Christmas times twelve. Think of it.

Now, think of Steve's situation. It's not easy being Steve.



Courtesy of Apple

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Make Podcasts, Not War

by Frank Petrie

Product: iTunes

Company: Apple www.apple.com/itunes/

Requirements: OS X 10.2.8 or later; 500MHz G3 processor or better; QuickTime 6.5.2 or later; 256MB RAM

Price: Freeware

Product: DTV

Company: Mozilla participatoryculture.org/

Requirements: OS X 10.3+ and QuickTime 7

Price: Freeware

Product: Fireant for OS X

Company: Mozilla fireant.tv/

Requirements: OS X 10.3 or greater

Price: Freeware

Test Rig: PowerMac G4/DP 1.42Ghz/
1.5 GB RAM/OS 10.4.4

For the longest time, we've been caught up in the Browser War, not to mention the Iraqi War or the never-ending Cola War. Now, another conflict has arisen and calls for our attention. You won't see it on ABC, NBC, CBS, or FOX. But you'll see them on it.

The Aggregator War.

There are many factions in this conflict and all are struggling to cease control of the territory. Today, I thought that I would look at whom I consider three of the main combatants. They're all freedom fighters.

iTunes

Not the first but arguably the 800 lb. gorilla in this contest. iTunes entered the fray late in the game, but because of Apple's dominant position already established in the digital media market, they immediately became the most commonly used aggregator.

iTune's problem is that Apple is stuck between a rock and a hard place. Because they have a brand to consider, they have begun censoring by kicking some shows out of their directory. That's their right. But it is exactly the opposite of what the whole dynamic is about. A conundrum. (You can add those removed programs manually.)

As far as performance, iTunes has one main problem. It'll stop downloading a feed that you have been downloading for months. I don't know what the technical reason for this is, but I do know that it's very annoying. But the player is very good

and very responsive. And it lets me look at my catalogue in several ways. I particularly like to use the expanded view for a quick reference.

DTV

DTV (still in beta) reminds me of the big, lumbering kid in school who meant well, but wasn't the fastest out of the gate. On my rig, at least, DTV takes seemingly forever to launch. And while it is easy to navigate, its GUI is clunky. And while I can set it up to automatically download my feeds, from time-to-time I have to manually coax it to download single episodes. Lastly, I can't find a way to expand the dialogue box. This is important because some of my feeds come with links that I can't get at without scrolling through this tiny window.

On the bright side, it plays my downloads, ALL my downloads with one click of the button. So, if I have seven downloads in the queue, I click the first one, it plays all of them back-to-back. It would be nice if I could separate that function by feed, but it's a step in the right direction. And the quality of their player is quite good.

Fireant for OS X

Fireant for OS X (also in beta) is so far my favorite. What impresses me the most is the fact that it grabs so little real estate. I can play my feeds, while multi-tasking and my other program won't cover the screen (I have a 20" display). The GUI is very clean and easy to navigate.

On the downside, it doesn't have the back-to-back feature that I appreciate so much in DTV. If they'd incorporate that then I'd be a happy pup (young dawg).

THE PULP

Yes, I'm aware that there are more players out there such as PodderX, Juice, etc. And I'm aware that they all don't download text feeds. I was looking at it from the point of downloading podcasts and vodcasts.

Since so many aggregators are involved in the war, please place comments about your favorite one in the 'Comments' section so we can start a dialogue about this. Besides, vendors read some of these and would no doubt like to hear what features you like and which ones you don't like.

Links to cool, interesting and useful information for user group members

by Frank Petrie

Use an alternative slideshow engine with iWeb

If you don't like the slideshow offered by iWeb (part of iLife '06) when you don't publish to .Mac, there's a way to replace it.
<http://www.macintoshhints.com/article.php?story=20060116074934287&src=osxb>

Putting Google Video onto Your iPod

There's some pretty interesting stuff on Google Video. In this article, Erica Sadun shows you how to download videos, convert them to an iPod-friendly format, and load them onto your new 5G video iPod.
<http://www.macdevcenter.com/pub/a/mac/2006/01/24/google-video.html?CMP=OTC13IV03560550&ATT=Putting+Google+Video+onto+Your+iPod>

Play unplayable AVI/WMV files

I'm used to being able to play almost any video on my mac with either VLC or mplayer, so when I came across an AVI file that refused to play in any player I became rather frustrated.
<http://www.macintoshhints.com/article.php?story=20060103193926854&src=osxb>

Modify one iWeb site on more than one Mac

When opening iWeb on another computer that is connected to .Mac, you will be presented with a blank iWeb site to start from scratch, and you cannot open a previously-created iWeb site to edit.
<http://www.macintoshhints.com/article.php?story=20060114142358803&src=osxb>

Mac 911: Alternate volume booting

You understand that you can boot your Mac from another volume, but how do you select that volume on startup?
<http://www.macworld.com/weblogs/mac911/2006/01/altboot/index.php?src=mwrss>

Create clickable URLs in iCal events

Well known is the fact that you can add a URL to an iCal entry by pasting it into the URL section. However, if you drag and drop the URL to a given day, a new event is created with the URL surrounded by angle brackets...
<http://www.macintoshhints.com/article.php?story=20060113094651714&src=osxb>

How to send .Mac mail when SMTP is blocked

If you travel, or use your laptop at wireless hot spots, you've

probably discovered that even though you can read your .Mac email using Apple Mail, many of these providers block access to SMTP..

<http://www.macintoshhints.com/article.php?story=20060113084246213&src=osxb>

Removing the Classic environment from a Mac

OS X system

<http://www.macfixit.com/article.php?story=20060123081545135>

Pages is a Kinder, Gentler Way to Deal with .doc Files

Apple's Pages has become my favorite way to create workbooks for teaching. But Pages 2 raises the bar, especially in terms of MS Word compatibility.

<http://www.oreillynet.com/pub/wlg/9035?CMP=OTC-13IV03560550&ATT=Pages+is+a+Kinder+Gentler+Way+to+Deal+with+.Doc+Files>

TMO Quick Tips — Avoiding Stuffit's Corrupt Zip Files

Despite the fact that Stuffit Deluxe and Stuffit Expander are capable of opening more archive types than most people are even aware of, sometimes these tried-and-true Mac tools get things wrong...

<http://www.macobserver.com/tip/2006/01/22.1.shtml>

Easy access to the .Mac iDisk web interface

.Mac now has a friendly web-based UI for access to iDisk — there's an iDisk button on your .Mac account's homepage. But if you'd like to get there more easily (via your own bookmark, for instance), here's the direct URL:

<http://www.macintoshhints.com/article.php?story=20060117041800419&src=osxb>

Quickly lock your screen

Learn a number of different ways to easily and quickly lock your screen.

<http://www.macworld.com/weblogs/macintoshhints/2006/01/lockscreen/index.php?src=mwrss>

Subscribe to non-.Mac photocasts in iPhoto

While iPhoto only supports photocasting via .Mac, it can subscribe to any photocast. Since photocasts are basically RSS feeds containing pictures, it's possible to subscribe to already existing feeds.

<http://www.macintoshhints.com/article.php?story=20060112092821456&src=osxb>

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Stream live EyeTV video to EyeHome

If you own an EyeTV device and EyeHome, you are probably aware that you cannot view your live stream with EyeHome. I searched everywhere and couldn't find a solution, so I came up with one.

<http://www.macosxhints.com/article.php?story=20060109064616941&src=osxh>

Find the missing Keynote 2 animations in Keynote 3

The new version of Keynote (found in iWork '06) adds some great features, including some new transitions between slides and builds for the way content enters a slide. Curiously, this new version seems to omit...

<http://www.macosxhints.com/article.php?story=20060118144601537&src=osxh>

Stream Sirius satellite radio via VLC

Since Microsoft is no longer supporting Windows Media Player for Mac, they recommend installing the (free) Flip4Mac WMV QuickTime Components to allow QuickTime to play WMV files and embedded movies.

<http://www.macosxhints.com/article.php?story=20060116110611360&src=osxh>

Apple announces PowerBook G4 (15-inch 1.67/1.5GHz)

Memory Slot Repair Extension Program

<http://www.macfixit.com/article.php?story=20060123092434733>

(Okay, here's your big chance to get published! Submit photos to the newsletter, along with captions and credit information, and we will put them in the newsletter.)



The Bahamas, 2005. © Brian Wall.

Pullin' the Old Switcheroo

by Dan Pourhadi

Well snap my whipper and call me a whipper-snapper.

Who saw that coming? The Mac rumor sites predicted confidently for months that Apple was poised to update the iBook and Mac mini lines with the new Intel chips at Macworld.

Apple, in response, held out the palm of its hand and recited the customary, "Talk to the hand 'cuz the face ain't listening. We go our own way, yo."

Want to know who saw that coming? I saw that coming. Yes, me. But no one believed me, not a one. "Apple can't let the PowerBooks fall behind in performance like they have," I said vehemently. "If they introduce an Intel iBook, PowerBook sales will drop like bird poop onto your car."

"No way!" the rumor-mongers replied. The PowerBooks were just updated! And the pro apps aren't even compiled for Intel yet! And Macworld is for consumers, not prosumers.

Here's my reasoning behind Apple's motivation to Intel-ify the PowerBook before the iBook:

1) Laptop sales are skyrocketing, virtually surpassing desktops. Everyone buys laptop machines now because, for most users, they do everything a desktop can do, plus they're portable: perfect for business, perfect for the home and perfect for school.

Professionals, especially photographers, make up a huge chunk of high-end notebook purchases because they're always on the go — and they need a powerful machine that can always go with them. The PowerBooks have been so far behind in terms of performance; one could spend half the money on a PC notebook that's twice as fast. Apple needed to grab back that sales base, and shoe-horning an Intel chip into the most popular PowerBook (the 15") was the quickest way to ensure relevancy in the high-end notebook market.

2) iBooks are and always have been selling incredibly well. If the PowerBooks were falling behind and sales was dropping, why would they update the iBook first when it's doing just fine as-is?

3) How would it look if Apple were to say, "Buy our new Intel iBooks, twice as fast as the older iBooks!" when the older iBooks were just as fast as the current PowerBooks? You want a way to kill sales - there you have it.

I bet you all feel silly now, don't you? You certainly should. You were dead wrong. Typically I'd show some empathy. "Well, it was an honest guess!" I could say. "At least you tried!" But, no. Not this time. I'm going to cherish this moment, and you can't ruin it for me.

People were salivating over the news of the Intel iMac, too. The iMac was just updated, what, a month ago? Plus, it's Apple's most popular line; why would they use it as the forerunner to one of their most ambitious transitions? Isn't that just asking for trouble?

Yes and no.

1) Apple sent a signal with the introduction of the Intel iMac; they're showing their users, their developers, and the rest of the cynical world that they're serious about this transition, that they will throw everything they have into getting it done right. Apple's not pussy-footing around, not "testing the waters" — they need to convince everyone that a) the transition will be huge for Apple, but b) the average user shouldn't even notice the difference. And what better way to do that than to take their best-selling consumer machine, shove an Intel chip inside, and drop it on the market as if it were any other Macintosh?

2) And there's the whole shove-the-developers factor. Jobs said the first Intel Macs would be on the market by WWDC 2006, which takes place in July. Apple was hoping that software developers would work adamantly on releasing Intel-compatible — or "universal" — versions of their software before that. The more compatible software available for Intel machines, the easier the transition will be. And by releasing the iMac nearly 6 months ahead of WWDC, Apple's essentially strong-arming the developers into update their software or risk losing a growing market.

3) "No, son, we can't buy a Mac computer right now," I heard a bearded dad say to his teen son while perusing the Apple Store last month. "Why not?" the kid asked, a look of exasperation painting his face. "Because," the father replied, "Apple is changing their computers; if we buy one now, nothing will work a few months down the road."

Liar! The dad's a liar!

Ahem.

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Pullin' the old switcheroo

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Anyway, Apple is also trying to avoid that. At Apple's quarterly earnings report to shareholders, they said Mac sales dropped relative to expectations because of the anticipated Intel switch. If Apple went with a less popular machine — say, the Mac mini — instead of the beloved iMac, what do you think reviewers and tech pundits and penny-pinching dads would say? “Wait to buy until they upgrade the iMac.” By upgrading the most popular line first, Apple is preempting any nasty sales drop.

4) By using the same design as the G5 iMac, Apple is also emphasizing the fact that, though the transition is hugely important in Apple's long-term future, the average consumer should not notice any difference at all. And 90% of those who purchase an Intel iMac in the coming months won't even realize the machine they're buying today was not the same machine on the shelves two months ago, and that will do a lot to protect sales and comfort consumers.

So there you have it. Jobs' Macworld announcements may seem illogical — or even foolish — at first, but in reality, they were probably the best moves Apple could make considering the unusual and fragile circumstances.

Now, if they would just release that media center Mac mini that everyone was praying for, I'd be all set!

Dan Pourhadi is a freelance technology writer from the northwest suburbs of Chicago. He writes several Mac-focused columns for various publications, is a blogger at The Unofficial Apple Weblog (TUAW), and has contributed to MacAddict Magazine. You can read his person blog at www.pourhadi.com.

This article first appeared in Northwest Passages, newsletter of NorthWest of Us MUG (www.nwou.org).

PHONAVISION?

Communications Convergence: Outstripping Wires

by Glenn Fleishman, glenn@tidbits.com; from TidBITS#813/23-Jan-06

There was a day when telephone companies provided a dial tone, cable companies offered television stations and specialty channels, and Internet companies offered service over telephone line-based modems. Recent events make it clear that those days are long, long over.

You know, of course, that many different companies provide high-speed Internet access over cable lines, phone wire, and radio frequencies (Wi-Fi and many other standards). You may know that telcos are offering cable TV-like services in many parts of the world and are jumping through regulatory hoops to do so widely in the United States using very-high-speed DSL or fiber-to-the-home (FTTH). And you might even know that cable companies can sell you phone services in some parts of the U.S.

What's probably unclear is how quickly all this will change.

Cable Firms Go for Voice

Several major cable operators (called MSOs for “multiple systems operators”) recently penned a deal with Sprint Nextel, the merged number-three cellular operator in the U.S., to resell cell service to their customers. Any time you can put more services on a single bill, you cut as much as \$20 in monthly service

costs for maintaining a separate billing account. It's easy for companies to find synergies that work because of that.

http://www2.sprint.com/mr/news_dtl.do?id=8961

But it's not just a single bill that's in play. The cable firms will license TV programs they own to the Sprint PCS division to stream over third-generation (3G) cell networks to new cell phones on which you can watch programming on demand.

And it goes further: Sprint (among other cell companies) will likely start offering handsets that have Wi-Fi and cell standards built in to provide what's known as unlicensed mobile access (UMA), a form of voice over IP and Internet telephony. With UMA, instead of a cell phone hooking up with a nearby cell tower, it senses a local (typically, an in-home) Wi-Fi network and connects, using a bit of the Internet to then transmit calls to the cellular operator's gateway and off into the phone system.

UMA can offer better-quality indoor calls, still a plaguing problem for cell service, and enable operators to offer huge piles of minutes for calls placed using UMA, which in turn can

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preserve users who might otherwise switch to Internet telephony at home via Vonage or another provider. In Europe, some existing cell systems sense when a customer is using their home network versus another Internet network, and pulls minutes from a home pool instead of a roaming pool; this might also be the case with UMA, to help a UMA-based plan replace a wired phone line without increasing cost for calls made in the house.

The Broadband Wireless Picture

But wait, there's more to wireless than just that! Cable giant Comcast recently invested in BelAir Networks via its capital development arm. BelAir makes outdoor wireless broadband equipment used to build metropolitan-scale networks for public and governmental access. BelAir announced the investment the same day that it revealed its latest products: wireless mesh access points that can be plugged directly into cable wiring and use the power that already traverses cable lines.

http://www.belairnetworks.com/about_belair/press_releases_view.cfm?p_id=73

With BelAir gear, a cable company could add a Wi-Fi network to an entire city by connecting wireless access points into existing cable lines up on telephone poles. There are a lot of "ifs" about this: in the U.S., cable operators are governed by thousands of local franchise boards which tax and constrain the operators with specific requirements in return for rights of way on roads and poles. Some franchise agreements may allow adding Wi-Fi access points, some may restrict this, others are likely silent about it.

Many cities are already far along in their plans to have private firms build municipal-wide Wi-Fi networks, however, and cable companies may want to use their existing relationships and this new technology to offer these new networks instead of allowing a third player - after telcos and cable firms - to enter the local broadband market. Current municipal-scale networks will likely promise only about 1 Mbps each way, somewhat less than the typical normal downstream speed of DSL and cable, but price the service at about the cost of dial-up today, from \$15 to \$25 per month. (1 Mbps is from 30 percent to 300 percent higher than the typical upstream speed, incidentally.)

Metropolitan-scale networks will likely employ some or a lot of mesh networking, in which Wi-Fi access points aren't individually connected to some form of backhaul to a central network. Instead, typically several access points are tuned to the same channel and serve both as conduits for individual users and for

data to pass among each other. One of the access points is plugged into backhaul that carries data to and from the network. The disadvantage of most forms of mesh is that every hop across the mesh network until it hits backhaul repeats the same data. If user A connects to access point 1 which connects to access point 2 which connects to access point 3 which connects to the backhaul, every chunk of data from user A takes up air space for the entire cluster of mesh nodes three times. This is why mesh networks are typically used to extend a network and for redundancy and failover (when a node fails, access isn't cut) but can't span huge areas.

Two and a Half Billion Vibrations per Second Can't Come Cheap

Here's where Sprint Nextel comes into the picture again: the two companies didn't just merge customers and operations, they merged their spectrum portfolio. The two firms controlled licenses for the 2.5-gigahertz (GHz) frequency band that covers 80 percent of the country. This band, with a starting frequency just above the tail end of the unlicensed band containing Wi-Fi and Bluetooth, was originally licensed for educational institutions and distance learning. It's a large swath of beautiful and mostly unused space. (Licensed frequencies are reserved to the license holders to use; unlicensed frequencies can be used by anyone but only with equipment that has passed certification by the FCC in most cases. Wi-Fi gear has been certified, but can be used by anyone, anywhere in the U.S.)

Several years ago, Congress allowed the academic and non-profit entities that controlled the regionally allocated frequencies to sublicense to commercial firms in the hopes of jump-starting more advanced telecommunications service. But many telecom firms were uninterested, and the licenses were quickly snapped up by Sprint PCS and WorldCom, with BellSouth and a fourth firm being lesser players. (All four companies together owned 90 percent of the licenses.)

Sprint and WorldCom nearly merged in 2000 partly to pool what were seen as valuable licenses. Nextel bought WorldCom's 2.5 GHz licenses out of bankruptcy in 2003, and the Sprint Nextel merger was partly seen as a way to consolidate two smaller cell players and partly, again, as a tool to consolidate those licenses. The 2.5 GHz band is exciting to these carriers because it allows higher power to be used than is allowed in Wi-Fi, thus increasing range, and interference is impossible because the carriers own all use of selected frequencies in regions the licenses cover.

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Before the merger, Sprint and Nextel, along with separately held Clearwire (a firm bought in 2004 by cellular pioneer Craig McCaw) had been experimenting with broadband wireless over 2.5 GHz in small markets around the U.S. Clearwire has started rolling out low-broadband-speed service in places like my hometown of Eugene, OR, and internationally in cities like Dublin, Ireland - areas with little broadband choice and small service areas from incumbents, but a good demographic to pay for their service.

Confusingly, the 2.5 GHz band is in the middle of a multi-year set of spectrum reform negotiations among the FCC, incumbent institutional holders who actually broadcast educational programming on it, sublicense holders like Sprint Nextel, and other interested companies. The 2.5 GHz band is inefficiently organized for the digital era, being a vestige of analog broadcasting and early data services. The new proposal would preserve some existing licenses by moving them around, but open up much more usage by other parties. This band might wind up being critical for the deployment of WiMax, a broadband point-to-multi-point wireless standard that's just starting to move into the market.

WiMax is seen initially in urban areas as a replacement for leased digital lines used by businesses, known as T-1 lines which runs at 1.544 Mbps. With WiMax, a central base station at a high point can serve many receivers in an arc that can be fairly narrow. Some early pre-WiMax deployments - devices are just being certified as compliant with WiMax standards now - offer speeds higher than T-1s for much less money. Putting in two T-1s typically doubles capital and recurring costs with wired lines; putting in a broadband wireless connect of 3 Mbps each way might cost just 10 to 30 percent more each month than a single T-1 with less installation complexity, less capital outlay for hardware, and a quick install. In rural areas, WiMax

may be used for basic broadband where a wired infrastructure doesn't exist.

Your Television Is Ringing

You're probably holding your head, thinking, "I just want to make phone calls and surf the Web!" Don't worry. You'll be able to, just in more ways, with potentially fewer bills, than ever before. Every time a set of companies promises that convergence will reduce costs, you start laughing, right? But this time, the number of different kinds of firms involved in competing with each other for your business might actually improve service and reduce overall costs.

For instance, my wife and I have shaved our combined local and long distance phone and cell phone plans over the last two years from about \$300 per month (that includes all my business calling) down to about \$160, while adding unlimited calling within the U.S. and to 22 countries at home, and a pool of minutes on our cell plans that we rarely exceed (and use rollover minutes from other months to avoid overages). To accomplish this, we switched long distance from per minute to an unlimited flat rate voice over IP calling plan, moved our cell phones from Verizon and AT&T Wireless to Cingular because of its rollover minutes feature (unused minutes are banked for up to 12 months), and got on the same plan to reduce the cell cost, which also means minutes used to each other aren't counted.

The coming convergence will be weird, confusing, and overwhelming, but it's likely to mean that most people in the U.S. and many people worldwide will see much higher downstream speeds for Internet access without increased costs - we've seen some of that already - and with cell calls and long distance all coalescing into one flat monthly rate substantially below what moderate users pay today. And that's a good thing.



*Cozumel, Mexico
January 2006
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