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This issue:
The Multi-Cored Future of Processors

There will be plenty of multi-cored CPUs. The problem will be writing software to take advantage of them.

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middle ground when it comes to size of computers and technology? Tablets are within our "psychological comfort zone."

DEPARTMENTS:

Editor's Letters: Tips and Thoughts from Readers by ComputorEdge Staff

Computer and Internet tips, plus comments on the articles and columns.

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Digital Dave

“Digital Dave answers your tech questions.” by *Digital Dave*

A reader is frustrated by his computer clock losing time; a reader, moving from one e-mail client to another, wonders if there is an easy way to export addresses and messages; is it necessary to update to USB 3.0 from USB 2.0?

Dear Digital Dave,

The clock on my XP has been losing time for a while. I finally conducted a test by updating the Internet time and checking the time after 4 hours; the clock lost 14 minutes. It looks like the automatic synchronization occurs every 7 days. I changed the battery that keeps the BIOS current, so it is probably not the PC battery. Are there any other potential causes of a computer losing time?

Thank you

Kenneth
San Diego, CA

Dear Kenneth,

There are essentially two clocks in your computer—one hardware and one software. The hardware device is the system clock which uses a crystal to keep time. It runs on the battery on the motherboard when the computer is powered down. If you want to check the system clock you can do so by rebooting the computer. If the time in Windows is updated to the correct time immediately after restart, then your hardware clock is working properly. If not, then that may be your problem.

The software clock is a function of Windows. There are many issues which can affect the accuracy of the Windows clock. For example, some third-party programs may interfere with the software clock. Windows XP in particular has had problems with the clock. Note if any other programs are running (even in the background) while you are losing time, or is it consistent lost no matter what is running.

Unfortunately, neither the hardware nor the software clock are highly accurate, but the amount of time loss you are experiencing is certainly excessive. It does not sound like a battery problem, which is what most people will say it is, although the battery is only an issue when the computer is off. Some people have found clock inaccuracies to be caused by over-clocking the CPU, but few people tamper with this aspect of their computer.

There is a program that may help you isolate the problem in Windows called Windows Time (*www.microsoft.com/resources/documentation/windows/xp/all/proddocs/en-us/time_w32tm.mspx?mfr=true*). If anyone else has run into this problem with Windows XP—and found a solution—please leave a comment.

Since Windows XP only updates the time once a week, you may want a third party program for updating your clock more regularly. Atomic Clock Sync (*download.cnet.com/Atomic-Clock-Sync/3000-18512_4-14844.html?tag=mncol;1*) and Rocket Time (*download.cnet.com/RocketTime/3000-2094_4-10063341.html?tag=mncol;1*) are two that can be found at CNET.

Digital Dave

Dear Digital Dave,

Every time I've had to move from one e-mail client to another (e.g., Eudora to OE) the process has been painful and time consuming—even when it was supposed to be "transparent." Now, it looks like I will have to move from OE to Win 7's offering (Win Live or something). Is there some software that will really do the job on all the addresses, and collected messages in my Inboxes and Outboxes without a heroic editing job afterward?

Josil
San Diego, CA

Dear Josil,

This is one that I have done and the process was not particularly painful, though you do need to keep track of the message and address files as you "export" them.

Outlook Express has a feature in the File menu which allows you to Export both your messages and your contacts to separate files. Once you have created these files, the new programs, Windows Mail for Vista or Windows Live Mail for Windows 7, have "import" utilities for reading the Outlook Express files. In Windows Mail, all the Import setting can be found in the File menu. In Windows Live Mail, messages can be imported via the button in the upper left-hand corner when Mail is selected, and the addresses can be imported via the Import button at the top when Contacts is selected from the left navigation pane.

Once you have imported the files, you should not need to do much editing, although you will want to move folders to the appropriate location. Both Windows Mail and Windows Live Mail are account oriented. Unlike Outlook Express, which puts everything into one Inbox, each account in the new programs has its own Inbox.

One of the advantages of the new Windows programs is that you can do a search from the Start Menu for a particular e-mail without using the search in the e-mail program.

Digital Dave

Dear Digital Dave,

I have seen a few ads for USB 3.0 cards and peripherals in print and online. But since I spent over 3,000 dollars last year on a new state of the art desktop, multifunction printer and home entertainment system with blue ray disk player, I can't see myself buying (in the next 2 or 3 years) any peripherals that are USB 3.0 compliant just because they are faster. My question is, "would an add-on USB 3.0 card speed up transfer of data to a USB 2.0 card reader or thumb drive? Also, would the other selling point of 3.0, the great number of items that can be plugged into one USB port, be of any advantage for my 2.0 peripherals, (I have 8 USB ports on my desk top, but about 12 things that I have plugged in always or on an as needed basis). Most of the

ports are hard to access as I actually have an under desktop *computer because the box is stored on a shelf under my small computer desk. Do you have any plans to do an article on USB 3.0 or the new peripherals that are available now, or soon to be offered?*

From a very big fan of your columns and ComputorEdge *(Read my first issue in LA about 1996)*

Buck Fadness

Dear Buck,

The major advantages to USB 3.0 over USB 2.0 are speed, power delivery, and the number of possible device connections. However, you can expect USB 2.0 to be around for quite a few more years. The reason for that is many of the type of devices which use USB 2.0 just don't need the advantages of 3.0 at this time.

USB 2.0 is much faster (theoretically 480 megabits per second) than most Internet connections and the operating speeds of many devices such as printers and scanners. Anything which is dependent upon an Internet connection, such as Web streaming, will see little benefit from the 4.8 gigabit per seconds (theoretically) of USB 3.0. Printers, being mechanically slow, are not going to need much greater throughput than is now available—although the attached scanners could certainly benefit from greater download speeds (after the slow scanning).

However, there are devices which will ultimately benefit from greater bandwidth. Those are peripherals which need to transfer large or numerous data files. Hard drives, thumb flash drives, solid state drives, video cameras and digital cameras will all benefit from the ten-times faster transfer rates provided by USB 3.0. There are now USB 3.0 products on the market for all of these types of devices, although most of them fall into the data storage category. The benefit to USB 3.0 in digital and video cameras is primarily in the time it takes to transfer the files to a computer.

In most cases, to get USB 3.0 capability you will need to add an expansion card to your computer system ($20-$30). Some new computer systems are only now starting to include USB 3.0 ports along with some standard USB 2.0 ports. But I wouldn't worry about this until you find a USB 3.0 device that fits on your wish list. There is no rush to get 3.0 in your computer system until you need it. You can always add it later.

USB 3.0 is backward compatible with USB 2.0 which means you will still be able to plug in your current equipment. But the 2.0 devices will only operate at the slower speed. There is no advantage to having 3.0 if you're only plugging in 2.0 equipment. The market will easily dictate this decision for you.

Digital Dave

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The Multi-Cores Are Coming!

“A Look at the Future of Computers.” by James Hartnett

Computer chips are complex and demanding to engineer. It has been a battle between electrical and material engineers that has led to Intel announcing the development of a ninety-core chip. James discusses the history, benefits and where this leads us to in the future.

The manufacture of computer chips is one of the most complex and demanding manufacturing processes ever developed. No other industry deals in such tiny, precise machines. No other industry can pack tens of millions of carefully manufactured artifacts in something the size of your pinkie nail.

The chips themselves are arrangements of transistors—billions of them. It is this artifact upon which the information age, and our current civilization, has been built. Far too small to be seen, except with an electron microscope, the billions of transistors shepherd the flow of a tiny amount of electricity through the chips complex insides. The result appear on the output pins, and represent the concerted action of billions of little machines, each one of which must function just right.

This amazing display of engineering precision, which makes the much vaunted Swiss watch look as clumsy as a pile of rocks, passes unnoticed beneath our eyes, yet it is long since we could live a "normal" day without the help of the hundreds or thousands of chips each person interacts with, in their car, their phones, medical equipment and traffic lights.

With Transistors, More is Better, and Size Matters

Since the beginning of the information age it has always come down to two questions: how many transistors can reliably be laid down on a silicon wafer, and how those transistors can best be laid out to maximize the information-processing that the device will accomplish.

With engineering, it is always an endless back and forth between who is standing on the critical path. When silicon

was first being used, the electrical engineers in charge of designing the chip turned to the nearby materials engineer who fabricated the silicon wafer, and made a slightly disparaging comment about the limited number of components that could fit on the small silicon wafers that were the best that could be provided. "Ha ha," the electrical engineers gloated, "I guess I will have to work extra hard to get enough functionality out of these puny chips!"

The material engineers were standing on the critical path, and that's not a comfortable place to stand.

The materials engineers have had their revenge. Quality, quantity, and capability for manipulating the materials of semi-conductor manufacture have grown by leaps and bounds. Where once they could fit dozens of transistors, they can now fit billions. Any manufacturing process that relies on billions of machines working together has its own class of reliability requirements. Yet these too have been met.

The materials engineers have done their part. They have advanced the state of the art by orders of magnitude since those original electrical engineers made their sneer. Now the material engineer is entitled to ask, with some irony, whether the billions of components that can now be provided is enough for the electrical engineer to use?

Unfortunately the mental capabilities of the electrical engineers that design the chips have not advanced in step with the materials. There are limits to complexity—devices which become so complicated that it becomes practically impossible to work with them. It is time for a fundamental re-think of how billions of transistors can be used. The tools and techniques developed in a time of scarcity will not be appropriate for this challenge.

And thus, those reckless electrical engineers are now in the critical path.

Meanwhile, What to Do with Billions of Transistors?

"Hey, Joe. Would you eat another apple? I need to add one more core to this computer."

Until they catch up, the industry has come up with something to do with all those transistors, and what they have decided to do is to reproduce the CPU over and over again on the same chip. While the electrical engineers work on the problem of designing a super-CPU that can use all those transistors, they have decided to just pack more and more of the CPUs we already use on to one chip.

It started with dual-core chips, and rapidly moved to four-core chips, from both Intel and AMD, the two biggest CPU makers. But we all knew it was not going to stop there, and it hasn't. My programming workstation is an eight-core machine, and these are becoming very common for servers, which are typically CPU bound.

One great thing about multi-core machines is that they are inherently more power-efficient then the equivalent number of single-core systems. This really opens up new avenues of inexpensive high performance computing.

Intel has announced the development of a ninety-core chip, and the thousand-core chip may not be far behind.

How Do More CPUs Help?

With more CPUs there is more computational power available, but existing programs have all been written to run on one CPU at a time. The way this is currently handled is crude, but effective. If I open a word processor on my multi-core system, the operating system assigns it to one of the cores. If I then open a spreadsheet, that is assigned to a different core. As long as I have more cores than applications, each application gets its very own CPU.

This is very different from the classic single-core machine, which will run multiple applications by switching between them faster than you can notice (usually).

Not only does this mean that the task is never interrupted, it also saves the writing and reading of all that data needed to switch back and forth between tasks is also eliminated.

But Where Will It Lead?

Perceptive readers will have already noticed a limitation to the above approach to multi-cored processors: when I have more processors than applications, I end up with processors that are doing nothing.

For example, with Intel's ninety-core chip, how will my operating system take advantage of it? I have rarely, if ever, started ninety different programs at the same time. So why would I ever upgrade to ninety cores?

This is another problem, and one that will be a headache for the software engineers. Unfortunately all existing software for the personal computer was written for one CPU. So far there has been no easy solution for moving programs to multi-core systems. Essentially the core of the software has to be rewritten to take advantage of the extra processors. This is time consuming and expensive.

The multi-cored future will offer computational power that we have not even been able to imagine. The computers of today, no matter how exciting they seem now, will look as advanced as an old horse-drawn buggy looks next to the Space Shuttle.

What will we do with all this computer power? Well, that's the next problem for those busy engineers to solve.

James is a writer and software developer who has been with the free software movement from the beginning. He lives, writes, and programs in sunny Colorado.

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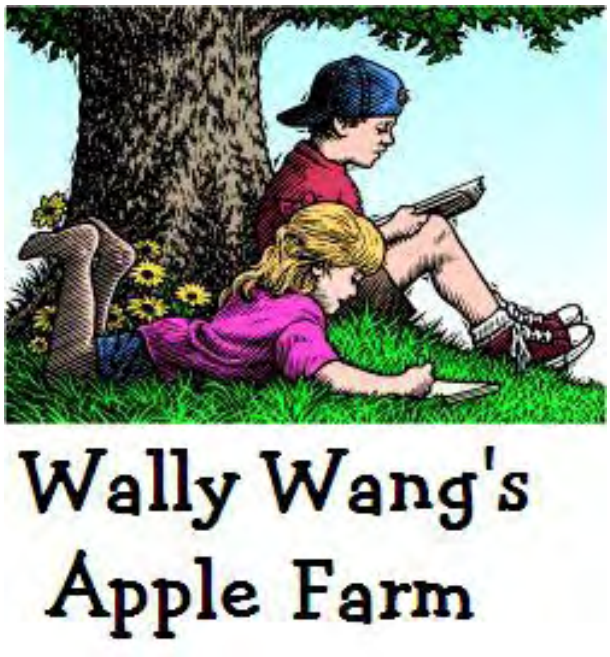

Wally Wang's Apple Farm

"The New Year--as Demonstrated by the Consumer Electronics Show" by Wally Wang

At this year's Consumer Electronics Show Microsoft's CEO demoed some interesting products—the new Kinect motion controller for the Xbox, Windows Phone 7, and the Microsoft Surface 2.0 table; the iPhone is now on Verizon; schools are using the iPad and ASUS netbooks in the classroom; ARM processors vs. Intel; securely deleting a file.

Computing is about to get interesting again and not just for the Macintosh and iPhone/iPad. At last year's Consumer Electronics Show (CES), Steve Ballmer, Microsoft's CEO, blandly demoed some slate PCs (*www.youtube.com/watch?v=FdMuE-CRmh0*). Only the Hewlett-Packard Slate PC managed to limp out by October and sell 9,000 units. The other slate PCs died a quiet death.

Fortunately at this year's CES, Steve Ballmer put on a better demonstration (*www.engadget.com/2011/01/05/live-from-microsofts-ces-2011-keynote/*). First, he demonstrated the new Kinect motion controller for the Xbox, along with the ability to control an avatar (an animated character on the screen) by waving your arms around. Although Microsoft has sunk billions into developing the Xbox, they're finally making a profit and carving a nice chunk of the market from Nintendo's Wii and Sony's PlayStation. If you really like video games, your best bet is probably to get a game console rather than use a regular PC.

The next demonstration focused on Windows Phone 7 with seven reasons to use it. The first reason focused on the ability to use the mobile phone's camera right away, without having to fumble with unlocking it and finding the camera app. This could be handy if you need to capture a UFO or a bank robbery in progress, but other than a nice convenience, it's not necessarily a feature that would make most people switch phones.

Some of the other reasons to use Windows Phone 7 focused on voice control, the tile interface that constantly changes, along with Facebook, Microsoft Office and Xbox integration. Viewing and editing Office documents might be nice, but can this link with Microsoft Office sway enough people to switch phones?

If you're looking to abandon a Blackberry or older Windows Mobile phone, Windows Phone 7 looks competent. If you're a hard-core Xbox gamer, then Windows Phone 7 is your only choice. With the emphasis on Facebook and the Xbox, Windows Phone 7 seems better suited for consumers rather than business. After all, how many companies care that their employees can check their Xbox game scores on their phone while at work?

Another interesting demo was the Microsoft Surface 2.0 table. It's now only four inches thick and still rather large (about the size of a table), but it's probably not something most people will want to put in their home just yet. If you really want a touch screen computer, the iPad is smaller, lighter, more portable, and a whole lot less expensive.

What makes the Microsoft Surface 2.0 table (*www.youtube.com/watch?v=FlZxuqjJDgk*) interesting is its ability to read text off a piece of paper and "see" items placed on its surface. Instead of relying on bulky cameras like the Microsoft Surface 1.0 table, this new version relies on pixel sensing technology to literally "see" anything placed on it. For bored office workers who like sitting on photocopiers to take pictures of their butt, the Microsoft Surface 2.0 table opens up new possibilities for interaction with your co-workers.

If Microsoft can eventually lower the cost of their Surface table to something reasonable (the Surface 2.0 table cost $7,600, down from the original Surface 1.0's cost of $12,500), this product could be successful eventually. Until then, the Microsoft Surface 2.0 is mostly an interesting research project to keep an eye on for the future.

The most exciting part of Steve Ballmer's demo came when he showed off some new laptop PCs running Intel and AMD's new, faster, and lower power processors, giving you both long battery life and better graphics capability at the same time. Now inexpensive laptops can provide ordinary desktop PC performance for an entire day.

Companies such as Acer, ASUS and Samsung showed off some interesting laptop designs. Acer's Iconia laptop (*www.acer.com/iconia/*) used dual screens where one screen can double up as a virtual keyboard. If you don't need a keyboard, you could turn its surface into another display.

With the gradual acceptance of virtual keyboards, their ability to rapidly switch between foreign languages, and their predictive ability to guess which word you're typing to improve accuracy and speed, this is the future of laptops. Now if Acer could only get the price down to a reasonable level (the currently quoted price for the Acer Iconia is roughly $2,300) and provide some interesting software to take advantage of such a dual-screen display, they might actually sell a few units.

Figure 1. Acer's Iconia offers a dual-screen laptop.

Samsung's laptop offered a slide-out keyboard to turn a tablet into a laptop design. ASUS's offered a tablet connected to a wireless keyboard.

Figure 2. Samsung's Sliding PC lets you turn a tablet into a laptop with a slide out keyboard.

What could be the most momentous announcement went relatively unnoticed. Microsoft demonstrated the next version of Windows running on ARM processors. ARM processors power nearly every mobile phone and tablet device (including Apple's iPhone and iPad) and are noted for their low power consumption, making them capable of running all day on a single charge.

The ability to run Windows and Microsoft Office on ARM processors might not sound like such an amazing feat until you realize that future laptops will be able to run on a single charge all day while still providing decent performance. Unlike today's laptops where users nervously hunt for an electrical outlet everywhere they go, the new laptops running ARM processors will let you charge your laptop overnight and use it all day without lugging around a power cord as a security blanket.

However, the key change with running Windows on ARM processors means that all current Windows programs will not run on ARM processors because they've been compiled to run on x86 (Intel and AMD) processors. If you get an ARM Windows laptop, you'll need to buy all new Windows programs that can run on ARM processors.

This will be a pain in the neck, but also a blessing in disguise because every single virus, Trojan Horse, spyware, and worm designed to attack Windows are also compiled only to run on x86 processors. That means that any Windows PC running on an ARM processor will literally be almost 100 percent free from every existing form of Windows malware in the world.

The only exception will be macro viruses, which run off the Visual Basic for Applications (VBA) language built into Microsoft Office. As soon as Microsoft ports Microsoft Office from x86 processors to ARM processors, all macro viruses will also be able to run (and infect) files through Microsoft Office.

Through the simple act of switching from an x86 (Intel or AMD) processor to an ARM processor, you will be able to safely run Windows with much less concern for viruses and other forms of malware (at least initially). Starting with such a clean slate that renders almost every form of Windows malware obsolete, the safest way to run Windows will be on an ARM-based PC.

To threaten ARM-based PCs, hackers will need to recompile their malware for ARM processors. Some will undoubtedly do so, but many older forms of malware (that are still dangerous) will not be updated because the hackers who originally created them may no longer have the motivation to do so.

ARM processors can greatly reduce the threat of malware immediately. Then we'll just have to wait and see if the number of malware on ARM PCs starts to become as dangerous as the number of malware on x86-based PCs.

Microsoft still hasn't revealed a clear tablet strategy to deal with the iPad for the present, but at the very least, Microsoft is making the Windows side of computing interesting to watch again. Until this new version of Windows actually arrives in 2012, we'll all have to keep waiting to see how Microsoft plans to tackle the tablet market once more.

Apple News

Although Apple hasn't attended the CES show in years, their presence can still be felt. Numerous companies introduced iPad accessories while plenty of rivals offered tablet devices such as the Motorola Xoom (*www.motorola.com/Consumers/US-EN/Consumer-Product-and-Services/Tablets/ci.MOTOROLA-XOOM-US-EN.overview*), one of the first Android-based tablets that's actually using a version of Android (Honeycomb) designed for tablets.

Figure 3. Motorola offers one of the first Android tablets using Android 3.0 Honeycomb.

Apple introduced Mac OS X 10.6.6, a minor update that fixes a handful of bugs, but more importantly allows access to the Mac App Store. When you first install Mac OS X 10.6.6, you'll see the App Store icon on the Dock.

Figure 4. The App Store icon automatically appears on the Dock.

Clicking the App Store icon displays the App Store window where you can browse through different apps just like the iPhone/iPad App Store. If you buy iWork as a physical product in the store, you'll pay $79. However through the Mac App Store, you can pay $19.99 for Pages, Numbers, or Keynote individually so if you never need a spreadsheet, skip Numbers and just buy Pages and Keynote. The total cost of all three programs purchased through the Mac App Store is still less than the $79 retail price for the boxed set.

Figure 5. The Mac App Store lets you browse through categories of software for your Macintosh.

Finally, there's the iPhone on Verizon. Android has finally surpassed the iPhone, but the iPhone has been limited to a

single carrier. With the iPhone available on both AT&T and Verizon, we'll see if Verizon's network can handle the sudden load and whether people will still settle for Android phones on Verizon when they can have an iPhone instead (*www.marketwatch.com/video/asset/yho/%7B1E5F9BF1%2DA19E%2D4380%2DA414%2DF993B324E416%7D#!1E5F9BF1-A19E-4380-A414-F993B324E416*).

Change is the Only Constant

For those still resistant to changing their computing habits, read this list of items (*finance.yahoo.com/family-home/article/111745/things-babies-born-in-2011-will-never-know?mod=family-kids_parents*) that future generations will never experience themselves such as the need for Yellow Pages and White Pages phone books, paper maps, wrist watches, or audio CDs (*new.music.yahoo.com/blogs/amplifier/70991/2010-album-sales-way-worse-than-2009-album-sales/*). If you think changing technology isn't going to affect your world, then you can stand in the middle of the road like a deer paralyzed by oncoming headlights until you get smashed in the face with reality.

For those insistent that the Macintosh is still a niche product that can be safely ignored, the U.S. Senate used to agree with you. However for the first time in history, the Senate is allowing people to use the Macintosh (*www.sltrib.com/sltrib/blogsoutofcontext/50983431-64/lee-mac-iphone-office.html.csp*) if they wish.

More schools are even embracing the iPad as a teaching tool (*www.nytimes.com/2011/01/05/education/05tablets.html?_r=1*). Kindergartners at Pinnacle Peak School in Scottsdale, Arizona are using 36 iPads in a laboratory—named the iMaginarium—that has become the centerpiece of the school because, as the principal put it, "Of all the devices out there, the iPad has the most star power with kids."

Long Island University (*www.zdnet.com/blog/sybase/long-island-university-deploys-6000-ipads-may-double-that-next-year/695?tag=mantle_skin;content*) has embraced the iPad as well. "We started to realize that the need for PCs is starting to die," said Long Island University's CIO George Baroudi who claimed that tablets like the iPad cost one-third the price of a laptop. Plus armed with Citrix remote access software, they can run the same Windows apps a laptop can, just off a server.

Naturally, critics complain that iPads cost too much and that the same benefits can be achieved through lower-cost netbooks, which is the approach that the Detroit Public School system has chosen through their purchase of ASUS netbooks (*detnews.com/article/20110104/METRO01/101040403/DPS-says-laptops-for-students-will-end-'barriers-to-technology*) for their students. Perhaps an interesting experiment might be to give half the students in a class iPads and the other half ASUS netbooks. Then see which device really sparks the kids' imagination and learning.

The oddest comment about this netbook purchase was made by school board president Anthony Adams, who described the netbooks as a tremendous leap forward. "If Detroit Public Schools are all about the cutting edge, then this technology purchase today represents a critical part in how we educate kids," he said.

Does anyone associate the phrase "cutting edge" with low-cost netbooks? Whether students use netbooks or iPads, the main problem boils down to the teachers themselves. Technology can't substitute for lousy teachers, such as this Detroit school teacher who tried pawning her school-issued laptop for cash (*www.freep.com/article/20101230/NEWS01/101230095/1320/DPS-says-teacher-tried-to-pawn-school-laptop*).

Before giving schools iPads or netbooks, they should first flush out all the lousy teachers. With the bad teachers purged from the school systems, then maybe technology like a netbook or iPad can actually have a chance to make a difference.

The H.M.S. Titanic That is Microsoft

When the Titanic sailed on its maiden voyage, everyone claimed that it was unsinkable. After the Titanic hit the iceberg, people still believed that the ship couldn't possibly sink. Only after they saw water rushing into the ship and felt the ship slipping under the waves did people finally accept the reality that the Titanic really was sinking.

The same pattern of denial is slowly playing out with Microsoft. Years ago, nobody thought Microsoft could possibly lose their grip on the computing world. Microsoft dominated the desktop operating system market, the office suite market, and a good sized stake in the mobile phone market with Windows Mobile. If you wanted to get rich working with computers, you only needed to follow everything Microsoft did.

Suddenly, Microsoft no longer looks as invincible. When even pro-Microsoft enthusiasts start sounding alarms that Microsoft risks losing their dominance, that's the time to wake up and listen. A few years ago, nobody would believe Microsoft could ever be in trouble. Today, look at the alarmist headlines about Microsoft's future:

Information Week offers their "7 Ways to Save Microsoft in 2011." (*www.informationweek.com/news/global-cio/trends/showArticle.jhtml?articleID=229000038&cid=RSSfeed_IWK_All*)

Yahoo offered this dire headline "Microsoft Killed Courier Tablet PC, HP & Google Drop Microsoft: Is Microsoft Dead Already?" (*www.associatedcontent.com/article/5481116/microsoft_killed_courier_tablet_pc.html?cat=15*)

MSNBC offered this appraisal of Microsoft's tablet strategy: "Microsoft's answer to the iPad is still in pieces." (*www.msnbc.msn.com/id/40956320/ns/technology_and_science-tech_and_gadgets/*)

Even the die-hard, pro-Microsoft, Windows 7 News and Tips site worries Microsoft may not be as dominant as they once were, noting that Windows' share of the market dipped (*www.windows7news.com/2011/01/04/2011-bring-microsoft/*) from 92.21 percent last year to 90.29 percent. While not a dramatic drop, it's still a cause for concern. If Windows is so entrenched, why is its market share dropping at all?

Intel may not be immune from the effects of change either. For decades, people associated the success of Windows and Intel in one word: Wintel (*www.asymco.com/2011/01/06/this-is-the-most-exciting-ces-ever/*). Now with Microsoft moving to ARM processors, Intel may be left to fend for itself.

Approximately 95% of the world's mobile handsets and more than one-quarter of all electronic devices use an ARM chip (*blogs.wsj.com/tech-europe/2010/11/19/intel-microprocessor-business-doomed-claims-arm-co-founder/*). Dr. Hermann Hauser, a co-founder of ARM, claims that the value of chips which ARM collects a royalty on has overtaken Intel's microprocessor revenue this year for the first time.

"The reason why ARM is going to kill the microprocessor is not because Intel will not eventually produce an Atom [Intel's low-power microprocessor] that might be as good as an ARM, but because Intel has the wrong business model," said Dr. Hauser. "People in the mobile phone architecture do not buy microprocessors. So if you sell microprocessors you have the wrong model. They license them. So it's not Intel vs. ARM, it is Intel vs. every single semiconductor company in the world."

With so many neutral and pro-Microsoft enthusiasts questioning Microsoft's future, the evidence is clear. If Microsoft continues their current path of inertia, they could be heading for trouble really soon, unless they can manage to turn themselves around in a hurry. Even hard-core Microsoft enthusiasts can see that this possibility could occur with

increasing likelihood every day.

After all, look how many years it took Kodak and Polaroid to realize that the film industry was heading towards a dead end. Despite clear evidence staring right in front of their face with the growing popularity of digital photography, they ignored the warning signs until it was too late. Does anyone associate Kodak and Polaroid as leaders in the camera business any more?

Now with more people satisfied with built-in cameras on their mobile phones for general use, camera sales are dwindling (*news.yahoo.com/s/ap/20110107/ap_on_hi_te/us_tec_gadget_show_cameras*). After getting run over by digital photography, Kodak is about to get hit by a second wave as digital camera sales slowly evaporate. It's not often that one company gets slammed by two major shifts in technology in such a short period of time, but we'll see if Kodak can still manage to survive.

"When it comes to the future, there are three kinds of people: those who let it happen, those who make it happen, and those who wonder what happened." — John M. Richardson

The End of an Era Part 2

Remember when critics claimed that the iPad would flop because it didn't provide Flash support or a replaceable battery? Now the iPad represents a $16 billion dollar industry (*www.adelaidenow.com.au/business/ipad-now-a-16-billion-market/story-e6frede3-1225984347544*) with massive growth potential in the coming years. While other people are getting rich off the iPad, all those iPad critics have nothing to show for their vehement criticism other than simply looking foolish in hindsight, like critics who claimed that the airplane was impossible and even if a heavier-than-air machine could fly, it would have no practical use whatsoever.

A year ago on January 15, 2010, three months before Apple introduced the iPad to the world, I wrote an article called "The End of an Era," which you can still read on this site. Although I initially referred to the iPad as the "iSlate" and predicted that the virtual keyboard would be more flexible and customizable than it really is, read that article again with the benefit of hindsight.

At the time of publication, I received a barrage of anti-Apple criticism giving me a multitude of reasons why the iPad was destined to fail. After reading the year-old article, you can see how much of what I wrote was accurate in predicting that the iPad would be more than an e-reader but a fully functional portable computer that would kill the netbooks, cause Microsoft to quickly shove Windows 7 into a tablet to compete and promise Windows 8 as a response, while the iPad would go on to change the computer industry forever.

Anyone still believe that the iPad is doomed to fail? If not, what's stopping you from taking advantage of the biggest new computer category that will continue changing the world today?

* * *

Normally when you delete a file, the computer simply pretends that the file doesn't exist any more but leaves it physically on the disk. That's why it's possible to undelete previously deleted files using a special file rescue utility program.

If you don't want to risk someone undeleting a file, you need to securely delete it using the Secure Empty Trash command on the Finder menu. Securely deleting a file physically erases the file and then overwrites that file with random characters.

Figure 6. The Secure Empty Trash command really erases your files.

Random characters won't make it impossible to recover a deleted file, but it makes it infinitely more difficult for the average person to retrieve, which means all your securely deleted files will be safe from everyone except the government, which can afford expensive equipment to retrieve data no matter how many times it may have been erased. To learn more about how to retrieve supposedly deleted files, read a book such as *File System Forensic Analysis (*www.amazon.com/gp/product/0321268172?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=0321268172*)* by Brian Carrier.

In the early days, before Wally became an Internationally renowned comedian, computer book writer, and generally cool guy, Wally Wang used to hang around The Byte Buyer dangling participles with Jack Dunning and go to the gym to pump iron with Dan Gookin.

Wally is responsible for the following books:

Microsoft Office 2010 for Dummies (*www.amazon.com/gp/product/0470489987?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=0470489987*),
Beginning Programming for Dummies (*www.amazon.com/gp/product/0470088702?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=0470088702*),
Beginning Programming All-in-One Reference for Dummies (*www.amazon.com/gp/product/0470108541?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=0470108541*),
Breaking Into Acting for Dummies with Larry Garrison (*www.amazon.com/gp/product/0764554468?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=0764554468*),
Steal This Computer Book 4.0 (*www.amazon.com/gp/product/1593271050?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=1593271050*),
My New Mac (*www.amazon.com/gp/product/1593271646?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=1593271646*),

My New iPhone (*www.amazon.com/gp/product/1593271956?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=1593271956*),
My New iPad (*www.amazon.com/gp/product/1593272758?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=1593272758*),
Strategic Entrepreneurism with Jon Fisher and Gerald Fisher (*www.amazon.com/gp/product/1590791894?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=1590791894*),
How to Live With a Cat (When You Really Don't Want To) (*www.smashwords.com/books/view/18896*).
Mac Programming For Absolute Beginners (*www.amazon.com/gp/product/1430233362?ie=UTF8&tag=the15minmovme-20&linkCode=as2&camp=1789&creative=9325&creativeASIN=1430233362*)

In his spare time, Wally likes blogging about movies and writing screenplays at his site "The 15 Minute Movie Method." (*www.15minutemoviemethod.com/*) Wally can be reached at *wally@computoredge.com*.

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Beyond Personal Computing

“Downsizing and Combo-Apps:\r\nConvenience or Consternation?” by Marilyn K. Martin

Marilyn discusses how "Bigger is Better" became "Itty-Bitty is Best." Where is the middle ground when it comes to size of computers and technology? Tablets are within our "psychological comfort zone."

Suddenly, we have all these new scientific fields of nano this and nano that. Scientists watch with breathless anticipation as the SuperCollider in Europe looks for mere blips of split-off atomic particles that only exist for a fraction of a second. All to show us what the Big Bang was all about. Or else create a Black Hole on the French/Swiss border that will suck in all the molecules of our galaxy, and let all of our atomic particles enjoy being part of another Big Bang.

So is it any surprise that our age-old, beloved concept of "Bigger is Better" has now become "Itty-Bitty is Best"? Yet even as the hardware downsizes, the software and applications are exploding. Do we really need a future computer-gemstone in a ring, that can produce endless but dubiously "useful" information? Such as predicting which day your birthday will land on, every year from now to 3000? (Then again, if you want to plan a birthday-vacation to your Mars Time-Share, booking far into the future may be the best idea.)

What used to be "miniaturized" (a.k.a. "portable") has been taken over by nano-applications invisible to the naked eye. Like nano-particles that can be strung together, trillions upon trillions, to eliminate all poorly-performing cells in your body. And then going on to clean your swimming pool, stove and vehicle engine.

Personally, I think the allure of all this nano-stuff is basically just a Power Game. Even those of us permanently ordinary and inconsequential can now command Great Forces of itty-bitty nano-things, to do our bidding. We've all become Virtual SuperHeros, in total charge of the invisibly infinitesimal. Unlimited nano-power awaiting our every command. Just as soon as someone develops the right apps.

Although if history is any indication, we tend to yo-yo between mini and mega with our non-nano-sized electronics. Transistor AM pocket radios with batteries were rad, man, in the '50s. Then radios muscled-up to portable boom-boxes, with attached stereos that could be heard from the moon. Today we're somewhere in the middle. We want everything mini to carry around with us. But we also want the same product "enhanced" to monster-proportions, especially in our homes.

So it was inevitable that computers would downsize. Think of the room-sized Big Blue in the 1950s, through the desktop PCs a few decades later. I even did battle in the '70s with one of the first office computers. It was a huge, angled metal box, bolted to the wall, with green letters and a blinking green cursor.

And lumbering, clunky early word processing software with no pagination. Although it did operate by portrait page parameters. If you were revising an existing document, you had to put the bottom-of-the-page overage in limbo, until you could make room for it on the following page. It easily became a Formatting Nightmare, just trying to configure enough pages to contain the document. And, Yes, I did start taking blood pressure medication about that time.

I even worked on smart-typewriters, intermediate between typewriters and PCs. They had a narrow little screen above the keys, where you could see one partial sentence at a time of what you were typing or revising. And very limited memory. You couldn't write a book or store a huge project. But it was terrific to hold memos and letters a picky boss wanted to constantly tinker with before sending out.

Today, desktop PCs are still the most popular size, for home and office. Although a great variety of downsized laptops, notebooks and tablets are becoming more popular for portable-computing. These carry-around computers are getting smaller and smaller to cut costs, some even solar powered.

All so that children and even the Third World can have computers. Personally, I'd think the Joy of Sending E-mails would be somewhere down the list from Clean Water, Enough Food, Safe Shelter and Eradicating Disease. ("Killed an elephant. BarBQue tonight. Bring your own gourd!") But I could be wrong.

These are noble endeavors. And kids especially love those tiny notebook computers they can carry in their backpacks, that are fast approaching the weight and thickness of a couple pieces of cardboard. But little hands fit those small keyboards. And tiny fingers the size of a pencil eraser can manuever the itty-bitty touchpads with no problem. With tiny fingers jumping around to laboriously type one letter at a time. So cute.

But for adults using these downsized PC notebooks ... Well, let's just say that if you occasionally hear a burst of "colorful metaphors: in a Wi-Fi restaurant or library, it's probably from an adult whose palm accidentally brushed a touchpad while typing.

The cursor jumps, you see, and you end up typing on a different line, and in a different sentence. And if you "Send" that e-mail before proofing it, you can expect the receiving party to start sending you 'Brain Teasers For Mental Acuity' exercises. And spam-ads for Alzheimer's Rest Homes will undoubtedly start showing up in your e-mails.

And if you were working on a Project Report and didn't catch the errors, it will end up reading like one of those densely indecipherable government tomes: "It is highly recommended that research data suggests self-extermination viruses to follow up with monthly budget figures in frigid months ..." (Actually, didn't we go to war based on a document that sounded like that?)

The newest thing rocking the world of PCs are "tablets." These are smart-phones that are also tablet or slate computers. Touchscreens eliminate the need for a keyboard and mouse. And software continues to be developed, so that these phone-tablets' computing functions are expanding all the time. The Apple iPad hit the market first, including a touchscreen-keyboard, and astounded everyone. Now other manufacturers are scrambling to get into the smart-phone/tablet PC market too.

While other tablet PCs, not in combination with a phone, are aiming to merge with e-book readers. And one company (Kno, Inc.) is aiming for the textbook market. College students will be able to download a textbook, highlight text, and drag graphics. It will even save all their margin notes, for the romantically-challenged to send to their secret-crushes with the note "Here's my margin notes for our Paleo Dental Class. Wanna discuss ancient-drilling over a beer?"

Although, considering the outrageous prices of college textbooks today, "going tablet" might be the best study-boost in

decades. (But the late-homework excuses still won't fly: "My roommate was hogging the text-tablet." Or "Sorry. I couldn't download (or open) that specific chapter.")

We already have a Skype phone that is also a computer mouse. So more combinations, like computer-phones, may be on the horizon. The problem with too much combo-ing, however, especially with downsizing, is that things get tricky when all the combo-ing fails to address those must-be-large-enough-to-see aspects. Trying to see itty-bitty icons, and trying to read one 12 pt. sentence, word by word on a PC-phone mini-screen, will doom that misjudged appliance to the Abyss of Annoyance.

But electronics designers are pretty clever guys. They are keeping e-book readers in the tablet-to-notebook size for now. This reader-size is within our "psychological comfort zone," since the reader is still equivalent to most paperbound books. The problems start when the designers want these smaller and smaller PCs to take on more and more apps, which they hope we'll discover we just can't live without. But there are limits. Not for the apps, but for how well Baby Boomers can adjust to these seriously-downsized new applications.

But those cheerful designers have a sound biological solution: Sound. As in, 'If one physical sense is compromised (like eyesight) due to downsizing, use another sense.' Or put another way, 'If you can't read it, listen to it!' They already know that many a suburban commuter learns a new language or re-reads The Classics, while inching forward through traffic gridlock to get to their jobs everyday.

So the designers must figure that if touchscreens don't prove practical for everyone, or if too many Baby Boomers get sufficiently frustrated and furious trying to interact with smaller and smaller icons and text, talking-computers may be the solution. Which is not a bad idea. If talking-computers can ever advance beyond that irritating mono-tone 'voice' that sounds like a robot with a speech impediment, or a catatonic extraterrestrial.

But confusion frequently erupts when "electronic downsizing" ends up creating new and strange behavior. Oblivious people already wander the streets carrying on one-way conversations with downsized bluetooth ear-phones. I wonder how many more will get rounded up by police once ear-phones have PC connections. ("I dunno... I was just crossing the street, and got excited over the Quarterly Bonus announcement in my e-mail. And suddenly I'm wearing metal bracelets, and being told I'm under arrest for Rude Public Excitation!")

Although do-it-yourself downsizing involving computers, is to be strictly avoided if you aren't tech-savvy. The results are frequently not a pretty sight. Consider these disaster stories, when computer disc drives were upgraded and downsized. And users were told to convert their data from 5 1/4" floppy discs to 3 1/2" diskettes.

Computer Lab Supervisors tell of college students who merrily just folded over their 5 1/4" floppies, and then jammed them into the smaller 3 1/2" disc drives. Or the users who took scissors and simply cut their 5 1/4" floppies, to fit the smaller disc drives. And then were totally baffled why their computer couldn't read the mangled or trimmed floppies.

So how much more downsized and combo'd PCs can we expect? I've already seen a wrist watch-sized calculator, with buttons the size of cake sprinkles. But a wrist-computer? The lift-up screen alone would be the size of a postage stamp. So it would definitely have to 'talk' to you. Then we could all run around talking into our wrist-computer, like Dick Tracy.

Maybe these mini wrist-computers' best app will be to act as a conduit to our office computers. I can envision businesspeople sprinting past skyscrapers, trying to hail a cab, all while shouting instructions into their wrist-computer, "File that under Cost Declarations, and then pull up the file on my General Expense Account. And NOT the file labeled General Expulsion Account. I know they sound alike, but let's get it right this time, Computer!"

More likely, since we consumers are a fickle lot, we'll yo-yo between mini and mega, and then pick and choose what to incorporate into our lives. In the homes of the future, we'll probably have mega-computers embedded in our walls, controlled by voice commands. While we'll take a day-trip to the moon with a computer on our wrist.

Maybe novelty PCs will "go biological." We'll have an all-inclusive computer-in-a-keyboard embedded in our forearm, bumpy little glowing under-skin squares for the keys. It could become a fashion statement even, teens will love it, since you'll be able to randomly change the glowing colors of the bio-keyboard. Although carrying something bulky in your "keyboard arm" could result in your clavicle printing out last week's homework. So embarrassing.

Especially if it happens on the subway or a bus. Some older passenger will undoubtedly sigh and shake their head. "Get a real computer and a backpack," they'll offer. "That bio-computer makes you look like a robot sold out of a car trunk with no Instruction Manual!"

Marilyn K. Martin is a freelance writer of nonfiction and fiction living in East Texas. She is the author of several published mini-articles and is currently writing a Young Adult Science Fiction series, Chronicles of Mathias, (*www.amazon.com/Chronicles-Mathias-One-Reptilian-Rebirth/dp/1598249002*) Volume One and Two are available on Amazon.

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Editor's Letters: Tips and Thoughts from Readers

"Computer and Internet tips, plus comments on the articles and columns." by ComputorEdge Staff

"OpenOffice.org," "Senior Citizen Dilemmas," "E-reader PDF Transfer," "Cloudy Office," "Ear Buds"

OpenOffice.org

[Regarding the December 24 Rob, The ComputorTutor: Technology Solutions column:]

Rob, I think that you have done an excellent job of evaluating, in your usual in-depth way, the pluses and minuses of the Open Office tool set. I have been using the tools since it was to provide Office functions for engineers, without having to have your UNIX workstation and a PC on your desktop. I have found in Power User mode OO.o outperforms most MS tools and now have your problem of feeling clumsy when using MS tools. Also, the interface consistence between OO.o tools is superior. Thanks for the excellent article and I hope that it motivates more people to try OO.o.

-Don Piller, Escondido, CA

Senior Citizen Dilemmas

[Regarding Rob Spahitz's December 31 article, "Rob Looking Back, Looking Ahead":]

While the baby boomers are entering their deserved title of "Senior Citizens," we, of the 'very senior citizen group' (65-105+) are still finding our way to techie knowledge. Much of the information written assumes both vocabulary and technical language that the current baby boomers are already familiar with. Couldn't you add a paragraph or two in your weekly column, helping our very senior newbies (who finally have or previously reluctantly have) decided to learn the nuances of the message you provide weekly with your fine words of wisdom. Call it something like, in summary, 'For the Senior Life-long Learners' or whatever clever title you want to create near the end of the column. We want to learn, but we need your subtle translation of what you just wrote. Can you recall thirty years ago your frustrations with this new confounded technology? We are just there now. *We* don't have the luxury of time to learn it all because our days are numbered, but we want to be in the ball park—at least watching the game. *Help!*

-Grandma Julie, Alpine, CA

Grandma Julie, indeed the lingo in the computer world can be a foreign language. Let me see about drafting up an article to be the Rosetta Stone of the industry. This could take a while to compile, but thanks for the idea.

-Rob the Computor Tutor, San Diego

E-reader PDF Transfer

[Regarding the December 24 Digital Dave column:]

If Mr. Murphy is able to print the document, he can use any of the free PDF print drivers (I use GNU PDFCreator) to print a copy to a (gasp!) PDF file. That copy will not be locked when opened on the e-reader.

-Stewart A. Levin, Cetennial, CO

Cloudy Office

[Regarding the December 17 Windows Tips and Tricks column:]

Thanks for the heads up. I wonder if the cloud version is only for working on documents created in the cloud. Sort of like Word and WordPad both open .doc files but WordPad can't open all .doc files properly.

-Ron Cerrato, San Diego, CA

Ear Buds

[Regarding the December 24 Worldwide News & Product Reviews column:]

Would love to have them but I wear an aid in my left ear.

-Wm Tiep, Toledo, OH

ComputorEdge always wants to hear from you, our readers. If you have specific comments about one of our articles, please click the "Tell us what you think about this article!" link at the top or bottom of the article/column. Your comments will be attached to the column and may appear at a later time in the "Editor's Letters" section.

If you want to submit a short "ComputorQuick Review", or yell at us, please e-mail us at *ceeditor@computoredge.com*.
