Apple and e-book DRM: Will they? Should they?

by Dan Moren, Macworld.com

With Apple already firmly entrenched in the realms of digital music and video, it was only a matter of time before the company got into the future of the printed word. But aside from the few hints Apple CEO Steve Jobs dropped at the iPad unveiling last month, relatively little is known about the company's forthcoming iBookstore.

Case in point: will the e-books that Apple sells contain digital rights management? And, given that Apple has made such a big push to sell music free of DRM restrictions, should the company enforce it on books?

Will they?

The answer is almost certainly yes. While retailers like Apple and Amazon managed to browbeat the music industry out of using protected music files—it was just a scant few years ago that DRM was de rigueur for digital music—publishers are more likely to follow the example of the movie industry, which has retained a DRM stranglehold on its market. While book publishers have not yet seen widespread piracy of their titles to the magnitude that the music industry did, that could be chalked up to the lack of a significantly popular e-reader and easily available unprotected digital copies of texts.

Jobs did acknowledge that the iBookstore would use the free and open ePub standard for its e-books—it's also the most commonly used format for electronic books, though Amazon has eschewed it in favor of its own standard for its popular Kindle reader. While ePub doesn't have digital rights management built in by default, it does support adding the technology.

Google, Microsoft and Apple: Which one will thrive?

02.23.10
Preston Gralla, Computerworld

Apple, Google, and Microsoft are locked in a three-way struggle for industry dominance, competing to varying degrees on hardware, computer and cell phone operating systems, applications, entertainment, Internet search and more.

Today, Google owns Internet search, Microsoft owns operating systems and applications, and Apple owns high-end hardware and entertainment and media devices. That may well change, though. So it's worthwhile to ask: As each company looks to encroach on the turf of the others, which one is best positioned for the future—and which is most likely to fall?

Although Apple is riding high now, it's the most vulnerable of the three. That's because its success is built on the singular vision and talent of one person—Steve Jobs.

In plenty of companies, if someone else took the place of an existing CEO, the company would do just about as well. That's not the case with Apple and Jobs, though—for all intents and purposes, he is Apple. Before he returned to Apple in 1996, the company was floundering. He killed money-losing projects like the Newton; oversaw the creation of a host of innovative products, including Mac OS X, the iPod, the iPhone and the iMac; and rejuvenated the company. Harvard Business Review last year named him the most valuable CEO in the world, because under his leadership, Apple's market value increased by approximately $150 billion, delivering a 3,188 percent industry-adjusted return.

That's both the good news and the bad news for Apple. As long as Jobs is on the job, great. But he won't be CEO forever, and there's no heir apparent who can match his vision. My guess is that after he leaves, Apple will experience a long, slow decline.

Apple, far more than Microsoft or Google, has a business model somewhat akin to that of a Hollywood studio: It requires blockbuster hits in order to bring in big profits. When Jobs leaves, those hits will stop coming.

Of the three, Google is best positioned to thrive in the future. It has a near monopoly on Internet search, the core of the world economy's greatest growth engine. That gives it both an excellent base to expand upon, as well as a massive war chest it can depend on to fund new ventures. Although at times Google takes a scattershot approach to product development, it has heavily targeted high-growth areas as well, notably mobile devices. Because of that, it is well positioned to take advantage of the mobile device advertising boom that is likely to develop in the coming years. And although Google isn't likely to compete seriously against Microsoft in the operating systems and applications markets, it will gain enough revenue from its offerings to make it a player in those businesses.

Finally, there's Microsoft, which falls somewhere between Apple and Google. Unlike Apple, it doesn't need big hits in order to grow. With a stranglehold on operating systems and productivity applications, and with solid enterprise tools, it will grow steadily. Google won't be able to break its near monopoly. The success of Windows 7 shows that the release of a new operating system still brings in plenty of revenue. Recently, Microsoft had a blowout quarter, increasing revenue by 14 percent over the year-

Engineering: The Mac is coming back

02.12.10
David Morgenstern, ZDNet

Most attendees at the Macworld Expo in San Francisco this week — distracted by plentiful iPhone apps, whispered tales of the forthcoming Apple iPad, and the sight of dancing booth workers with their faces covered by unfortunate costumes of gigantic Microsoft Office for Mac icons — may have overlooked a trend: The Macintosh is back in the engineering segment.

Engineering, which was often lumped into the beat called "SciTech," once was strong segment for the Macintosh. Then in the early 1990s, the platform's position was weakened and then lost. But now the Mac appears poised for a strong return.

One piece of evidence was the release by Computational Engineering International (CEI) of a Mac-native version of the company's EnSight CFD, software for analyzing and visualizing computational fluid dynamics. Previously, the Linux software ran on the Mac in the X11 windowing environment.

The company said the new Cocoa version removes a number of issues OpenGL limitations in X11, improved graphics performance and of course, offers Mac users the full range of support for input, Mac UI and services.

Also in the fluid dynamics space is a forthcoming native version of Caedium by Symscape, which was formerly called SymLab. The version was mentioned just the other day in the company's newsletter:

Just to be clear, this is not a Windows version running in Boot Camp or Parallels, and not an X Application, but a true native Mac OS X application. The relative ease of producing a native Mac version of Caedium along with the existing Windows and Linux versions demonstrates the unique cross-platform architecture embedded within Caedium from its initial conception. Caedium will become one of the few (maybe only) commercial CFD analysis tools to run as a native application on the Mac.

In CEI's Ensight blog, called Viz Worth Watching, a post says that Caedium isn't a "replacement for Fluent or Star-CD or STAR-CCM or AcuSolve or any of the myriad of super powerful CFD tools which are available from government labs or industry."

Caedium is a CFD environment from end to end. Its solver inside is OpenFOAM. And its priced at $1,000 and less, depending on the option. It reads geometry, or lets you create geometry, mesh, apply boundary conditions, solve in OpenFOAM, and visualize the results in Caedium's post-processing. Caedium also exports to EnSight format (and some other 3rd party post-processors) for improved post-processing.

In addition, German developer Graebert this week announced its ARES CAD platform for Mac, Windows and Linux, which supports AutoCAD-compatible command line and scripts.

"Engineering is primed to take off now [on the Mac]," said Darrin McKinnis, vice president for sales and marketing at CEI of Apex, NC. He said there was a "growing ecosystem of applications" to support Mac engineers and while previously, many engineers purchased Mac hardware to then run Linux applications or even Windows programs in virtualization, his company had seen increasing demand for a native Mac version.

McKinnis pointed to a number of engineering teams around the country that are now almost all working on Macs. With the native Mac apps, the loser will be Linux, he said.

McKinnis has a long (and painful) history with engineering solutions on the Mac. He was once an engineer at the NASA Johnson Space Center in Houston, where in 1995, CIO John Garman decided to eliminate "unnecessary diversity" and switch thousands of Mac workstations over to Windows 95.

The battle was joined between NASA's directive at the time for Better, Faster, Cheaper," and what Garman dismissively called "Mac huggers" (a techno-word-play on the "tree huggers" environmentalist sobriquet). It didn't help that Garman was mentioned in a Microsoft advertisement that thanked customers for their "contributions" to Windows 95.

NASA Mac users tried hard to point out that this policy would cause problems. My MacWEEK colleague Henry Norr wrote a series of articles about the fight to keep the Mac at NASA, which won a Computer Press Association award. Here's a slice of his Feb. 12, 1996 front page story:

"Making me take a Pentium is like cutting off my right hand and sewing on a left hand," said a Mac user at NASA's Johnson Space Center in Houston who recently faced forced migration to Windows. "I'll learn to use the left hand, but there's no doubt my productivity is going to suffer, and I'm going to resent it."

To this engineer and hundreds of other Mac users at the space center, such desktop amputations hardly seem like an effective way to comply with agency administrator Dan Goldin's much-publicized motto, "Better, Faster, Cheaper." To them, the space center's new policy of standardizing on Windows is wasteful, unnecessary and infuriating, and they are not taking it lying down.

Eventually, the fight went to hearings at the Inspector General's office. McKinnis was one of the staff who testified there. While the investigation concluded with a report that sided with the Mac users, the Mac was supplanted.

This action was replicated in many other places and segments of course. And Apple's own confused and changing systemware strategy didn't help matters. Cupertino circled the wagons around a dwindling number of segments and the needs of engineers were sometimes neglected. In addition, Apple lost some credibility with claims that some hardware and APIs were 64-bit when they weren't.

"Yes, the time between System 7.5 and Mac OS X were dark days," agreed McKinnis. On the other hand, today's Snow Leopard is solid, he said. "We're running the heck out of it."

Google, Microsoft and Apple:

earlier period, thanks to skyrocketing Windows 7 sales. And although Microsoft won't unseat Google as the Internet search leader, Bing shows that it can make plenty of money in that business.

So looking ahead, expect Google to thrive, Microsoft to stay the course, and Apple eventually to lose its Jobs-driven magic.

Apple announces MacBook hard drive repair program

02.17.10
Marco Tabini, Macworld.com

A "small percentage" of MacBook owners whose hard drives fail will be eligible for a free replacement under a warranty extension announced by Apple this week.

The laptops in questions are both black and white MacBooks models bought between **May 2006 and December 2007**; according to a page on the company's support site, the hard drive failures can be diagnosed through a simple, yet despair-inducing method: your computer simply stops working and, upon boot, displays a folder icon with a superimposed question mark.

Apple encourages customers who are experiencing these symptoms and whose machines were purchased within the eligibility period to visit their local Apple Store or contact its customer support department for a drive replacement. According to Apple's Website, users who have already paid for out-of-warranty repairs may be eligible for a refund.

Naturally, a drive replacement is unlikely to bring your data back—which is why Apple, somewhat tersely, "recommends that you back up your data." Eligibility extends to either three years from the date of purchase or August 15, 2010 (whichever is longer), so you've got about six months for your hard drive to crash. No, that is not a challenge.

Details can be found at: www.apple.com/support/macbook/hd/repairextension/

Apple and e-book DRM: Will they? Should they?

One such DRM technology is Adobe Content Server, made by the same fine folks who've brought you Acrobat and Creative Suite. Adobe Content Server supports encrypting documents in both PDF and ePub formats, and the technology is used by many other e-book vendors (though not, as mentioned above, the Kindle).

But in a conversation with our colleagues at Computerworld, Adobe's senior business development manager Nick Bogaty said that the company had not licensed its technology to Apple. While Adobe has used this to make a big fuss about the lack of portability for e-books bought from Apple, it shouldn't exactly come as a surprise to anybody who's the least bit familiar with the folks in Cupertino. (Not to mention that many e-book users seem disenchanted with Adobe's system and its promised interoperability.)

For one thing, Apple has had no qualms about foregoing interoperability in the past. The FairPlay DRM system that the company used to protect music and still uses to protect video has never been licensed for use on devices other than Apple's own. And despite complaints about lack of choice, the locked-in nature of the iTunes ecosystem never seemed to substantially hinder Apple's sales. Then again, ripping music from a CD was always an option, as was buying music from other sources once Apple started selling unencumbered MP3 files.

Besides, FairPlay is still baked into all of Apple's devices and the iTunes Store, which is the basis for the App Store and presumably the iBookstore as well. Why go to an outside source? Especially one with whom Apple has recently and vociferously (by Apple standards) been at odds.

Should they?

It's hard for me to argue that Apple should enforce DRM on its titles, especially given my own vocal past protestations to the contrary. That said, as I wrote above, digital publishing remains a nascent industry and it doesn't yet suffer from the problems the music industry did. With the music industry, DRM was about trying to stuff the genie back into the bottle: CDs were long the predominant form of music distribution, and every single one was packed to the brim with unprotected digital music easily liberated from their confines.

Popular distribution of e-books is still young, and they don't have the downside of having been available in an unprotected digital format. Though the concept has long been around, e-books never quite caught on, in part because there was never a blockbuster iPod-level device for consuming them—reading books on the computer has never appealed to most of the people who've traditionally consumed the physical

product, and myriad e-book readers have come and gone without catching on.

That's started to change recently, especially with the advent of the Kindle—the iPad and iBookstore will likely only further e-books' popularity. And that makes things interesting, because it potentially gives the e-book market one thing that the digital music arena never quite managed: two competing, popular, incompatible formats. (Even the combined might of the multitude of Windows Media players and services never posed a significant threat to the iPod and iTunes.)

The use of DRM is the publishers' way of hopefully avoiding the same terrible fate as the music industry. That eventuality has scared Hollywood too, so movie studios have slammed the lid on all of their content. Frankly, though, it seems to me as though that lockdown has done little to curb piracy with the added result of stifling legitimate innovation (Hulu's moves to block the watching of its content on TVs is a key example).

DRM has always been a double-edged sword: there's good intentions behind making sure that those responsible for creating a song, movie, or book are rewarded for their time and work, but any creative effort is only meaningful if it's consumed by an audience. What good is a book nobody ever reads or a movie nobody ever sees?

One thing that makes me hopeful is that while the ePub format can support DRM, such protection is not mandated by the standard. It remains to be seen whether or not Apple will allow publishers to forego DRM if they want to, but as the Los Angeles Times points out, popular tech publisher O'Reilly Media has come out strongly against DRM, publishing a number of its titles as DRM-free e-books. And, more important, O'Reilly has seen sales increases as a result of those measures.

Then again, it took a long time for Apple to convince the record companies that DRM was hurting them more than helping them—the iTunes Store debuted in 2003 and music DRM wasn't abolished until 2009. One thing that hastened along its demise was the rise of a DRM-free alternative in the form of the Amazon's MP3 store, which launched in the fall of 2007. This time, Amazon and Apple entered the field in reverse order, so Apple, as the latecomer, is

e-book DRM

positioned to potentially shake things up. And who knows what the field might look like six years from now?

For me—as the son of two librarians—the freedom to consume books on my own terms is a key factor for the success of e-books. One of the great joys of reading books is sharing them with others and while some device makers, such as Barnes & Noble's Nook, have tried to cobble together some functionality for sharing books, the results have been underwhelming. I don't want to go through a byzantine process for sharing a book when I could just be handing a physical copy to my friend.

The trouble, as so often, is media companies trying to impose the rules of the physical world onto the digital world. News flash, guys: it's a different world with different rules. Much as you try to jam it in, you can't fit a square peg in a round hole.

Are publishers finding iBookstore terms hard to swallow?

02.16.10
Marco Tabini, Macworld.com

Magazine and newspaper publishers are reportedly encountering difficulties in negotiating with Apple to bring their periodicals to the iBookstore, which Steve Jobs unveiled alongside the iPad last month.

According to the Financial Times, the major sticking points seem to be revenue sharing and the amount of information that Apple shares with its App Store partners.

On the revenue front, an unnamed media executive is quoted as stating that "Thirty per cent forever changes the economics" in reference to the share that Apple takes out of every sale made from its online digital media store.

The issues revolving around customer data seem to be more complex. Magazine and newspaper publishers have traditionally collected and mined considerable amounts of information about their subscriber base—a practice that would become much more challenging in the iBookstore, given Apple's policy of not sharing any data about App Store buyers.

Given the financial challenges that it faces, the publishers' negotiating power with Apple may be limited by the iPad's expected popularity as a multi-purpose mobile platform. In the end, the market may simply have to align itself with the realities of digital distribution, much like the music industry did with iTunes.

Publishers make way for the iPad

03.01.10
Serenity Caldwell, Macworld.

As we creep on toward the iPad launch, developers are scurrying about getting their apps ship-shape, consumers are twiddling their thumbs waiting for pre-orders to be announced, and print publishers are making preparations. Apple, of course, announced that its iBookstore would cater to books, but it seems that periodicals are going to have to make their own arrangements.

On Monday, a leaked memo revealed publisher Condé Nast's plans for a slow rollout of its magazines in iPad app form. The company already has an iPhone app and development team for GQ , its men's magazine, and it seems likely that the same basic format (articles and photos from the magazine plus extra, app-only content) will translate over to the iPad.

Condé Nast's planned release matrix has its iPad app for GQ coming out sometime in April, Vanity Fair and Wired in June, and Glamour and The New Yorker in late summer/fall. (Wired already showed off a potential prototype, constructed using Adobe's Flash.) Pricing will be variable at first, depending on advertisers and e-subscription count; the success of these initial offerings will determine whether the company follows suit with the other magazines in its catalogue.

Meanwhile, the Associated Press announced the construction of a new business unit called "AP Gateway," for the marketing and creation of digital products. AP, which currently has an iPhone app available, is using this new division to expand applications for smartphones and other devices as well as create and manage new content for specific events (like the

Winter Olympics). An iPad app is already in the works and although no firm pricing is available as of yet, senior vice president and AP chief revenue officer Jane Seagrave mentions that the program may start out as a free service.

This is a new step for the Associated Press in terms of revenue generation; in the past it has relied almost entirely on fees paid for its stories by newspapers, broadcasters, and the like. With an expected 6 percent revenue decline in that area for its 2009 financial statement, the AP is toying with creative new ways of drumming up revenue—and for the first time, helping smaller newspapers deliver content instead of the other way around.

No doubt, this is only the first wave of iPad related publishing, but the AP and Condé Nast are making a fine start.

Could Apple get even cooler? Duuude!

03.05.10
Joe Aimonetti, MacFixit

According to patent filings recently dug up by AppleInsider, Apple is seeking to create a cooler Mac with a variety of internal cooling mechanisms. This comes as no surprise to those of us who have endured the radiating heat from our MacBook Pros while working on the go.

As portable devices such as MacBook Pros, iPhones and iPod Touches, and soon the iPad become more powerful, the need for innovative cooling of internal components becomes increasingly important. One of the four applications details a method for cooling using special flow sensors that detect the amount of airflow in the internal components of your Mac and adjusting system settings accordingly.

The other applications feature a design method for opening ports, such as USB and FireWire ports for increased airflow, using a specially designed hinge to transfer heat generated by electrical components to a secondary housing located in the device, and a process using thermoelectric cooling employing the "Pelteir effect."

Shoot tethered to control your camera from your Mac

Take pictures from your Mac by tethering to your DSLR, point-and-shoot, or even an iPhone.

02.17.10
Derrick Story, Macworld.com

Your digital camera and Mac can work together to capture images as well as display them. Many DSLRs, and a handful of compacts, have the ability to shoot tethered, which means you connect a camera to your Mac via a USB cable, then control the camera remotely. With this kind of setup you can save files directly to your hard drive, preview the images on the computer screen, and even control your camera from an iPhone.

When to tether

Tethered shooting is useful for situations when regular handheld photography isn't convenient. If you want to shoot birds visiting a feeder, for example, but know your presence will scare them off, position the camera on a tripod and snap the pictures from your Mac a safe distance away. The birds aren't aware of your presence and you're able to preview and capture images as if you were standing right next to them.

Tethering is also handy when you need to position a camera in an awkward location, such as up high for a sporting event or a wedding. Some studio photographers use tethering to show their clients large screen views of the images on the computer monitor right as they're shot. Finally, tethering is helpful when you are shooting large files and want to save them directly to your computer's hard drive instead of constantly swapping full memory cards in and out.

Tethering is primarily a DSLR activity. There are a few compact cameras, such as the Casio EX-F1 that have this ability, but they are in the minority. And if a camera, such as the EX-F1, does advertise this capability, read the specs carefully to make sure that the Mac necessary software is included with the hardware.

Use the right software

Canons EOS Utility

If you have the right software, the setup is remarkably easy. Canon, for example, includes its EOS Utility with DSLRs, which is a terrific application for remote control photography. Just connect your Canon DSLR via its USB cable, launch EOS Utility, and choose Camera Settings/Remote Shooting. Click on the Remote Live View Shooting button, and you're seeing the world through your camera's lens on your Mac display.

You can also change many of your camera's settings, such as exposure compensation, white balance, and ISO, using the control window on your Mac. Once you take a picture via the virtual shutter release button, the image re-appears on your Mac for review. You have the option of saving the files to your Mac, or to both your Mac and the camera's memory card, creating an instant backup for every shot recorded.

Nikon DSLRs can also be tethered, but unlike Canon, they don't include the software with the camera. You can purchase Nikon Camera Control Pro 2 ($150) for remote shooting, or try a third party application such as the free Sofortbild, which gets high marks from Nikon users. You can also use the photo management application Lightroom with the free plug-in LightroomTether by Mountainstorm.

Shooting tethered with Olympus Studio and an E-30. Some Nikon and Canon cameras can be tethered to your Mac using Aperture 3. Refer to this Apple Support Document to see if your particular model is supported. As Apple states it on its Aperture 3 tech specs page: "Tethering requires compliance with standard protocols that are not supported by all camera models."

Other camera brands, such as Olympus, may also support tethering. Olympus Studio ($100) for example, does a terrific job of tethering some of its DSLRs. I tested it with the E-30, and it worked great. If you're shopping for a new DSLR and tethering is important to you, be sure to investigate what software options are available to you before making your purchase.

iPhones get in on the action

Aperture users can also tether their iPhone cameras directly to Apple's pro photo management application. You don't get the remote shooting function, but the images are downloaded directly into the Aperture library of your choosing for instant viewing and storage. Just connect your iPhone to your Mac, select a Project in Aperture to store the images in, then go to File -> Tether -> Start session.

If you don't want to manually fire the camera on your tethered iPhone, you can use software such as Joby's free Gorillacam app and set up interval shooting. You can select between 3 and 200 frames captured at intervals from 1 and 120 seconds. Each time the iPhone camera fires, the image is uploaded to Aperture. You could walk away from the entire rig, have a cup of coffee, and have a library of images waiting for you on return.

An iPhone or iPod touch can also be used as a remote control for tethered Canon and Nikon DSLRs, using one of my favorite iPhone apps called DSLR Camera Remote by onOne Software. Download the application to your iPhone, install the free server software on your Mac, and fire everything up.

With the lite version of DSLR Camera Remote ($1.99;) you can trigger your camera from anywhere as long as your Mac and iPhone are on the same WiFi network. With the pro version ($19.99); you can also change camera settings, view captured images on your iPhone, and look through your camera's viewfinder remotely. If you want to get geeky, you could even set up an AdHoc network with your Mac laptop and us this rig just about anywhere.

Share tethered images on a network

Remote sharing gets even more interesting with Image Capture on Macs running Snow Leopard. Since you have your DSLR or iPhone tethered to the computer

Shoot tethered

anyway, why not share it with other Macs on your network? Open Image Capture, select the connected camera under Devices, then check the Share Camera box in the lower left corner. Now go to another Snow Leopard Mac on the network, launch Image Capture, and you'll see the camera in the Shared devices list. You can view images on the camera's memory card and even copy them to the computer. This is a great feature for team projects when multiple users want to access a single capture device.

There are many alternatives to holding your camera and pressing its shutter button to record an image, or for those times when you want to take advantage of your large computer hard drive for photo storage instead of using the memory card in your camera. For those situations where that just isn't practical, explore tethered capture.

InDesign: Resize image, frame at same time

02.15.10
Pariah S. Burke, Macworld.com

For users of recent versions of InDesign, the confusion over how to resize an image instead of cropping it evolves from two issues. First, selecting the image with the Selection tool (black arrow) actually selects the frame, not the image within it. Dragging a frame handle resizes the frame, not the image, thus cropping or adding blank space rather than resizing the image. Second and more importantly, InDesign CS3 and CS4 introduced a slight change in the way to simultaneously resize images and their frames, compared to previous versions.

That tiny change messed up a lot of users.

If you used any InDesign version up to and including CS2, you knew that in order to resize a graphic frame and the image it contained, you had to begin dragging one of the frame's handles and hold down the Command key while you dragged. As of CS3 that method no longer worked.

The change was when you press the Command key relative to dragging a frame handle. Prior to CS3, you could press Command at any time while dragging the handle. Now, you must

press and hold the Command key before you begin dragging or you will not resize the frame. This subtle difference occasionally catches just about all longstanding users.

Fortunately, there are other ways to simultaneously resize an image and its frame—without using the Command key. In InDesign CS3 and CS4, you can use either the Scale or Free Transform tools to accomplish the same thing. Select either tool from the middle of the Tools panel, click on the graphic frame (with the black arrow key) to select it, and begin dragging a handle; both the frame and the image will scale simultaneously without the need to press the Command key.

To resize the picture and its frame with the Scale or Free Transform tools, just grab the frame handle and drag.

To maintain the image proportions as you scale, you'll still need to hold down the Shift key—but you can press it at any time before or after you begin dragging.

When you're happy with the size of the photo, immediately select another tool in the Tools panel so that you don't continue to resize or otherwise change the picture.

Also be aware that if you drastically enlarge a photo, it will start to look pixelated, so be sure to do the bulk of your image resizing in Photoshop, and confine your InDesign tweaks to smaller changes.

Microsoft's Charney Suggests 'Net Tax to Clean Computers

03.02.10
By Robert McMillan, IDG News Service

How will we ever get a leg up on hackers who are infecting computers worldwide? Microsoft's security chief laid out several suggestions Tuesday, including a possible Internet usage tax to pay for the inspection and quarantine of machines.

Today most hacked PCs run Microsoft's Windows operating system, and the company has invested millions in trying to fight the problem.

Microsoft recently used the U.S. court system to shut down the Waledac botnet, introducing a new tactic in the battle against hackers. Speaking at the RSA security conference in San Francisco, Microsoft Corporate Vice President for Trustworthy Computing Scott Charney said that the technology industry needs to think about more "social solutions."

That means fighting the bad guys at several levels, he said. "Just like we do defense in depth in IT, we have to do defense in depth in [hacking] response."

"I actually think the health care model might be an interesting way to think about the problem," Charney said. With medical diseases, there are education programs, but there are also social programs to inspect people and quarantine the sick.

This model could work to fight computer viruses too, he said. When a computer user allows malware to run on his computer, "you're not just accepting it for yourself, you're contaminating everyone around you," he said.

The idea that Internet service providers might somehow step up in the fight against malware is not new. The problem, however, is cost.

Customer calls already eat into service provider profits. Adding quarantine and malware-fixing costs to that would be prohibitive, said Danny McPherson, chief research officer with Arbor Networks, via instant message. "They have no incentive to do anything today."

So who would foot the bill? "Maybe markets will make it work," Charney said. But an Internet usage tax might be the way to go. "You could say it's a public safety issue and do it with general taxation," he said.

According to Microsoft, there are 3.8 million infected botnet computers worldwide, 1 million of which are in the U.S. They are used to steal sensitive information and send spam, and were a launching point for 190,000 distributed denial-of-service attacks in 2008.