

online

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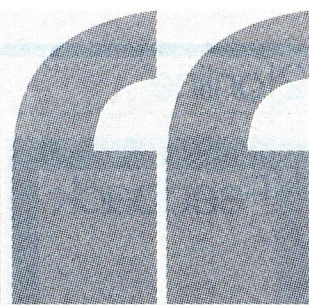
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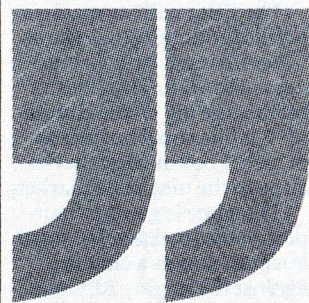
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Is the writing on the wall for net porn?

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May the fraud be with you

Record companies are making it impossible to play — and copy — music CDs on a PC, says **Tony Smith**

Even before Star Wars: Attack of the Clones had officially opened to cinema audiences worldwide, pirate DVDs of the highly anticipated movie were being offered through internet newsgroups and spam email. As a spokeswoman for Lucasfilm admitted, there is little it can do to stop anyone from smuggling in a digital camcorder, pointing it at the screen — and later burning

hundreds of copies using a DVD-R drive and a PC.

No wonder, then, that when Sony released the Attack of the Clones soundtrack album in Europe, it wanted to make sure unauthorised distribution was impossible. "Will not play on PC/Mac," warn the disc's front and back covers, and sure enough, anyone trying to play it on a computer or to "rip" its tracks to their hard drive will find it difficult.

If that disappoints **page 2**



ILLUSTRATION: HENNING LOHLEIN

Feedback

Big Brother

I'm very disappointed with the conclusion at the end of Working the Web BBC (May 30). "You may as well use it, since (for now at least) we are all footing the bill."

The BBC, with its massive public funding, totally skews the commercial media business in the UK. This doesn't hit just the big media companies, it hits small businesses as well. Look at what they've done to the magazine market.

The same is going to happen on the internet. No small business stands a chance against the mighty BBC and its publicly funded development budgets.

I am launching a new website, Curiousfox.com, in a couple of weeks. It's a local history and family history contact site. It's a good idea, the time is right and we've set it up on non-existent budgets. But if it works, how long before the BBC just throws a few switches and puts us out of business? In the UK, the BBC is the biggest threat faced by any new media business.

Rosanne Sharp
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RealPlayer

Paul Trueman correctly says that you need RealPlayer to optimise value from the BBC website. Unfortunately, RealPlayer is not available for the new Mac OS X operating system. So, until the end of this year, I and many other Mac users, will be unable to access BBC content.

Warren Newman
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Inky fingers

Choosing a computer printer (Second sight, May 30) is even harder than choosing a mobile phone, where the buyer is clearly shown the running costs for each offer.

That is not the case with printers. The price of cartridges is often similar between models, but the capacities vary enormously. HP's Deskjet 820i printer has a 39ml colour cartridge; its Deskjet 840 colour cartridge contains just 15ml. How many pages per ml? Nobody is telling.

We have a national standard for comparing fuel consumption of cars and energy costs for fridges. So why not for printers?

John Geddes
john@takeyourtoothbrush.com

Waste not

Jack Schofield blithely argues that disposable printer cartridges may be best. But we

need to realise that on our finite planet there is no "away" to throw anything. Maybe Jack should read the UN report Global Environment Outlook 3 prepared for the Johannesburg summit which demonstrates the severely threatened state of the earth and realise that we all have a responsibility for working toward sustainable solutions?

Professor Peter Reason
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Potential print

I'd been refilling an old Olivetti 192 for a while, then bought an Epson 790, failing to check the question of refilling. I sourced a refilling kit, but five inks and a resetter would cost £60, including £15 for the chip resetter. Cartridge World in Gosforth, Newcastle upon Tyne, has the kit but still charges £10 a refill. I wrote to Epson but got no reply. The Intellidge chip system doesn't seem to measure the ink, but to count the pages. I would say this contravenes trade descriptions, and normal expectations, of the product. Please let me know how I can dispose of the 790. The latest in this line is the 810. Does this have the chips? I have gone back to using a couple of old Canon BJC 4200s which are adequate as I went off the digital photography idea, thanks to the 790.

John Sanders
johnsanders1@onetel.net.uk

Fix it, Linux

Neil Barnes (Feedback, May 16) asserts that there is a problem with getting files from Linux to windows. There are solutions in Unix but they are not well distributed. If you break a Linux Window manager (Craig Nelson, same page) tell someone and they will get it fixed. Fixing problems is a purpose of the Linux developer community.

Ralph Hinton
London

Data defence

I have had a number of problems with a northern university failing to supply all the data that they hold, in a subject access request in 40 days. The vice chancellor's nominee admitted that they breached the Data Protection Act.

Interview notes, which it voluntarily refused to supply, saying it was not their policy to allow access to them, were not available to me when I asked for them in a data subject access request, having been turned down for promotion by an all-male interview panel in favour of two men.

J Priestley
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ADSL success

On the recommendation of a friend, I signed with Pipex for the Xtreme Solo Service (a DIY ADSL connection). I booked the service on its

website on Monday. By Saturday I was watching the green light and a box pop up on my screen to confirm my 256Kb upstream and 512Kb downstream connection.

This is the only real answer for anyone who wants "24/7" access.

John Robinson
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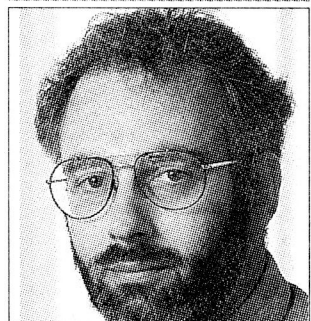
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Learning from the adult sites

Second sight Dave Birch



The relationship between high-speed internet access and the content industries remains unresolved. Will ubiquitous broadband drive the demand for premium content to fill the pipes or will it demolish content-based business models for good? To find out turn to the grown-up sector.

As the take-up of broadband communications grows, one sector that

thought it would do well from the shift from low-speed to high-speed access was the "adult" sector. As has been the case since time out of mind (see, for example, the evolution of VHS video in the US), the producers and consumers of pornography have provided a laboratory for rapid technological change and its relationship to rapid evolution of business models. I can't do better than to reference the Economist, which once advised readers that "butts'n sluts.com" might be a better place to find insight into the future of web-based business models than corporate marketing departments.

For the adult sector, already an experienced exploiter of the internet, moving to broadband appeared to be a no-brainer. Websites soon began to offer movies and video streaming alongside their traditional fare made up from text and pictures. Unfortunately (for the websites) the law of unintended consequences has kicked in. Now that their consumers have broadband, it has become possible for them to download the entire contents of naughty websites in a reasonable time and with reasonable convenience.

On a typical cable modem or ADSL link, downloading 600Mb of website content and then burning it on to a CD might take three or four hours, but that's no longer a big barrier. Consumers log in, sign up with their credit card, fire up some shareware to Hoover up all of the content on the website and rebuild it locally, and then go out to dinner. When they come back, they cancel their subscription.

It may get even worse for the adult service provider. At the end of the month, when the credit card bill arrives, the consumer calls the bank ("hey, someone's stolen my credit card number") and charges back the original subscription. Now they have all of the content and it's cost them nothing.

Since a large fraction of the little that consumers will actually pay for online content is spent on adult content (Jupiter put it at \$273m out

People sign up, download the site and then cancel

of a total market of \$1.4bn), trends in that sector are important. Not that the content industry is unaware of the dangers. Yahoo found that finance sites were plagued by screen scrapers running every few seconds to grab real-time stock quotes (traffic on the finance sites dropped by 80% after the screen-scrapers were blocked). The content owner who provides a premium service finds that people sign up for it, download the information and then provide the service themselves.

Content owners want consumers to have broadband so that they will view movies and so forth online. But given ubiquitous broadband, the content will slip away like sand through their fingers. This is not to say that it is impossible to sell content online. Consumer Reports, the American equivalent of the UK's Which?, has been charging \$24 a year since 1997 for online access to its product ratings and now boasts 800,000 paying subscribers. There are other successful niches, such as the New York Times crossword, but it would be brave to bet the future of the sector on them.

In the UK, BT has already

decided to abandon the broadband content business and concentrate on providing access. But access to what? It could be that the real value of broadband will be in high-speed interaction, not in high-speed viewing. Thus one might expect online interactive game playing across high-speed low-latency networks to be a beneficiary. Playing Quake Arena via wireless LAN and cable modem from my house against my brother 70 miles away was amazing fun. Having said that, figures released recently at the industry's annual show (the Electronic Entertainment Expo) indicated that fewer than 10% of online players would pay extra to play.

Broadband models may be about creating a community that consumers actively want to participate in. Here, as I have previously noted, the "always on" characteristic may still be the driving force rather than the greater bandwidth per se. The validation of this theory may already be visible in the US marketplace where a survey found that while the most popular use of the dialup internet was email, for hi-tech always-on super-fast broadband users it was ... email.

Be with you

◀ page 1 some of the sci-fi saga's many fans, so be it. Sony is just one of a number of major media operations willing to risk consumer disapproval to end piracy, increasingly driven by the ease with which digital media can be copied using standard PCs. The music and movie empires are striking back, and if a few personal freedoms are trampled underfoot, that's just tough.

"We have to take a stand against piracy," says Universal Music Group spokesman Adam Livsage. His sentiments are echoed by colleagues from Sony, EMI and Bertelsmann Music Group (BMG). They plead that their business is being decimated by commercial pirates and ordinary folk uploading and downloading music from the internet.

Certainly the PC has become the 21st century's successor to the tape-to-tape cassette deck. It is capable of reproducing any digital information regardless of whether the user has the right to do so. With the internet, and CD and DVD writers, any home computer can become the basis for the mass distribution of perfect copies.

Naturally, the makers of these systems enjoin users not to "steal" content — even as they're encouraged to "Rip. Mix. Burn" CDs of their own. No one can deny that products like Apple's iTunes and Microsoft's Windows Media Player have perfectly legitimate uses, but it is their power to make copyright material available to all at almost no cost that scares Sony.

The International Federation of Phonographic Industries (IFPI), the representative body for the music business, estimates that one digital copy was made for every two CDs sold last year. Worldwide, album sales fell 5%. Sales of CD-R media, on the other hand, have nearly tripled since 1999.

IFPI accepts that "one copied CD is not necessarily one lost sale of the original". UK CD sales were up 7% last year, and market researchers find that users of internet file-sharing services such as Audiogalaxy, KaZaA and MusicCity Morpheus tend to buy more CDs than other consumers. Even Sony's own figures show listening to music drives sales. But it is hard not to conclude that today far fewer people are buying music because they can download and burn it for free.

Whatever the extent of such activity, corporate fears over lost revenue and lost control may be provoking a massive over-reaction that threatens not only piracy but legitimate uses. According to organisations such as the UK's Campaign for Digital Rights and the US-based Electronic Frontier Foundation (EFF), the user's right of access granted by long-established copyright laws.



That is certainly the case with Sony's Attack of the Clones disc. The album may not be capable of being ripped to the net, but that's little consolation for anyone who quite legitimately listens to CDs on their computer. The disc contains extra data that stops it from operating in a PC or Mac; consumer CD and DVD players just ignore this special track, a key component of Sony's Key2audio copy protection technology.

Attack of the Clones isn't Sony's first anti-rip CD. According to company communications chief Jonathan Morrish, a "dozen or so" discs have been released in the UK since last December, among them albums by Deacon Blue, Celine Dion, Shakira, Ozzy Osbourne and Roger Waters. They represent around 4% of the company's CD output.

If that seems too small a figure to be a serious threat to piracy, it's because Sony is taking a cautious approach. After BMG caused controversy last year by copy-protecting Natalie Imbruglia's White Lilies Island, mainly by not telling anyone it had done so, Sony doesn't want to face the same media outcry.

BMG is more open too. Its logic, that if the public knew about the test it would invalidate any attempt to determine whether the anti-rip mechanism caused problems with consumer CD players, was faultless, but problem-

atic. By definition, if a disc wants to meet the CD standard, it has to work on any compatible player, including PC-based units. If it doesn't, it's not a true CD. If a disc claims to be a CD and doesn't play in a compatible player, its maker is in violation of trade descriptions legislation, says Dai Davis, a consultant with IT law firm Nabarro Nathanson. Which is presumably why Sony's anti-rip discs don't sport the familiar Compact Disc Digital Audio logo.

Morrish admits that anyone who uses a computer as a hi-fi will be disappointed with the Attack of the Clones CD, and adds that Sony may support PC playback if it's an issue with consumers. Key2audio includes a downloadable player application CD suppliers can offer if they wish. So far, few consumers have complained, Morrish says — a claim echoed by BMG and Universal, who put the number of returned CDs as a very tiny percentage of the millions released in Europe alone.

The copy-protection technology chosen by Universal and BMG is Cactus Data Shield from Israeli encryption specialist Midbar. It too blocks ripping, but does allow PC playback through an embedded player application — though it plays back "near CD quality" compressed versions of audio tracks, not the real thing. That may satisfy some users, but others, who

have grown used to copying tracks to an MP3 player, won't be happy. That is illegal under UK and soon EU law, notes Davis, but it's a violation, made for convenience rather than criminality, that many music fans have none the less become accustomed to making with impunity.

Most people would agree that is a reasonable use of copyright material, as would cracking the code protecting other media to allow protected content to be viewed on unsupported platforms. Alas, content companies have no truck with that idea. Indeed, the two defining digital rights legal cases were launched against Linux users who simply wanted to view legally acquired content on their operating system.

Russian programmer Dmitry Sklyarov was arrested in the US last year after visiting the country to talk to encryption experts on how he had bypassed the code Adobe uses to protect eBook text and created a utility to extract that text. Had he been found guilty of breaking the code, Sklyarov would have faced up to 25 years in gaol, but Adobe dropped the case, and in return for testimony against his employer, Elcomsoft, the Russian was allowed to return home. Elcomsoft, however, remains in the dock for selling Sklyarov's software in the US.

Sklyarov was indicted under the USA's Digital Mil-

lennium Copyright Act (DMCA), which outlaws any attempt to bypass copy-protection technology. The same law, which came into force in 2000, was used to gag a magazine, 2600: The Hacker Quarterly, for publishing the source code for DeCSS software. It was created by 15-year-old programmer Jan Johansen to copy DVDs to a hard disk to make them viewable in Linux.

Johansen himself faces trial in his native Norway for his part in the development of DeCSS under the country's own anti-hacking laws. DeCSS bypasses a DVD's content scrambling system (CSS). CSS is so simple it can be broken with just seven lines of code, but that's enough for anyone to fall foul of the DMCA, whether they offer the software, publish the source code or discuss it in academia — the latter traditionally a defensible "fair use" of copyright material.

Don't assume only American coders have it bad — anti-encryption technologies violate UK copyright law, according to Davis. The European Union Copyright Directive (EUCD) of May 2001 told member states they have until the end of this year to enact similar legislation.

That, warns Martin Keegan of the Campaign for Digital Rights, will effectively grant content companies scope to define their own

copyright law. "Copyright law was developed to balance the rights of the content creator to an income with the needs of others to view and use that content," he says. "Encryption software protected by the EUCD, allows the music industry to write its own rules as to how copyright material may be accessed and distributed. Effectively, the market and not the public is being allowed to define what's fair use and what isn't."

For example, a DVD might not play until you click an Accept button signalling you agree not to say anything bad about the disc's contents or the company responsible for it. An extreme case, perhaps, but one "encryption technology as law" makes possible, warns Keegan.

And worse may come. In the US, South Carolina Democrat senator "Fritz" Hollings has proposed the Security Systems Standards and Certification Act (SSSCA), which calls for the integration of copy-protection technology in any device capable of presenting content to the consumer.

The SSSCA is a long way from enactment and is sufficiently impractical to impose that it may never be put on the statute book. But that won't stop the music and movie companies from pursuing copy protection strategies. Sony plans to release more anti-rip discs in the UK.

Malaysia to Manchester, media giants are cracking down on pirated DVDs and CDs

PHOTOGRAPH: ANDY WONG/AP

BMG will do the same but on a pan-European basis. Universal has committed itself to protect all pop releases worldwide by the end of the year. The remaining two of the "big five" music companies, Warner and EMI, wouldn't detail their strategy, but it is hard to see them rejecting copy protection. The Association of Independent Music labels (AIM), which makes up almost all remaining UK CD sales, is exploring the technology, too.

They will all need to stay on their toes. Canny PC users have already beaten Sony's Key2audio with PostIt notes, and utilities available online allow CDs to be copied binary bit by binary bit thus sidestepping the PC's error checking mechanism, which most anti-rip technologies fool into believing the CD contains corrupt data.

As the Attack of the Clones DVD shows, ending piracy forever may prove impossible, but the media empire will continue to extend its copy-protection technologies to overcome PostIt note tricks and the like. And if a few established personal freedoms are trampled in order to protect corporate revenue streams, so be it.