

irdeto

ePublishing Security Journal

brought to you by Irdeto ActiveCloak™



Irdeto – A long history of enabling sustainable digital businesses



For more than 40 years Irdeto has been helping to evolve the consumer's connected day - from the sights and sounds in your living room, to seeing sports scores and highlights on your mobile phone, to securely accessing or sharing digital records, Irdeto enables a connected world that has become the landscape of our personal and business lives.

As you read this magazine, we hope you will better understand why it's critical to protect your digital content "in the wild", and how Irdeto can help you meet your business objectives. We already enjoy strong relationships with Hollywood studios, leading payTV operators and consumer device manufacturers, and we now look forward to forging similar win-win relationships with the publishing industry – and with you.

Graham Kill
Chief Executive Officer

Through our content monetization and protection technologies, Irdeto helps create flexible and sustainable businesses for our customers by offering content creators and providers the ability to securely protect their digital assets from theft or misuse. Irdeto also enables companies to create and deliver compelling media experiences that draw audiences back for more, and has earned us a reputation as one of the premiere technology companies supporting the movie, TV, mobile, gaming and software application industries.

Against this backdrop of pioneering new media solutions and the nearly 100 years of publishing experience of our parent company, Naspers, we are very excited to extend our expertise to the realm of digital publishing with the introduction of ActiveCloak™ for ePublications, the world's first dynamic security solution for all types of digital publications. ActiveCloak for ePublications leverages our experience in protecting premium video content to help publishers and other rights holders, aggregators and device manufacturers monetize content and protect emerging business models on a wide variety of popular consumer devices, including PCs and Macs as well as tablets and smartphones.

Irdeto highlights

- enabled the world's first digital satellite pay-TV network
- enabled the world's first mobile broadcast TV service
- introduced the world's first dynamic security solution for media
- introduced the world's first dynamic security solution for ePublications
- core technology deployed on over two billion applications and devices

Please visit Irdeto at www.irdeto.com

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Breaking News - Irdeto Launches ActiveCloak for ePublishing

Dynamic Security Solution Now Available to the ePublishing Industry for Long-Term Protection and Monetization of Digital Content across Any Consumer Device

FRANKFURT and NEW YORK – October, 13, 2011

– As the next step in providing an end-to-end dynamic security solution for owners, distributors and enablers of premium digital content, Irdeto, a global software security and media technology company, announced today the launch of its new Irdeto ActiveCloak™ for ePublications solution at both the Frankfurt Book Fair, the largest book and media fair in the world, and Digital Content Monetization East (DCM East), a premiere industry summit focused on sustainable, multi-platform delivery of digital content.

“We launch Irdeto ActiveCloak for ePublishing today with the certainty that publishers cannot monetize digital assets without a dynamic security solution,” said **Martin Sendyk, SVP of products at Irdeto**. “History has shown us that every digital asset or device that is of economic or technical consequence has been hacked, without exception. The static security methods of the publishing industry are unfortunately insufficient to protect the long-term value of the ePublishing business model. At this critical time, we introduce ActiveCloak for ePublications as a solution to enable both the reactive reduction and proactive prevention of digital piracy.”

As digital publication sales continue to experience rapid growth alongside the adoption of new consumer devices, digital piracy problems are accelerating. With more eBooks now being sold than paper ones, many in the publishing industry do not fully appreciate the threat of digital piracy and have not taken sufficient steps to prevent it. Irdeto ActiveCloak for ePublishing, the first solution of its kind for the publishing industry, has the unique ability to protect premium content on all popular platforms and devices by applying state of the art layered security technologies with diversity and renewability.

Irdeto, a wholly owned subsidiary of publishing and internet company Naspers, has been protecting content for rights holders and distributors for more than 40 years; first for the pay TV industry, and now in the digital media space.

In February of 2011, Irdeto launched Irdeto ActiveCloak for Media, the first and only dynamic security solution to protect and monetize digital entertainment assets from catch-up TV to premium movies. In September, the company announced that the overall functionality of Irdeto ActiveCloak had been expanded significantly to include any device in a home network or over-the-top (OTT) environment. The company’s move into digital publishing is the result of an unmet publishing industry need as well as the inherent ability of Irdeto ActiveCloak to establish a software-based protection platform for any device and asset.

“Publishers are realizing that digital publishing should be much more than shovelware,” said Bill Rosenblatt, president of GiantSteps Media Technology Strategies. “As they branch out into new business models, they will need content security technology that supports those business models, is cross-platform, and provides robust content protection over the long term. Irdeto’s ActiveCloak is capable of meeting all of those objectives.”

Irdeto ActiveCloak for ePublications targets digital magazine, book, textbook, professional journal and newspaper distributors, providing the security lifecycle management approach necessary to maximize the monetization of digital assets over their economic life. Adopting the ActiveCloak for ePublishing solution will provide the following benefits:

- Protection of circulation numbers by identifying specific content leaks and eliminating illegitimate sources of content.
- Preventing margin erosion by frustrating the pirating of content and dramatically reducing the impact of attacks.
- Enabling the growth of subscription revenue and customer relationships by preventing the availability of unauthorized content.
- Preservation of advertising revenue by maintaining existing visibility of readership.

Marquee solutions where Irdeto ActiveCloak technology is present include Netflix, Sony, Toshiba and Comcast.

About Irdeto

Irdeto is the most innovative software security and media technology company in the world. Through its dynamic monetization and security technologies, the company allows new forms of distribution for broadcast, broadband and mobile entertainment, as well as for the world's most popular apps, eStores and consumer devices. Co-headquartered in Amsterdam and Beijing, the company employs more than 1,000 people in 25 locations around the world. Irdeto is a subsidiary of multinational media group Naspers (JSE: NPN). Please visit Irdeto at www.irdeto.com

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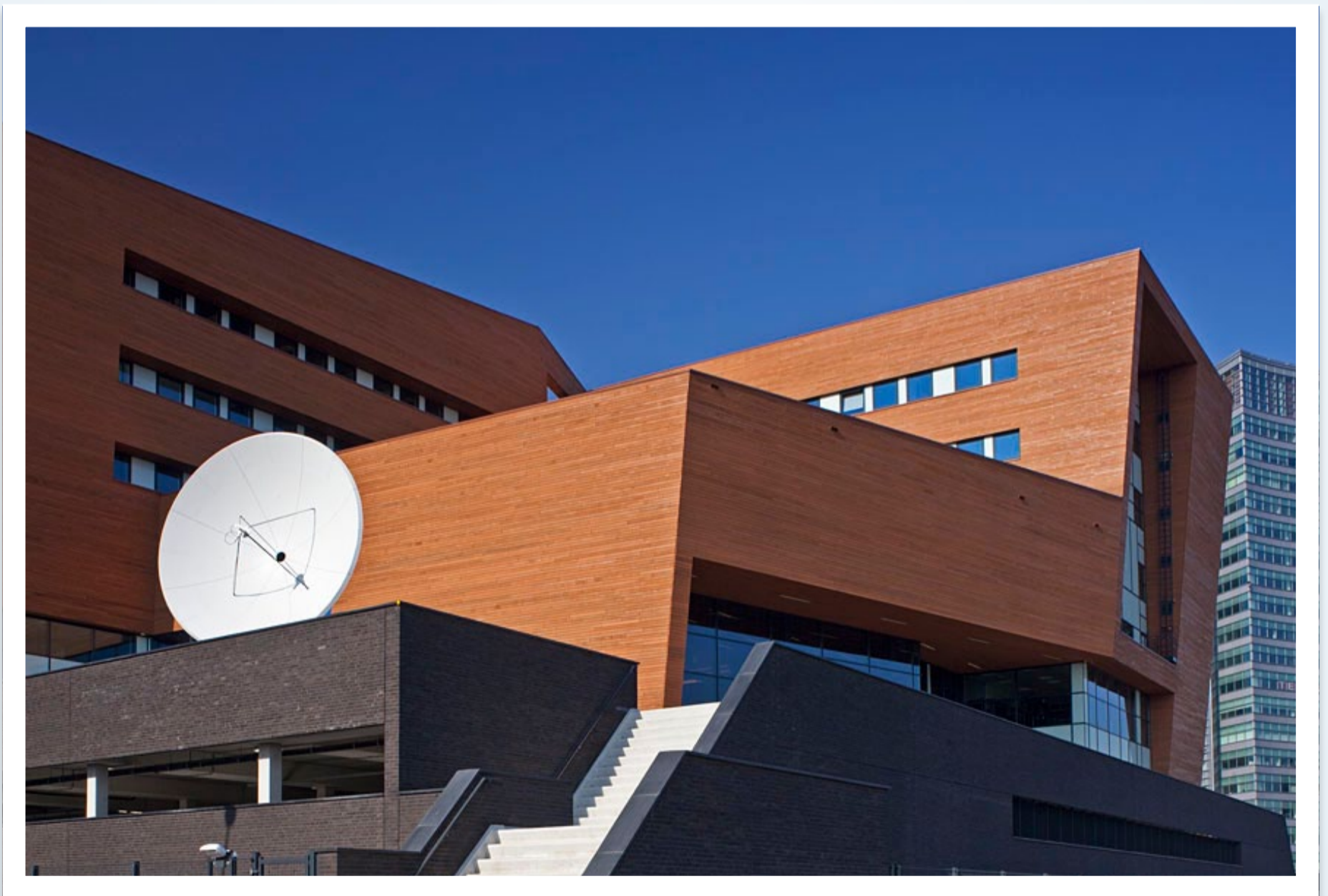
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The Rise of ePublications

When it comes to any form of digital content, whether it is a video, game or ePublication, the goal is to get it on as many consumer devices as possible while minimizing the risks associated with the distribution. The greater the distribution, the greater the chance that your customer is going to be able to access your product in the way they want and be willing to pay for it. Ultimately, if you do not distribute what consumers want, they will find a way to get it anyway. One of the most famous examples of this is the Harry Potter books, which are not available in a legitimate digital format. Yet digital versions of all seven books can be found individually and as a collection on most of the pirate sites.

In the past, eBooks and eMagazines were more of a niche market until the launch of the iPad, which included iBooks, and dedicated eReaders like the Kindle and Nook. Today, many people read ePublications in digital format, to the point that some major distributors are stating that they are selling more eBooks than paper versions.

There are many advantages to ePublications. Digital copies are often the same price or less expensive than their paper counterparts. Text can be enlarged to accommodate for failing eyesight. You can carry hundreds of books and magazines with you wherever you go. Purchases can be made from any location as opposed to only at a book store or from a magazine rack.

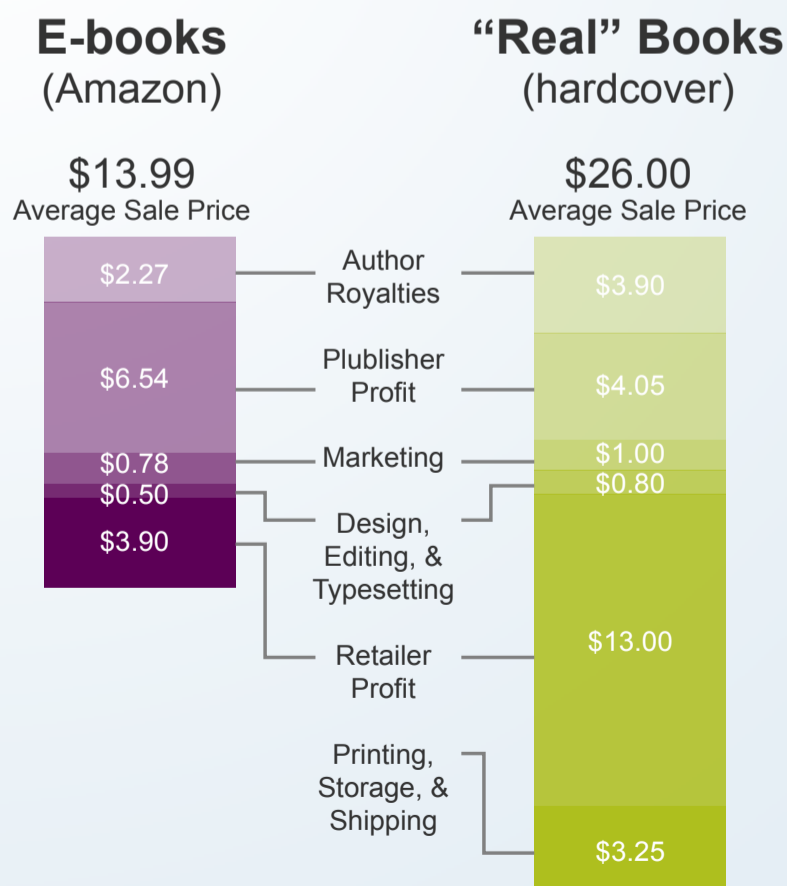
But there are a number of issues that must be ironed out to realize the value of ePublications from a business point of view. First and foremost is the question of piracy. When the iPad was launched, it was the first time that eReaders went from a niche product to a bona fide method for reading eBooks. An Initial analysis of piracy showed an average 78% increase in unauthorized downloads.

The margin for eBooks compared to paper versions is much smaller for most of the players in the supply chain. This means that each pirated copy has a greater impact on the revenue flow. If 100,000 copies of a paper version were sold, the retailer would claim \$1.3 million. There are few sources for book losses, such as damaged products or lost shipments, so the revenue total remains high as long as the book sells.

If the same number of eBooks were sold, the retailer would only gain \$390,000. However, if 10% of those books were pirated the retailer revenue would drop by nearly \$40,000. And for some eBooks, a 10% piracy number is low. Given the smaller revenue and greater chance of piracy the risks associated with ePublications is very high.

However, there is a greater opportunity to increase sales using digital editions. The associated costs are less as there are no physical stores required, and consumers do not have to travel to a location to purchase a copy. And the price for an eBook is typically less than a physical copy, prompting people to take the risk to buy a \$14 eBook instead of a \$26 hard cover.

As with any digital asset, piracy is always going to be a factor. But as long as proper precautions are taken, such as implementing a Dynamic Security protection model, the benefits of greater reach and accessibility, not to mention satisfying consumer demand, outweigh the drawbacks.



Source: *The New York Times*

Book Piracy – Evolving with the times

To some extent, ePublications are more in jeopardy of piracy than movies. While movies have a longer shelf life and generally greater consumer traction, the small file size and frequency of ePublications, specifically eMagazines, make them attractive to pirates. Increased bandwidth speeds and ‘always on’ computers enable people to download pirated videos, but it still takes a fair amount of time, whereas an ePublication can be downloaded in a matter of minutes. Consumers are also much less likely to put up with poor audio or video quality in a program as opposed to the occasional formatting issues that is present with some pirated eBooks.

Even with physical copies, people find ways to get access to the content. Some people may think that a book is not going to be copied, but there are methods around that. If given enough time and desire, a person could physically type out the entire contents word by word. More sophisticated pirates can even take photos of each page and automatically turn the page to turn a physical book into an eBook in a matter of minutes. But these are time consuming processes, based on the efforts of someone looking to actually create a pirated copy of something as opposed to those that download copies that are already available on various torrent sites.

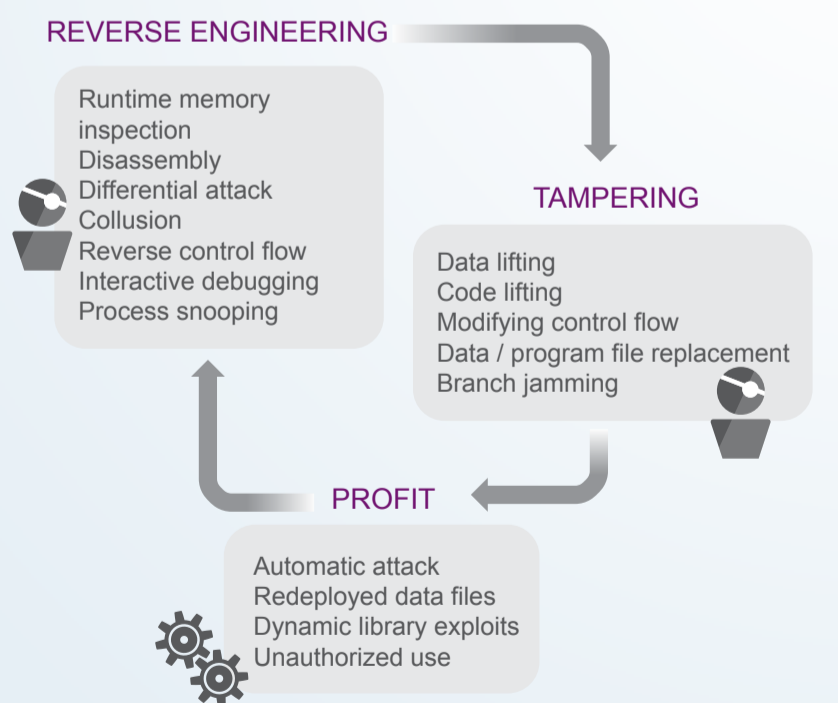
With ePublications, which includes eBooks, eMagazines and any other form of electronic words and images, the ability to obtain a copy becomes easier. Most ePublications are protected using a DRM, similar to how music and movies are protected. However, as is demonstrated with these forms of digital content, DRMs are not a failsafe protection method.

There are multiple places within the distribution chain that hackers attempt to access digital content, with the most common being once it is downloaded onto a computer. This is because the PC is the most “open” device in terms accessing files and hacker tools. There are multiple attack methods that can be used to crack the security on a piece of content, and once the protection is removed, it is clear to be pirated.

Sending content directly over the cloud can help mitigate some of the risks as the files are stored on the end device. But even in this case, there are ways to access the consumer product to download the files to a computer to penetrate the DRM defences.

Whether motivated by profit, by ego or simply by the desire to access content for free, history has proven that, given enough time and resources, hackers will find a way to crack any protection mechanism placed in their path. The secret to defeating them is to make the task of breaking the security so difficult that it is no longer worth their effort to do so; in other words, to break the hacker business model.

Fortunately, there are countermeasures that can be employed to secure digital content. However, as hacking techniques get more advanced, so too must the protection methods that are utilized.



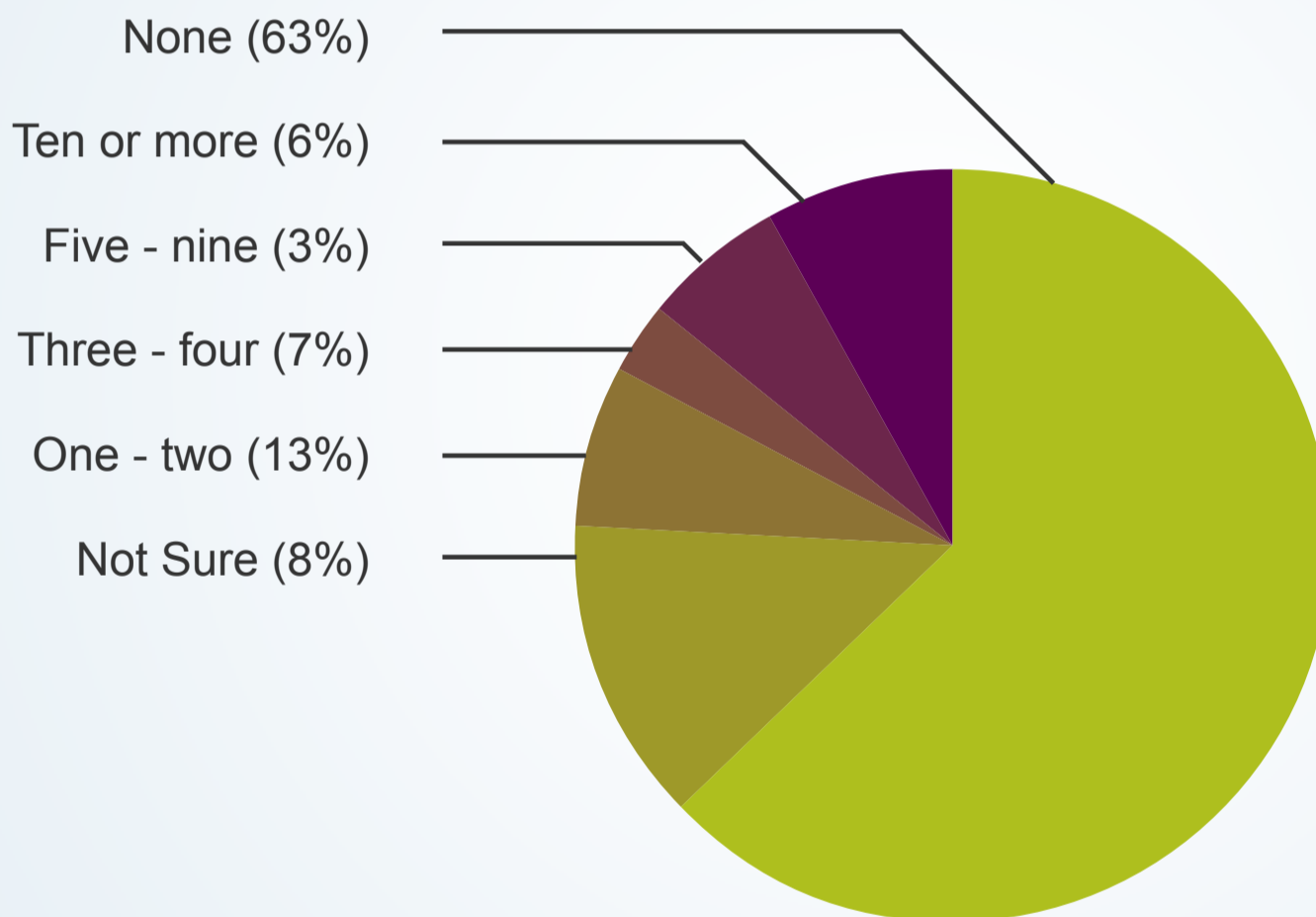
Common methods used by hackers to attack application code and gain unauthorized access to content

Tools commonly used by hackers to reverse engineer and defeat DRM and other software protection systems

| | |
|------------------------|---|
| Debuggers | Allows hackers to step through the code being attacked, often bypassing common obfuscation methods |
| Decompilers | Used to convert binary code (machine language code) into source code which is easier to understand and manipulate |
| Disassemblers | Used to convert binary to a higher-level assembly language |
| Packet Sniffers | Used to intercept and log traffic passing over a digital network in order to analyze its contents |

ePubs Piracy by the numbers

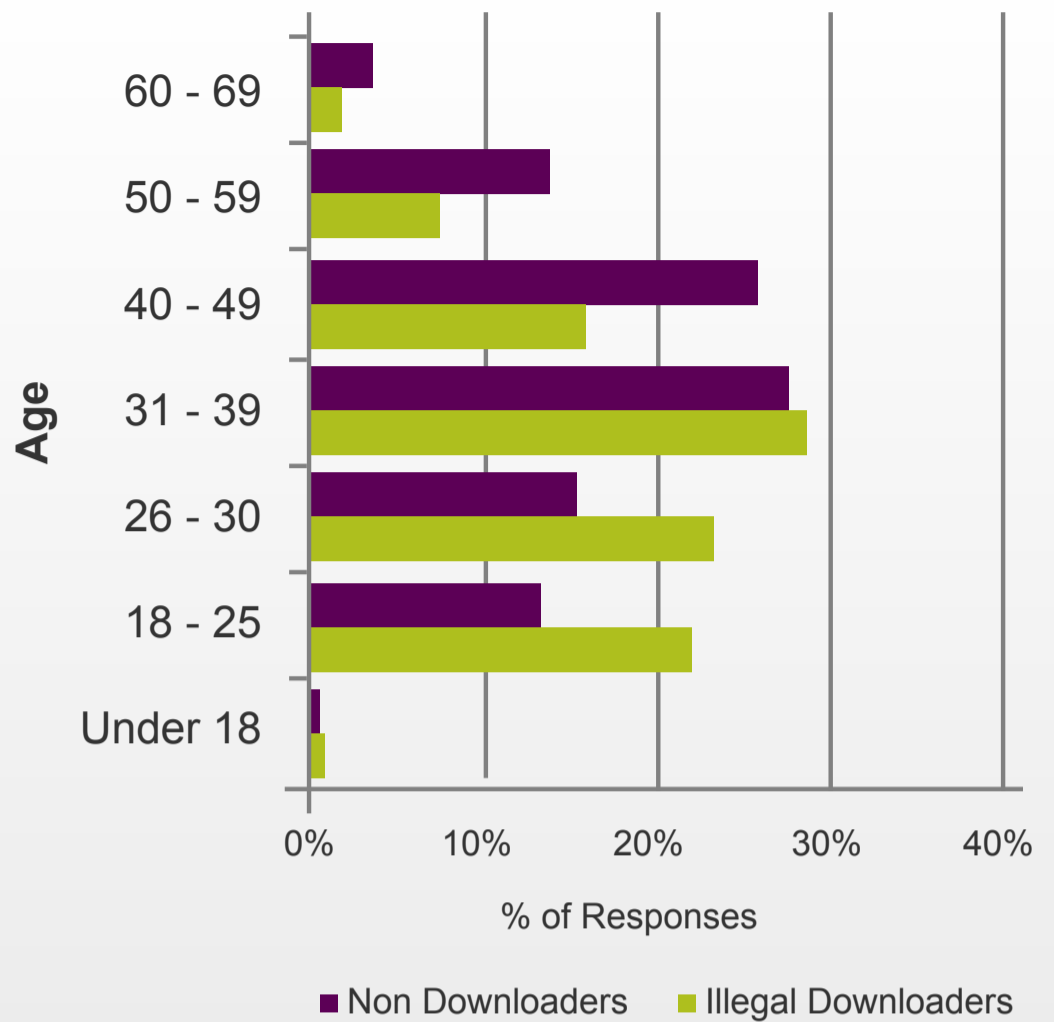
“How many times in the last twelve months have you downloaded an e-book from an online file storage such as RapidShare, Megaupload, Hotfile, etc.?”



29% of e-reader owners use unregulated Torrent services

Source: Verso Digital

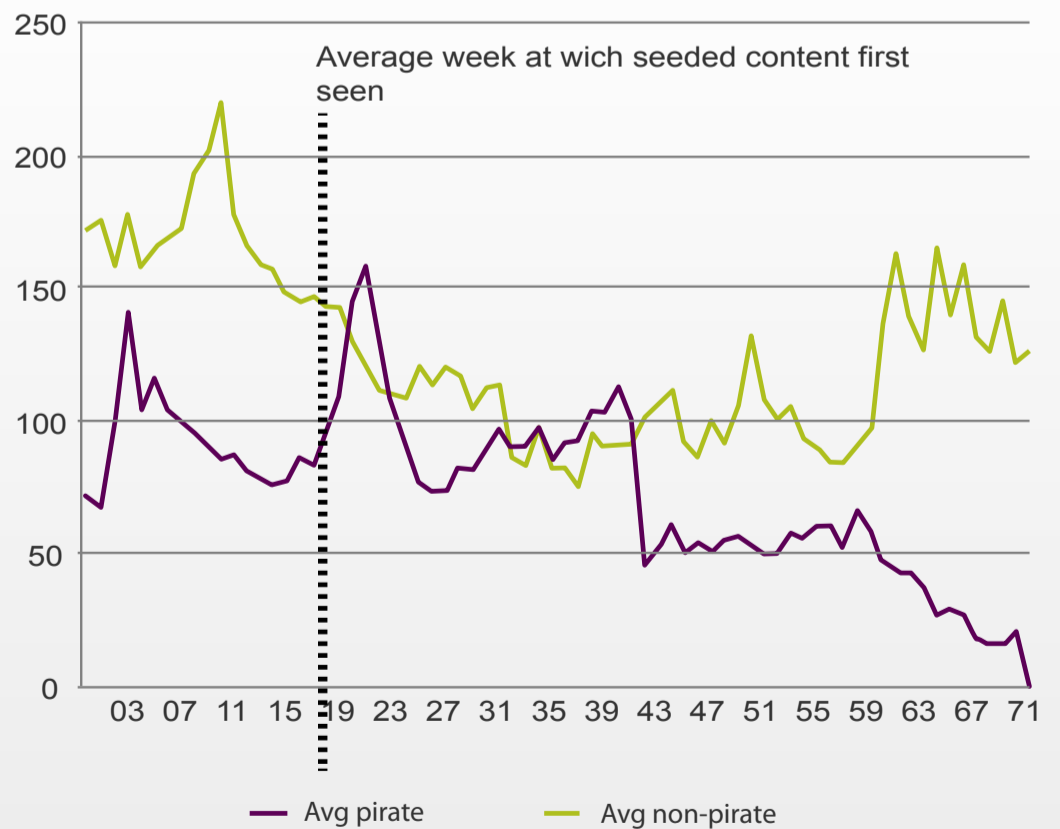
Illegal eBook downloading spans all age groups



Source: www.dearauthor.com

Average sales decline quickly after a pirated book first appears on torrent sites

Average sales (weeks after publication date)



Source: Magellan Media Consulting Partners

Take control of your eDestiny

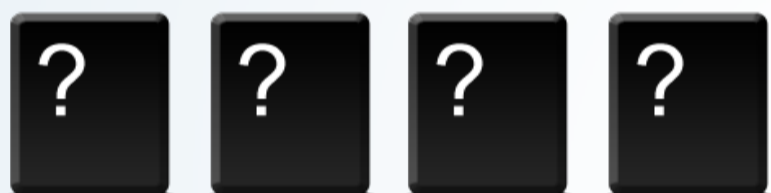
Are you in control of your content...
or is someone else?

As a publisher of paid-for digital books, magazines, technical or professional publications, you may not realize you have a piracy problem, or you may not understand how piracy is impacting your business. Your digital business is no doubt growing, but is that growth being hampered by piracy? Are your titles being illegally uploaded to torrent sites? Are they being downloaded for free? Are your long-term monetization strategies at risk?

T A K E CTRL

Find out – before it's too late

Content Discovery and Reporting is the first phase of our program, and is your first step to taking back control of your content. This service is available **risk-free and at no charge** to show you how piracy is affecting your business today. We will work with you to identify which titles you would like us to track. Then, using state-of-the-art Internet search technology, we will uncover any instances of real-world piracy affecting your titles, and report these back you. From that point, you can judge for yourself how significant your exposure is, and decide if you want to take the next step to reduce your business risk. Contact Irdeto to discuss a Content Discovery trial. You'll be on your way to understanding if and how piracy affects your content, and more importantly, what steps you can take to reduce its impact on your business.



The answer may surprise you

To understand if, and how, piracy affects YOUR BUSINESS, it's vital that you be able to identify and measure piracy levels for YOUR TITLES, specifically. Only then can you take steps to understand and correct the problem.

Irdeto's new Content Identification and Tracking Service can help determine where and when your content is being pirated. Armed with this information, you can then take steps to respond to piracy threats through technical measures such as content watermarking and improved eReader security, as well as legal measures such as takedown notices to unauthorized sites hosting your content. Irdeto offers everything you need to identify, measure and counter the damaging effects of content piracy. Our program is comprehensive, and covers key steps to discover, track and combat the piracy threat to your business.

Combating ePubs Piracy with Dynamic Security

How does piracy of digital books and magazines happen?

Piracy of digital publications happens in much the same way as piracy of video content. Just as Digital Rights Management (DRM) technology is used to control the use high-value video content, many publishers protect their eBook and eZine content with DRM technology which typically uses some type of encryption that locks a document to a user's identity, and controls what the user can do with the content. Publishers choose DRM setting to allow, for instance, users to download a piece of content 5 times, or view the content on a limited number of their personal devices (PC, tablet, smartphome), or copy and paste a limited number of passages per month, etc.

The most common DRM ecosystems in the publishing industry are proprietary ones from Amazon (for the Kindle) and Apple (FairPlay for the iBooks store) as well as a third-party system from Adobe. Hackers try to defeat these and other DRM systems in order to disable restrictions on the use of the content. They typically do this by obtaining a legitimate copy of the content, downloading it to a PC or other reader device that is hosting the reader application, and then applying various software tools and techniques to discover the encryption keys or to change the behaviour of the DRM software to bypass its restrictions. Over the course time, all of the major DRMs have been cracked, and procedures to strip the DRM from the content have been widely distributed on the Internet. Users intent on stealing content simply download and install a file that automatically strips a particular type of DRM, and then download content files from torrent sites that host popular books and magazines that have been illegally uploaded for distribution.

Another less obvious, but equally damaging, source of piracy is from within the ePublishing distribution chain itself. In the video industry, instances of movies reviewers, critics and others with early access to content leaking unreleased films onto torrent sites are well documented. The potential for this same type of "insider piracy" exists in the publishing industry, and can be as harmful.

Breaking the piracy cycle with Dynamic Security

The key to reducing piracy is to make it so difficult to hack the DRM that it's no longer worth the hacker's effort. An effective way to do this is to implement Dynamic Security: a mechanism that changes or upgrades the security protecting the reader application in the field on a regular (proactive) or as-needed (reactive) basis. This dynamic security model has been pioneered by Irdeto, and is the essence of ActiveCloak™ for ePublications.

The essential elements of dynamic security are:

- Tamper resistant technology – good tamper resistance is a starting point for dynamic security to extend the period of initial protection
- Renewability – the capability to renew security on devices in the field rapidly in response to a security breach or an attempted breach
- Diversity – the capability to prevent or mitigate the damage that may result from an attack. Diversity may be applied at the digital asset level (e.g. per book or magazine) or at the level of a reader application
- Monitoring – ongoing vigilance against attacks that may be under development or which have occurred
- Automation – the ability to operationalize all of the above for a large content ecosystem such as the digital publishing industry

ActiveCloakforePublications is Irdeto's implementation of Dynamic Security for the digital publishing industry, designed to protect eBook and eZine content from unauthorized distribution and use. ActiveCloak allows publishers and distributors to more fully monetize digital assets by extending their economic life, and ensures that the ecosystem remains secure over time compared to traditional static security where the security is deployed as a one-time-only implementation with the hope that it is not broken over the life of the service or product.

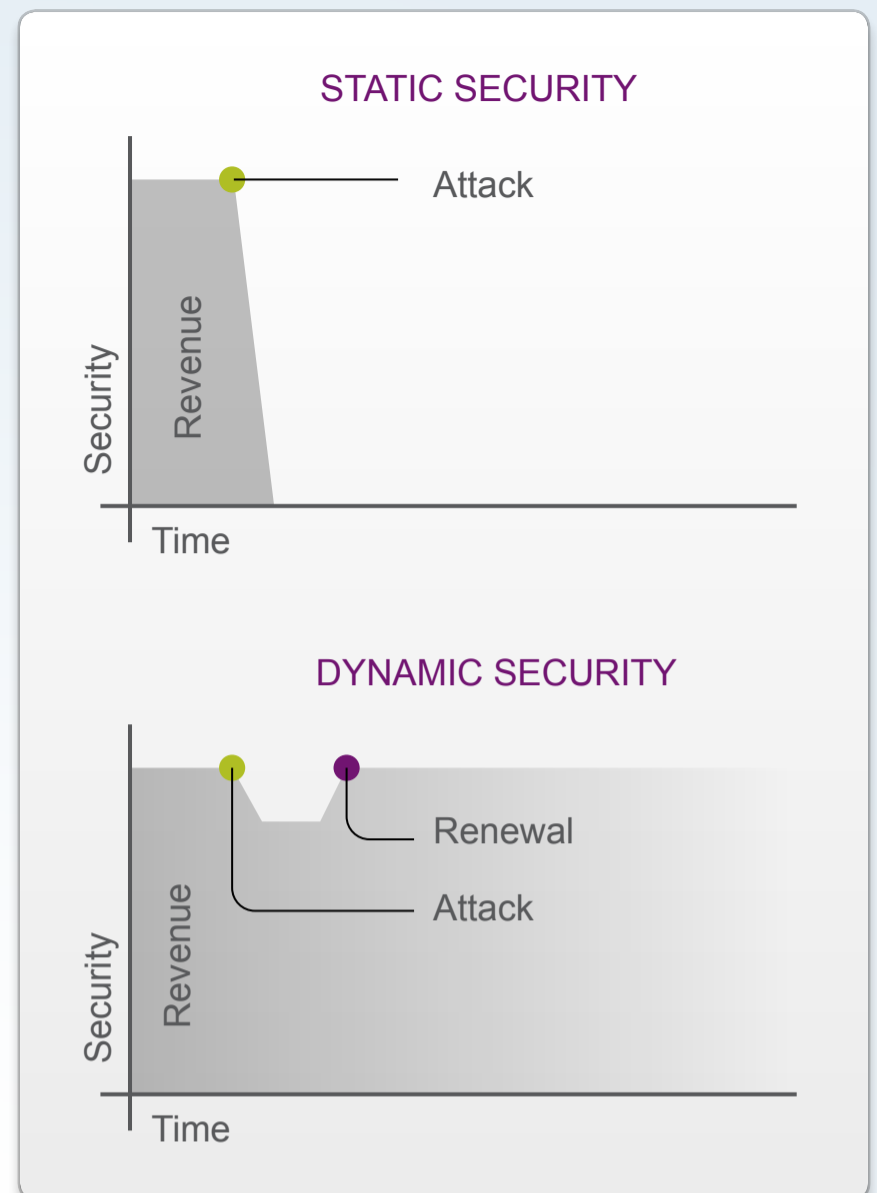
ActiveCloak for ePublications offers features and benefits on the following fronts:

- Provides the copyright owners or distributors of digital content with end-to-end security control above and beyond what may be provided by a DRM, including being able to revoke devices and content without involving the DRM licensing authority.
- Software diversity limits the scope of an attack to a subset of the deployed reader applications, and makes it necessary for attackers to reinvest resources to break diverse instances of the applications.
- Security updates can be applied proactively or in response to an attack
- Automated mechanisms monitor the health and integrity of applications for evidence of reverse engineering or tampering.
- Includes forensic marking such that sources of piracy can be identified.

When ActiveCloak dynamic security model is used, the impact of a security breach is mitigated due to the following reasons.

- Diverse instances of the deployed reader application mean that the hack of a single reader does not affect all others deployed version
- Recovery from a breach can be quickly achieved through ongoing monitoring and being prepared to respond before significant revenue impacts occur
- Countermeasures can be rapidly developed and deployed to renew protection, disrupting potential attacks

Combating piracy is a high-stakes cat-and-mouse game, and leaders in the publishing industry are turning to Dynamic Security in order to stack the odds in their favour and avoid the fate that befell the music industry. ActiveCloak for ePublications is an effective tool to win the piracy battle.



Potential revenue loss due to piracy is greatly reduced with security diversity and renewability

Trusted to protect Hollywood video content...

ActiveCloak™ for Media



Now protecting your ePublication content...

ActiveCloak™ for ePublications

ActiveCloak™ for ePublications

comcast.



SONY

Irdeto is well known and highly respected in the TV and video industry thanks to more than 40 years of experience protecting the world's broadcast pay TV operators with our conditional access security technology. In recent years, we turned our attention to consumer devices such as tablets, PCs and smartphones, developing and deploying our pioneering security technology on more than 2 billion consumer devices and applications for some of the world's most recognized brands.

Today, as consumers embrace tablets and eReaders to enjoy their favorite books and magazines, Irdeto is once again at the forefront of content security with ActiveCloak for ePublications. Digital piracy is on the rise, and popular platforms such as the iPad, Android tablets and proprietary readers are prime targets for eBook and eZine content theft. ActiveCloak for ePublications reduces the piracy threat by securing your content on any device, allowing you to fully monetize your content,

maximize your digital publishing investment and protect your brand. ActiveCloak technology is field tested and trusted by the world's leading content and consumer brands. Contact us to learn how we can help secure your business.

Pioneering security. Securing pioneers.