



irdeto

Protect. Renew. Empower.

harmonic®

Securing VOD Content in a High-Stakes Digital World:

How Irdeto and Harmonic Collaborate to Combat Piracy and Protect Revenue

EXECUTIVE SUMMARY

In the age of on-demand streaming, Video-On-Demand (VOD) content is a critical revenue engine and brand differentiator for media companies, broadcasters, and OTT providers. Consumers crave the flexibility to watch what they want, when they want, on any device—a reality that has transformed content distribution models. Yet, this unprecedented accessibility also exposes premium content to rampant piracy. Today's pirates are well-organized, globally connected, and technologically savvy, posing a direct threat to business models that rely on exclusive premium VOD assets.

For most VOD providers, 70% of earnings are generated within the first month of release, making this early window critical for profitability. However, this period is also the most vulnerable to piracy, with studies showing up to 50% of potential revenue lost in the first week alone due to unauthorized distribution. This widespread piracy impacts the business sustainability, erodes brand credibility, and strains relationships with content rights holders who demand robust protection for their intellectual property.

To combat these challenges, Irdeto and Harmonic have joined forces to deliver a comprehensive, end-to-end solution that secures VOD content throughout its lifecycle. Irdeto's TraceMark™ watermarking embeds unique, session-based forensic watermarks into every stream, enabling rapid identification of piracy sources. Irdeto Anti-Piracy Services provide 24/7 monitoring, detecting and disrupting pirate operations in real time. Additionally, Irdeto Control (DRM) ensures only authorized users access premium content, while its Cybersecurity solutions protect infrastructure and credentials from infiltration. These tools are complemented by Harmonic's VOS® and XOS platforms, which provide scalable, cloud-native media processing, enabling secure transcoding, packaging, and distribution.

Together, these solutions achieve remarkable effectiveness, with 85-90% success rates in identifying and disrupting piracy, significantly reducing revenue leakage. By targeting vulnerabilities early, the Irdeto-Harmonic partnership enables organizations to maximize returns during high-demand periods, protect their brand reputation, and maintain trust with rights holders. For example, during the first week of release, robust security measures can save millions in lost subscriptions, rentals, or pay-per-view fees, while ensuring that content remains exclusive to paying customers.

Beyond immediate financial protection, this partnership positions organizations for long-term success. By integrating Irdeto's advanced anti-piracy measures with Harmonic's secure and scalable workflows, companies can differentiate their platforms in an increasingly competitive VOD landscape. The result is a fortified ecosystem that not only safeguards revenue but also fosters growth, enabling organizations to confidently invest in premium content, expand their offerings, and deliver exceptional user experiences.

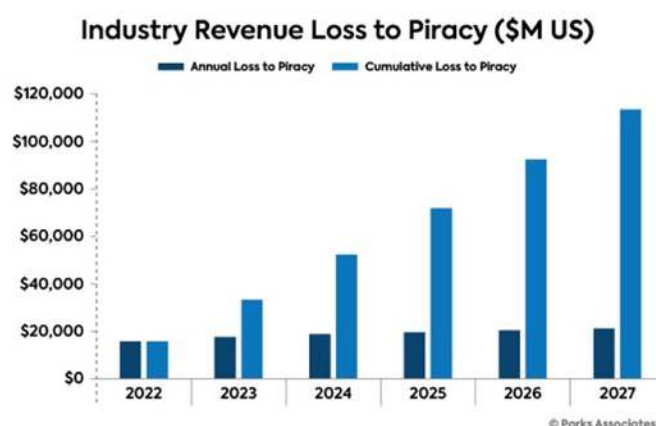
UNDERSTANDING THE BUSINESS CHALLENGES OF VOD PIRACY

In the VOD landscape, content is king. Organizations invest significant capital in acquiring and producing premium movies, exclusive series, documentaries, and sports programming. The expectation is clear: by offering unique, high-quality titles, viewers will pay for subscriptions, rentals, or pay-per-view access, driving revenue and solidifying brand value. However, piracy undermines these fundamental assumptions.

KEY BUSINESS CHALLENGES:

1. Revenue Loss and Diminished ROI:

Every time a piece of premium content leaks online, legitimate monetization suffers. Instead of subscribing or renting, some viewers turn to free, illicit sources—cannibalizing potential earnings and diminishing the return on expensive content rights.



An industry report by Parks Associates titled Streaming Piracy Market & Ecosystem Strategies (2023), shared the ever-growing online video piracy, streaming services could face a loss of \$113bn due to piracy by end of 2027. The graph from the report below shows the upward trend of industry revenue loss due to piracy.

2. Brand Erosion and Competitive Disadvantage:

Illicit copies often circulate on substandard platforms, delivering poor viewing experiences. Unfortunately, consumers may still associate these negative encounters with the legitimate provider. Over time, the brand's premium positioning erodes, and the platform loses credibility. Moreover, pirates who undercut prices (or offer content for free) force a downward pressure on legitimate pricing and subscription tiers.

3. Strained Relationships with Rights Holders:

Exclusive content deals hinge on trust. Rights holders, from Hollywood studios to independent filmmakers, expect their licensing partners to protect their intellectual property. Failure to contain piracy can lead to tense renegotiations, lost future deals, and more stringent licensing terms.

4. Regulatory and Legal Exposure:

Increasing scrutiny from regulators and industry associations puts the onus on content providers to demonstrate robust anti-piracy measures. Non-compliance could invite fines, litigation, and negative press—all harming investor confidence and strategic growth.

TWO ILLUSTRATIVE EXAMPLES OF CONTENT LEAKAGE

EXAMPLE 1: THE EARLY-RELEASE BLOCKBUSTER FILM

A major streaming platform spends heavily to secure a blockbuster film's early-release window, granting subscribers access on the same day as the theatrical premiere. Anticipation and marketing spend drive traffic, and the platform expects a surge in pay-per-view revenue, new subscriber sign-ups, and positive press.

Yet, within minutes after launch, a near-perfect copy appears on pirate streaming sites. Global fans who might have paid for the exclusive access now watch it for free elsewhere. Social media buzz spreads the pirate links, leading to significant revenue loss. Worse, the film's production studio, furious about the leak, questions the platform's security credentials. Future deals may no longer favor the streaming service, damaging its competitive position.



EXAMPLE 2: THE CRITICALLY ACCLAIMED DRAMA SERIES LEAK

Consider a niche OTT provider known for its critically acclaimed drama series. Each new episode release is a valuable event, luring subscribers and boosting ad revenues for AVOD tiers. Midway through a season, high-quality illicit copies appear on rogue IPTV services. Fans lured by cheap or free access bypass the official platform. Churn increases as paying subscribers question the value of their subscriptions. Advertisers, seeing reduced legitimate viewership, demand renegotiated rates. The brand's carefully cultivated prestige suffers an immediate blow.



TRANSLATING BUSINESS CHALLENGES INTO TECHNICAL REQUIREMENTS

Piracy is both a business and a technical problem. To neutralize threats effectively, organizations must implement robust technical controls that address the underlying vulnerabilities pirates exploit.

KEY TECHNICAL NEEDS:

1. Session-Based Watermarking:

Embedding a unique, imperceptible watermark in each viewing session (using technologies like Irdeto Tracemark) is essential. When leaked content surfaces, the watermark enables quick source identification. This deters insiders and subscribers from sharing content illicitly, as enforcement actions can be swift and targeted.

2. Strong DRM and Rights Enforcement:

Robust Digital Rights Management (DRM) ensures that only authorized viewers with valid entitlements can access the content. Multi-DRM support, such as with Irdeto Control, enables compatibility across a wide range of devices while maintaining strict security.

3. Real-Time Anti-Piracy Detection and Automated Takedowns:

Advanced anti-piracy solutions must continuously monitor known pirate ecosystems. As soon as unauthorized distribution is detected, the system should quickly initiate takedown measures—revoking keys, issuing cease-and-desist notices, and collaborating with hosts/CDNs to remove infringing streams.

4. Cybersecurity and Credential Protection:

Pirates may infiltrate distribution networks, steal credentials, or exploit software vulnerabilities. A holistic cybersecurity framework that includes threat detection, intrusion prevention, secure authentication, and robust encryption is critical for safeguarding content from the inside out.

5. Cloud-Native Scalability and Integration:

With global audiences and unpredictable demand spikes, solutions must scale seamlessly. Cloud-native approaches, open APIs, and modular architectures ensure that anti-piracy measures integrate fluidly into existing workflows—whether on-prem, hybrid, or fully cloud-based.

6. Managed Services and Expert Support:

A 24/7 managed service capability streamlines operations, ensuring constant vigilance, immediate response to incidents, and ongoing refinement of security strategies. This reduces the burden on internal teams, letting them focus on strategic growth rather than firefighting piracy incidents.

INTRODUCING IRDETO AND HARMONIC: A STRATEGIC ALLIANCE

Tackling piracy effectively requires a combination of deep security expertise, powerful video processing capabilities, and seamless workflow integration. This is precisely what Irdeto and Harmonic bring to the table.

IRDETO: DECADES OF DIGITAL SECURITY LEADERSHIP

Irdeto is renowned for its leadership in digital platform security and content protection. Trusted by leading media companies and content owners worldwide, Irdeto's portfolio addresses the entire security continuum—from content production to consumer playback.

- **Irdeto TraceMark (Watermarking):**

Tracemark provides imperceptible, session-based watermarking. Each stream carries a unique, trackable watermark, allowing quick identification of sources if illegal distribution occurs. This forensic capability acts as a powerful deterrent and a swift enforcement tool.

- **Irdeto Anti-Piracy Services:**

Irdeto's dedicated anti-piracy teams and technologies proactively detect, monitor, and disrupt pirate operations. With real-time scanning of known and emerging piracy channels, dynamic fingerprinting, and automated takedowns, Irdeto minimizes the revenue impact of leaks.

- **Irdeto Control (DRM):**

A robust, multi-DRM solution that ensures only authorized users can access content. Irdeto Control works across multiple platforms—smart TVs, mobile devices, gaming consoles—without sacrificing security or user experience.

- **Irdeto Cybersecurity:**

Beyond content protection, Irdeto secures networks, applications, and user data. This reduces vulnerabilities that pirates can exploit, ensuring credentials and keys remain safe from theft or tampering.

- **Irdeto Managed Services:**

By outsourcing the complexity of continuous monitoring, takedown enforcement, and system improvements to Irdeto, companies benefit from specialized expertise, reduced operational overhead, and predictable costs.

HARMONIC: PIONEERS IN MEDIA PROCESSING AND DELIVERY

Harmonic provides cloud-native platforms that streamline the entire media processing chain for VOD workflows.

- **Harmonic VOS®:**

A fully cloud-based platform that handles content ingest, transcoding, packaging, and origination at scale. VOS offers flexibility and elasticity, adapting to peak demands without compromising quality or availability.

- **Harmonic XOS:**

Designed for on-premises or hybrid environments, XOS brings advanced video processing capabilities with the same reliability and efficiency as VOS. Customers can choose the deployment model that best fits their operational and compliance requirements.

- **Open APIs and Integration-Friendly Architecture:**

Both VOS and XOS are built to integrate seamlessly with third-party security solutions. By using open APIs and modular architectures, Harmonic enables Irdeto's technologies to embed naturally into the workflow, ensuring that content is protected from the first encoding step to the final delivery.

END-TO-END INTEGRATION: HOW IRDETO AND HARMONIC WORK TOGETHER

The synergy between Irdeto and Harmonic solutions ensures that content protection is not an afterthought, but a foundational pillar built into the entire VOD pipeline.

Step 1: Secure Ingest and Processing

As content is ingested into Harmonic VOS or XOS, it undergoes transcoding and packaging. At this stage, Irdeto Control applies DRM policies tailored to the content's distribution rules—whether it's subscription-based, pay-per-view, or free-with-ads. Meanwhile, Irdeto TraceMark watermarks the content session by session, ensuring each user's stream is uniquely identifiable.

Step 2: Encryption and Rights Management

With encryption and DRM in place, content is now locked down. Only authenticated and authorized viewers can access it. Since VOS and XOS handle complex formatting and distribution tasks at scale, they ensure that the application of DRM and watermarking does not impact performance or user experience. The result is smooth, reliable, and secure playback on any device.

Step 3: Continuous Monitoring and Threat Detection

Once distributed, the content flows to viewers' screens. Behind the scenes, Irdeto Anti-Piracy Services operate 24/7, scanning pirate web and IPTV services, forums, social media and torrent networks. If stolen content appears, Irdeto's tools identify the watermark associated with the leak, pinpoint the subscriber or source node, and initiate enforcement.

Step 4: Enforcement and Cybersecurity Countermeasures

Armed with the watermarking evidence, Irdeto can, notify CDNs or hosting providers to remove infringing links, and coordinate legal actions or DMCA notices. If piracy attempts originate from compromised credentials or a hacked delivery node, Irdeto's cybersecurity measures neutralize the threat. Harmonic's flexible platforms allow rapid key rotations and reissuances, maintaining service continuity for legitimate users while cutting off pirates.

Step 5: Managed Services and Continuous Improvement

Irdeto Managed Services experts constantly refine piracy detection algorithms, update threat intelligence, and stay ahead of evolving pirate tactics. Insights gleaned from watermarking traces, enforcement outcomes, and piracy trends feed back into strategic decisions. As a result, the anti-piracy ecosystem becomes more resilient over time. This ongoing process frees internal teams to focus on core business objectives, like growing subscriber bases, enhancing user interfaces, and forging new content partnerships.



REAL-WORLD BENEFITS: PROTECTING REVENUE AND BRAND INTEGRITY

By embracing the integrated Irdeto-Harmonic solution, senior management can expect a host of tangible, strategic advantages:

1. Direct Revenue Protection:

Stopping pirates at the source ensures that potential customers remain on the official platform. This stabilizes and even grows ARPU (Average Revenue Per User) by keeping paying viewers engaged and deterring them from migrating to free, illicit options.

2. Brand and Market Differentiation:

A secure platform that consistently delivers premium, piracy-free VOD content cements the brand's reputation as a trustworthy provider. Viewers come to rely on the official service for quality, convenience, and integrity—traits that differentiate it from competitors and pirates alike.

3. Stronger Negotiating Positions with Rights Holders:

Demonstrating robust anti-piracy measures and a proven track record of protecting content assures rights holders that their IP is safe. This fosters healthier partnerships, often leading to more favorable licensing terms, earlier release windows, or exclusive distribution deals that set the platform apart.

4. Regulatory Compliance and Reduced Legal Risks:

With proactive anti-piracy, DRM, and cybersecurity measures integrated into daily operations, meeting regulatory requirements becomes simpler. Clear audit trails, automated takedowns, and visible enforcement efforts help avoid legal entanglements and reassure investors, analysts, and other stakeholders.

5. Operational Efficiency and Resource Reallocation:

The combination of Harmonic's cloud-native agility with Irdeto's managed services model reduces complexity. Instead of juggling multiple point solutions, the organization relies on a unified platform supported by expert teams. Internal staff can focus on content curation, marketing, and innovation rather than chasing pirates or patching security holes.

6. Futureproofing Against Emerging Threats:

As technology evolves—8K resolutions, new codecs, immersive formats, new devices—the integrated solution readily adapts. Continuous updates to DRM, watermarking, and anti-piracy intelligence ensure that the platform remains resilient. This forward-looking approach preserves the company's ability to capitalize on future trends without succumbing to emerging piracy methods.

CONCLUSION: BUILDING A SECURE, PROFITABLE FUTURE FOR VOD

In a marketplace defined by consumer choice, premium VOD content should be a reliable revenue engine and a key brand differentiator. Yet, without effective anti-piracy measures, the value proposition weakens, and illicit competitors erode margins, trust, and market share. Irdeto and Harmonic's partnership offers a holistic solution that weaves security into every phase of content delivery—ensuring premium titles remain exclusive, accessible only to paying customers, and shielded from sophisticated pirates.

By leveraging Irdeto Tracemark, Anti-Piracy Services, Irdeto Control (DRM), Irdeto Cybersecurity, and Managed Services, integrated with Harmonic's flexible, scalable VOS and XOS platforms, senior management gains a strategic advantage. They can confidently invest in content, differentiate on quality, and serve global audiences without constantly looking over their shoulders at pirates. The result is a more secure, profitable, and innovation-friendly environment—one where VOD businesses can focus on delighting customers, strengthening relationships with rights holders, and driving sustained success in the digital era.

In essence, the Irdeto-Harmonic alliance empowers organizations to reclaim the narrative on VOD distribution, secure in the knowledge that their valuable assets are protected, and their strategic future is on solid ground.

**Learn more at
www.irdeto.com**

Last modification: 15-01-2025 / 04:45 pm GMT+01:00

© 2025 Irdeto. All Rights Reserved.