The rob report

Challenges of online piracy facing India's film segment and OTT platforms

October 2024

Internet And Mobile Association Of India

Shape the future with confidence

Foreword

Combatting piracy requires a concerted effort from all stakeholders - governments, industry players, and consumers. By combining Strong Enforcement, Effective Regulation, Innovative Technology, and Collaborative Partnerships, we can create a more secure and sustainable creative ecosystem. Remember, it's not just about protecting profits, it's about safeguarding the future of our creative industries and respecting the rights of content creators.

As an industry, we must see piracy as a symptom of a deeper malaise. While its tentacles undeniably squeeze the lifeblood from our creative endeavours, focusing solely on eradication risks missing the opportunity for meaningful change. This report is an attempt to shed a spotlight, spark further dialogue, and possibly call for collective action to navigate these turbulent waters, analysing the state of piracy, its impact, and charting a course towards effective solutions.

The impact is beyond just lost revenue and associated GST collections. Piracy's financial toll is undeniable. Estimates suggest billions lost annually, impacting creators, studios, and distributors. However, the damage extends far beyond lost revenue. Piracy erodes trust, discourages investment in quality content, and stifles the growth of independent artists. It creates an unfair playing field, jeopardizing the very ecosystem that nurtures creativity. Further, as we dig deeper, the risks are far greater and widespread. Piracy risks being exploited as a vehicle for cyber-crimes and financial frauds. There are many facets to the risks posed in the rapidly evolving digital landscape.

Charting a new course will require a multipronged and holistic approach. Standalone efforts will not yield the desired outcomes; and may prove to be too little, too far and too late to move the needle. We need to join forces with government, content creators, distributors, and technology providers to develop unified comprehensive anti-piracy measures.

Let me reiterate, combating piracy is not just about protecting profits; it's about safeguarding the future of our industry. By prioritizing accessibility, transparency, and collaboration, we can build a more sustainable and ethical creative ecosystem. Let's not merely fight the cancer plaguing our industry; let's understand its motivations, chart a new course, and work together towards a piracy-free future. A special thank you to EY, industry stakeholders, and friends for their pivotal role in shaping this insightful report and giving a concrete definition to this issue. Our collective power can turn the tide against piracy and ensure that creativity continues to flourish. This report is a step in that direction.

Rohit Jain
Chairman - Digital Entertainment Committee,
IAMAI

The future imagined by sci-fi films of yore is here–one where a green screen gives way to flights of fantasy and adventures take on intergalactic proportions, characters pop out of screens into living rooms at the click of a button, and magic unfolds on the silver screen. Evolution of technology has widened the scope of entertainment and how! It is an exciting time for the media and entertainment (M&E) sector that is experiencing unprecedented highs in terms of both revenue and reach.

However, tech advancement has also led to an increase in incidences of media piracy, posing a serious threat to the potential of the M&E sector and its significant contributors–OTT and filmed entertainment segments. From camcorder piracy to torrents and now content streaming–media pirates have been making a fortune by selling copyrighted material, while deftly navigating the choppy waters of law enforcement and regulations through tech-forward innovation.

EY and IAMAI have collaborated to provide perspective on the impact of media piracy on OTT and filmed entertainment segments. Through insightful surveys, in-depth research, and detailed analyses, we have attempted to uncover the magnitude of piracy and its financial repercussions on the segments' lucrative prospects. Snippets from revelatory interactions with media pirates offer an insight into the minds of the lawbreakers and can help bring them to order. We have also included an overview of existing laws and ongoing crackdown efforts to present a comprehensive account of the piracy landscape.

The emerging picture is indicative of the dire need for all stakeholders to unite in the fight against piracy. Immediate regulatory overhaul and judicious enforcement action on a global scale will convey a proactive approach toward curbing the menace.

This report provides impetus to the movement against media piracy and continues to serve as a reminder that the evil of piracy can be tamed and eliminated, even if it calls for herculean efforts.

Mukul Shrivastava
Partner - Forensic M&E leader
EY Forensic & Integrity Services

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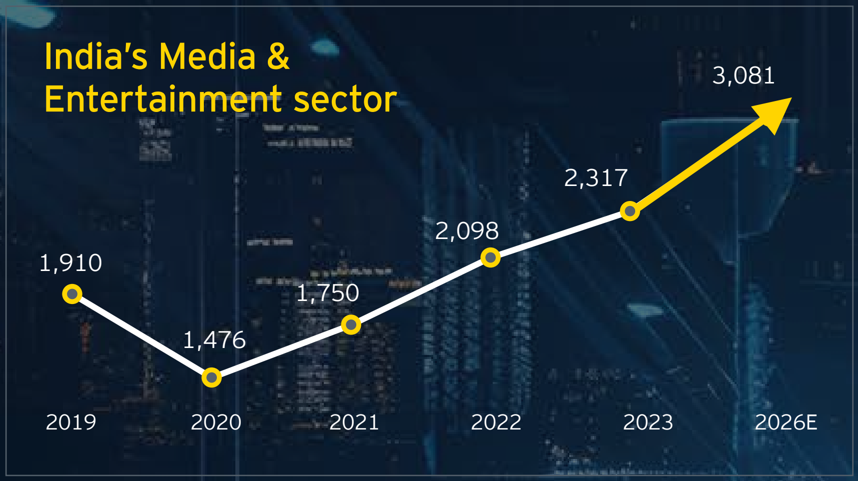
The rob report: at a glance



INR115 billion 2019 » INR120 billion 2023

The Indian box-office grossed record-breaking numbers, surpassing pre-pandemic collections

INR28 billion 2019 — INR73 billion 2023

Digital video subscription revenue registered a 160% rise since the pandemic

All figures are gross of taxes (INR in billion) for calendar year | FICCI EY M&E Sector report 2024

Impact of piracy

In 2023, the size of the piracy economy was INR224 billion (figures gross of tax)

OTT platforms INR87 billion

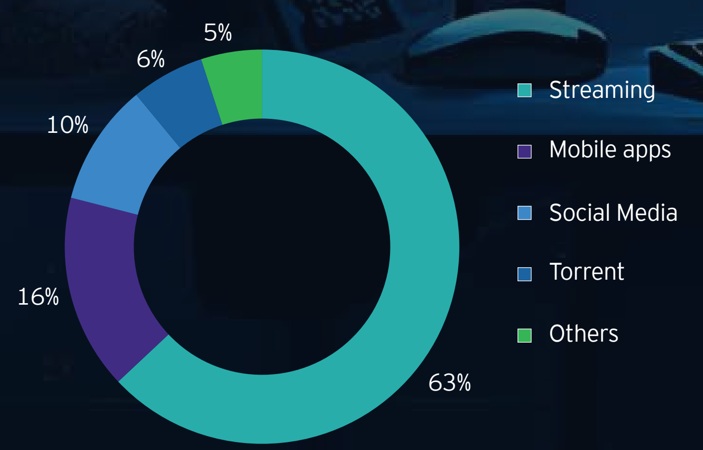
Theaters INR137 billion

Potential estimated loss of GST up to INR43 billion (INR4,313 Crore)

51% media consumers access content from pirated sources

Pirates earn minimum INR100,000 per month through online ads

Piracy sources



When stacked against the segment-wise revenue generated by the M&E sector, the size of the piracy economy ranked fourth

With piracy data inputs from MarkScan

Survey highlights

Supporting the industry ranked lowest when it came to reasons to avoid pirated content

84% of respondents accessing pirated content not willing to pay for movie tickets

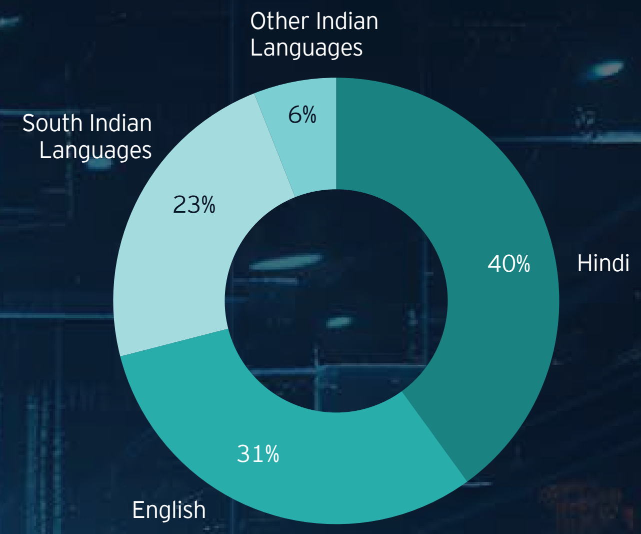
70% of respondents accessing pirated content not willing to shell out for an OTT subscription even if pirated content is not available

62% respondents were optimistic that stricter enforcement would reduce incidences of piracy

57% consumers of pirated content wait for high-quality prints ripped off OTT platforms to watch latest film releases

Source: EY estimates

Language preferences of pirated content consumers



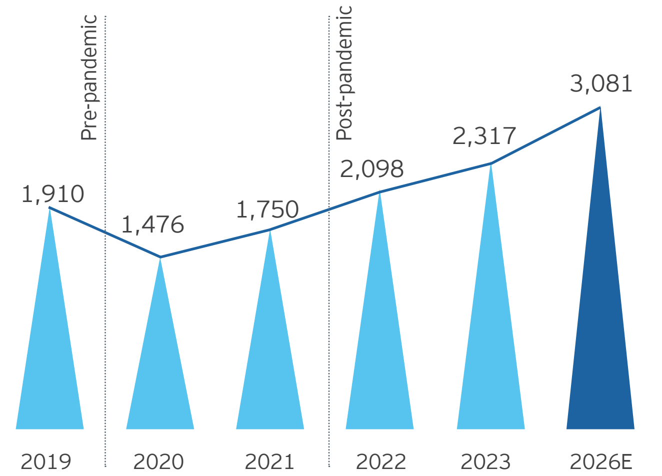
Recommendations to improve the entertainment ecosystem

1. Take a unified stand against piracy
2. Enable adequate policy updates to match evolved piracy landscape
3. Blacklist websites centrally; warn customers
4. Implement stricter enforcement
5. Setting up a Single-window anti-piracy cell
6. Forge international alliances
7. Explore and market ad-based revenue models
8. Innovate around pricing and bundling
9. Consider watermarking for premium OTT content
10. Launch nation-wide awareness programs

02 Who is eating into the M&E pie?

Meteoric rise of the M&E sector

The M&E sector continues to outpace GDP growth



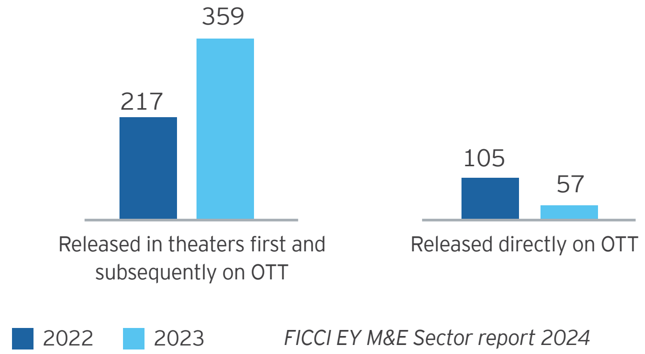
- The Indian media and entertainment sector has displayed great tenacity in the face of grave uncertainty over the last few years
- As one of the fastest-growing sectors in India, it has made significant contributions to the country's economy
- By pioneering digitalization, the M&E sector has set a precedent and established newfound online space as a platform for edgy content

Digital adoption is increasing

- 150% rise in subscription revenue since the pandemic
- Digital video subscription growth slowed down to 7% in 2023, and is expected to reach INR103 billion by 2026
- This rise and fall in the number of subscribers can be partly attributed to shift in mindset where users activate and deactivate subscriptions on a need-basis

Filmed entertainment will reach INR146 billion by 2026

Number of films released on OTT
(excluding dubbed versions)



FICCI EY M&E Sector report 2024 excludes dubbed versions

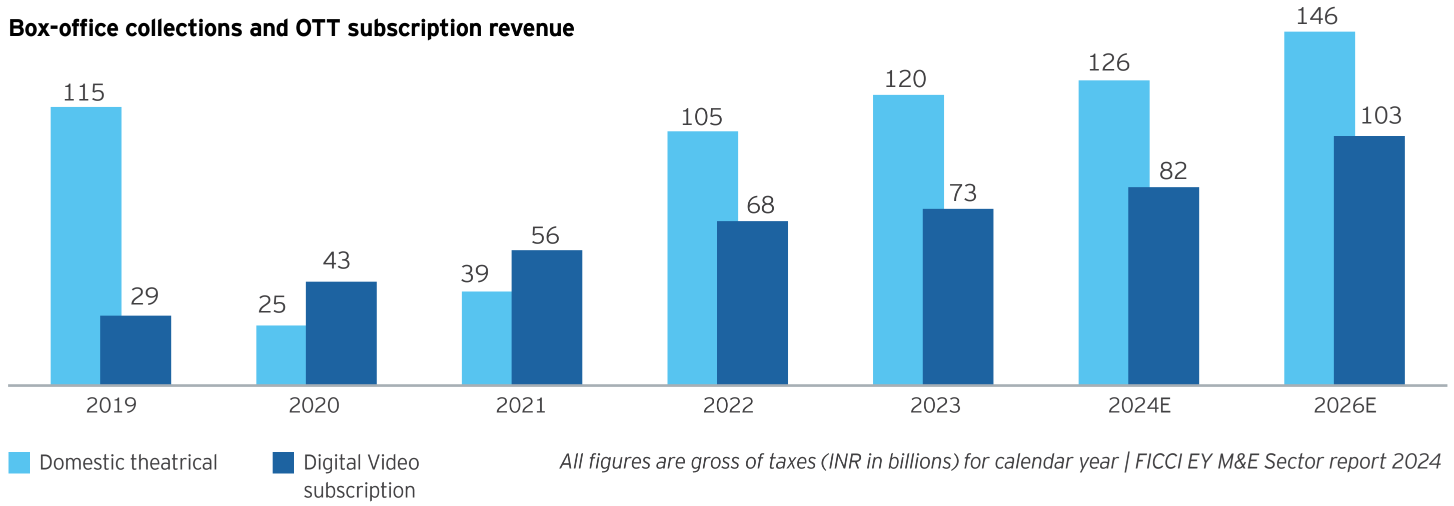
- While it is yet to reach pre-pandemic glory, theater footfall is on the uptick, encouraging big-ticket filmmakers to battle it out at the box-office and get their money's worth instead of playing it safe with an OTT release
- OTT platforms have offered production companies a diverse release strategy, allowing films with more modest budgets to gain viewership without the need to vie with large scale, big productions for attention
- This bifurcation can maximize viewership and enhance commercial prospect of diverse content

The future is theatrical

- With unprecedented gross domestic box office collection, the Indian box-office crossed the INR120 billion[1] mark for the first time, surpassing 2019 collections of INR115 billion
- Hindi cinema also experienced a much-needed respite from dwindling numbers, registering a gross box-office collection of INR53 billion[1]
- The filmed entertainment segment is expected to grow to INR146 billion by 2026

[1]*FICCI EY M&E Sector report 2024*

Box-office collections and OTT subscription revenue



All figures are gross of taxes (INR in billions) for calendar year | FICCI EY M&E Sector report 2024

Source: *FICCI EY M&E Sector report 2024*

The cost of piracy: consequences for India's theaters & OTTs

OTT platforms*
INR87 billion

In 2023, the size of the piracy economy was
INR224 billion
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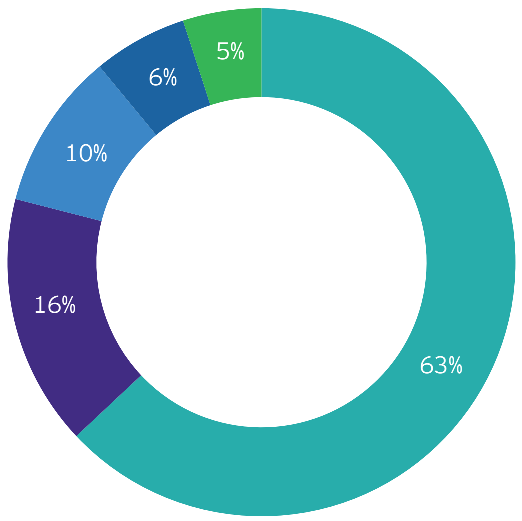
Theaters
INR137 billion

Potential estimated loss of GST up to INR43 billion (INR4,313 Crore)



- Illegal streaming platforms are the preferred source to access pirated versions of both OTT content and recent theatrical releases, followed by unregulated apps
- Mobile apps have overtaken torrents as the preferred source for pirated content. Only **6%** of the total pirated content was accessed through torrents
- **10%** of the total pirated content consumption takes place on social media. Due to the younger demographic present on social media, the content preference leans toward GEC programming that's available on OTT platforms*
- Physical copies are now the least preferred source for pirated content with just **5%** using it for both OTT and theatrical releases

When stacked against the segment-wise revenue generated by the M&E sector, the size of the piracy economy ranked fourth

Ranking	M&E segment	2023 (in billion)
1	Television	696
2	Digital media	654
3	Print	260
4	Size of the piracy economy	224
5	Online gaming	220
6	Filmed entertainment	197
7	Animation and VFX	114
8	Live events	88
9	Out of Home media	42
10	Music	24
11	Radio	23

- In 2023, television contributed a lion's share to the M&E revenue, followed closely by digital media
- Filmed entertainment amassed INR197 billion of the total revenue
- Interestingly, if not to piracy, both OTT and Filmed entertainment segments could have been leading contributors to the M&E revenue

**OTT includes GEC, TV shows and sports which are available online*

With piracy data inputs from MarkScan

51%

media consumers access content from pirated sources

Despite a spate of awareness campaigns and constant pleas from industry influencers to avoid pirated content, a huge chunk of media consumers accessed content through pirated sources, leading to substantial revenue loss

57%

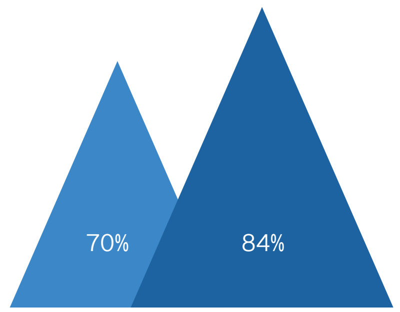
respondents preferred waiting for high-quality prints ripped off from OTT platforms rather than watching glitchy theatrical prints recorded on camcorders

Survey analysis and the emerging picture

Subscription, availability and costs

Multiple subscriptions, unavailability of desired content, and steep subscription fee emerged as prime reasons for watching pirated content

- When it came to reasons why respondents accessed pirated content, the hassle of juggling multiple subscriptions ranked as the biggest temptation to download illegitimate copies
- This was followed by a lack of desired content on authorised platforms and steep subscription fee charged by OTT players
- Around 70% of respondents on Telegram—an instant messaging platform—watch around 3 out of the 10 pirated content file shared on the platform



- Pirated content consumers said that they will not be willing to pay for film tickets or OTT subscription charges even if the content that they preferred watching was not available through pirated means
- This conveys a mindset to watch good content only and for free

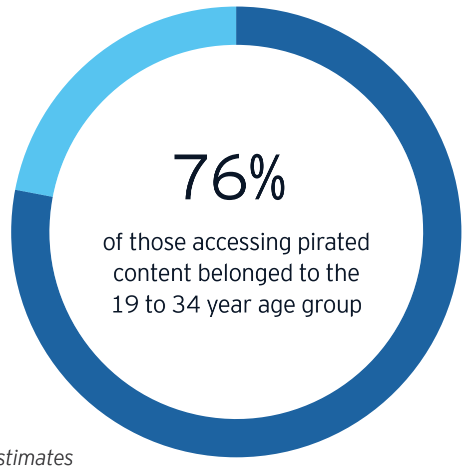
64%

pirated content consumers conceded they would opt for authorized channels, even if interrupted by ads, provided it was available free of charge

Consumers were willing to shift to legal consumption if the cost factor was removed or reduced. This emphasizes the impact of pricing on consumer behavior. Evolving monetization strategies like ad-supported content might be an effective way to combat piracy

Source: 3410 respondents were polled as part of this survey. Respondents belonged to diverse age, economic, and geographic backgrounds.

The age equation



Source: EY estimates

Meanwhile, respondents in over 45 years age group spent most hours per week consuming pirated content mostly for viewing TV shows from GECs

- With the pandemic and the subsequent switch to OTT platforms, many households switched from cable networks to OTT subscriptions, bringing about a shift in watching patterns
- However, this did not change their watching loyalties towards TV program
- Instead of subscribing to TV channels, they accessed pirated versions

Gender bender

Women accessed pirated content mostly to watch original OTT shows

- The women who admitted to watching pirated content, primarily accessed original OTT shows that are exclusive to certain platforms

Men resorted to watching pirated old films

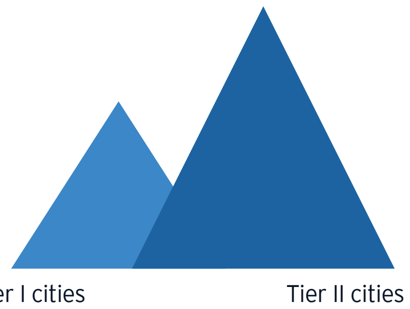
- Most men accessed pirated content to watch old films that were out of theaters and not available on legal platforms
- They also accessed pirated versions of renowned classics

Content preference

Old films and OTT original content most pirated

- A majority (60%) of pirated content consumers spent hours watching illegitimate versions of original content developed for OTT platforms or films that are out of the theatre
- On average, **nine hours** were spent consuming pirated content per week. Around **38%** of the time was spent consuming original OTT content, followed by **22%** hours spent consuming films after theatrical release

Geographical divide



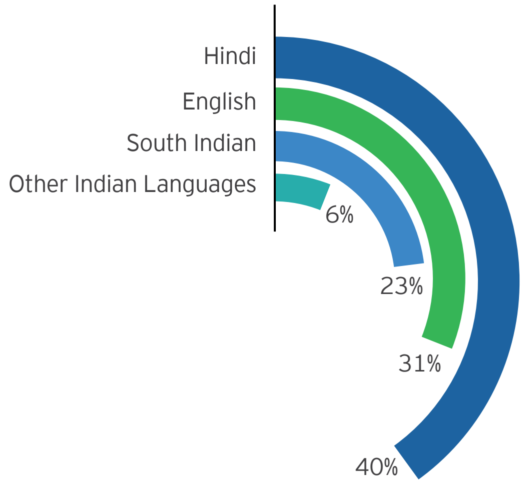
- Limited means of watching legitimate content, easy availability of pirated content, and a lack of awareness on the perils of piracy can be the reasons why Tier II cities consume higher amounts of pirated content than their Tier I counterparts
- The proclivity to consume pirated content can also be attributed to the income disparity between Tier I and Tier II city respondents
- Respondents in Tier II cities have to travel a distance to find a theater. This also results in increased piracy during a film's theatrical window

A majority of respondents from Tier I cities accessed pirated content to watch older films; those from Tier II cities watched illegitimate versions of recent releases

- While the former evidently resort to piracy to access content that's not easily available, the latter seem keen on watching timely content without paying for tickets

> *Major economic powers have strong criminal prosecution systems that prioritize piracy and cyber crime, or civil systems that permit speedy and enforceable results around piracy. In India, it is currently difficult to bring pirate site operators to order because they do not fear legal consequences. Federal and state authorities should create a department or task force to address piracy and propose legal frameworks that will allow for effective enforcement.*
>
> -Industry insider

Language preferences

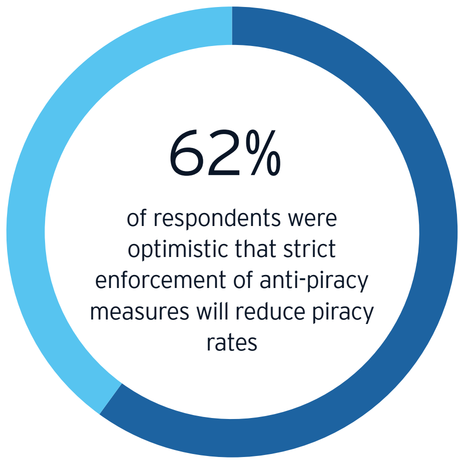


- When it came to illegitimate downloads, content in the widely-spoken language i.e., Hindi, garnered the largest viewership
- English content is much sought-after but not easily available, which reflects in the high demand for pirated versions

Awareness

Ethical consideration, legal consequences, and fear of malware emerged as top reasons for avoiding piracy

- Those who watched pirated content were aware that they were downloading illicit material.
- Those who steered clear of pirated content, chose to do so due to ethical reasons
- Some were afraid of legal consequences for downloading illegal content. Others were worried about getting malware from accessing pirated content



> *The OTT industry has been pumping millions to create originals and titles with exclusive content. With content piracy encroaching into the direct earnings from the releases, the industry continues to bleed revenue and subscribers. While putting a dent on the OTT ecosystem, many pirated websites and peer-to-peer networks that offer pirated material also transmit malware or viruses, which can harm the user's device or steal Personally Identifiable Information (PII). This malware spreads in parallel within a home or corporate network, potentially affecting critical business operations, and can be used as the launchpad for identity theft and identity fraud. Consumers are also at legal risk from signing up to proxy servers which may have been used to participate in DDoS and other attacks in the past. Piracy is a complex web that engulfs every variable involved in the equation.*
>
> -Abhishek Joshi, Industry expert

Source: 3410 respondents were polled as part of this survey. Respondents belonged to diverse age, economic, and geographic backgrounds.

03 Peek into the pirates' lair

Decoding the piracy conundrum

- A simple demand-and-supply formula, piracy plugs the gap between the audience and access through illegitimate means
- The consumer gets access to content for free or at lower price, the pirate makes money without the hassle of spending on licensing, commissioning, or even taxes. Meanwhile, legal exhibitors/platforms lose out on a potential purchase

Piracy made easy

Streaming and winning

- Pirates are now hosting illegitimate content on websites to enhance its accessibility and expand reach
- With high-speed internet connectivity and lucrative data plans that are conducive to streaming needs, pirated content consumers can directly stream content without the hassle of downloading it
- Websites provide a relatively 'permanent' platform to pirates, enabling them to build a user base of consumers that keep returning to access the latest content
- Mirroring websites is easier, enabling pirates to mitigate losses when a particular link is taken down as the parallel site continues to keep generating revenue

The anatomy of a website hosting pirated content

- Attractive homepage with high-resolution images highlighting latest titles
- Low quality interior pages
- Ad-heavy user interface and numerous pop-up ads by unregulated businesses
- Ad-free content
- Constant redirection
- Multiple domain extensions

Social media

- Social media platforms are used for free and paid promotions of the pirated links
- Once social media profile earns recognition for sharing pirated or free content, they amass huge footfall, likes, comments, and shares
- Pirates also generate income from displaying ads on their social media accounts
- Popular social media pages are leveraged to redirect followers to pirated websites

How an instant messaging app became the pirates' playground

- Telegram is a widely preferred platform for consumers of pirated content and pirates alike since it allows transfer of files up to 2GB
- The threat of malware is one of the topmost deterrents to downloading pirated content. However, almost 75% of pirated content on Telegram has in-app access which assures users of their safety
- Bots within Telegram make finding pirated content simpler and faster
- Removal of content in one place is not so impactful because another copy can be found almost immediately
- Pirates create groups where they share the media through a link, which is usually directed to a cloud or a torrent portal or application. This allows users to watch and download the desired content either for free or minimal monetary exchange
- Most links come with a login screen which requires the user to watch the entire advertisement without skipping
- Media pirates also get paid through cloud platforms if the content has substantial followers and downloads
- The pay-outs vary according to the follower list, footfall, count of downloads, and content popularity, which turns it into a lucrative platform for marketing, garnering ad-based revenue
- Removal of pirated content from Telegram takes a long time

Torrent or to stream

- Torrents have been one of the key medium for accessing pirated content as they are cost-effective and difficult to trace
- However, mobile apps and streaming websites have made it easier to watch pirated content and torrents are losing their appeal

Eye on IPTV

- IPTV enables users to watch TV program on demand instead of relying on the programming schedule
- Unlike cable TV that receives signals from satellites, IPTVs employ the internet to display content
- Authorized IPTV service providers work on a subscription model and pay copyright holders as per the popularity of their content
- IPTV piracy is the unauthorized streaming of content delivered through internet protocol television (IPTV) services, typically accessed via websites or set-top boxes.
- IPTV piracy often involves using low-cost, pre-configured devices like Android set-top boxes that offer access to thousands of channels illegally

What encourages pirates?

Profit-driven piracy

- Individuals involved in piracy, often motivated by financial gain or the thrill of rising to the 'challenge' of breaching high-security websites by leveraging their tech skills, can perceive their actions as benign
- Regardless of their motivations or technical expertise, piracy continues to violate copyright laws, making it difficult to position them as 'ethical pirates'

Malicious intentions

- Piracy with sinister motives, often referred to as malicious piracy, presents significant risks
- Perpetrators use appealing content as a trap to ply harmful malware, ransomware, or spyware into the devices of unsuspecting downloaders
- The consequence is breached personal data which is then leveraged for financial gain. This illegally obtained data often fuels additional illicit activities, including money laundering and terrorism, creating a perilous cycle of criminal activity

What are media pirates looking for?

- Earning monetary benefits at the expense of people's innocence and ignorance
- Generating advertising revenue
  Pirates rake in a minimum of INR100,000 per month from online advertisements displayed before/besides pirated content
- Planning cyberattacks
  Most of the data used in calling scams are generated through posting pirated content
- Gaining prominence in social communities
- Leveraging influence to boost social media follower statistics

Future of pirated content

Tech-forward

In the digital age, content piracy is all about technological acumen and pirates are constantly devising new methods of outsmarting current coders to crack into the secure systems and plunder content

Diabolical motives

As time progresses, digital piracy is evolving from a means to earn a few quick bucks into a structured crime that is used to extort money, fund illicit activities, and provide a platform to advertise illegal businesses

Platform agnostic

With the advent of social media and instant messaging service apps and platforms, pirated content is everywhere, making it very difficult to track and remove. Piracy is now easier to access and difficult to track

Pirates of the new millennium

The pirate's MO

Disclaimer: *Based on excerpts from conversations with media pirates, conducted as part of the research. EY does not endorse the claims made under this section*

Innovation is the name of the game

- Pirates leverage pre-release private screenings of films to gain early access to the content, make copies, and leak it to strike gold
- With OTT content taking precedence over the theatrical experience, pirates have shifted their focus to digital pastures
- High subscription rates and keeping track of multiple subscriptions can pose a challenge to the theater-going or cable TV-watching demographic. Pirates leverage this shortcoming by subscribing to premium platforms only to create low quality copies using screen recording apps. They publish this content on their channels with ads to generate revenue
- Media pirates also stream content now. Online streamers allow viewers free access to their live stream and generate revenue through advertisements, increase in followers, viewer count, likes, comments
- Pay-outs are done by streaming platforms such as Instagram, YouTube, Livestream, Xstream, Facebook, etc.

How media pirates operated in the pre-digital era

- One of the popular methods was when pirates would find loopholes to use devices in theaters to record content
- Cassettes, VHS tapes, CDs and DVDs can be pirated through disc-burning software. This way, pirates purchase one disc and create copies as per demand
- Certain applications and hardware can be used to create pirated copies of even secured discs, DVDs, pen-drives, etc.
- Crack versions are typically produced by unethical techies who manipulate codes to bypass the security of media files

Evolution of content piracy

Analog Era (pre-internet)

1970s

Content recorded in theaters using **handheld cameras**, resulted in poor quality output with background noise

1980s

As home video recording became more widespread, films were copied and distributed on **VHS tapes** that were accessed through VCRs and unregulated cable networks

Late 1990s

Digital piracy was on the rise. **Copy Screening DVD** issued by film studios for promotions were pirated. Films were recorded in theaters using **camcorders**, machines, and film files were shared through **peer-to-peer (P2P) networks**

Late 2000s

Since **Ripping** DVDs using camcorders yielded poor quality sound, pirates began synchronizing cam rips with a second recording using **professional mics** directly from the **theater's sound system** or from FM radio transmissions. **BitTorrent protocol** revolutionized distribution of large files, making it easier to share high-quality prints

Digital Era (post-internet)

2010s

By mid 2010s, with the arrival of legitimate streaming services and ease of creating illegal streaming websites with **internet protocol television (IPTV)**, streaming piracy overtook P2P

2020s

Pandemic-fueled spike in digital piracy. **Streaming content** is recorded and uploaded on quick messaging services, apps, online portals

Subscription fatigue creeps in; audience prefers one-stop access to content from across platforms, encouraging pirated content

CDN leeching: Pirates use legitimate infrastructure to steal content and deliver it to 'subscribers'

Social media piracy evolves as a result of the ease of sharing video content and relaxed regulations

04 Sector speak: Catch the culprits

M&E leaders understand risks, but do not have mitigation tools

The M&E sector has undergone tectonic shifts–demand changes, content format innovation, plurality of content distribution, consumption across devices and geographies, new monetization models and the growth of social and internet platforms

A heady mix of internet penetration and uneven income distribution

- Developing countries with enhanced internet reach have higher incidences of piracy vis-à-vis countries that already have high internet penetration rate
- Economic challenges faced in these countries (including India) make piracy more attractive to a larger number of people and the lack of awareness around illegal copying results in widespread consumption without fear of consequences

Abundant monetization opportunities

- Pirate sites run on a mature ad network i.e., they earn through ad revenue, which enables them to provide free content This eats into OTT platforms' business models and hampers the ability to create original content for a customized customer experience

> *Piracy has been a long-standing issue. Alert ushers often catch pirates recording a newly-released film on their handheld devices and take them to the police but the follow-through is difficult and the culprits are let off the hook fairly early. The laws are in place but enforcement needs to be prioritized. To achieve a piracy-free future, businesses should set themselves apart through premierization. Cinemas must work on amping up the experiential quotient to enhance the theater-going experience. Filmmakers would benefit from differentiating their content using technology-forward techniques such as 3D graphics that can only be experienced on the big screen.*
>
> **-Kamal Gianchandani, CEO, PVRINOX Pictures**

Source: EY estimates

Measures to tackle the menace of piracy

The Uri bluff

Still from Uri: The Surgical Strike

When the makers of the 2019 Bollywood film, Uri: The Surgical Strike were faced with the threat of premature release of their film on pirated sites, they devised an ingenious plan to launch what they termed was a 'surgical strike' on piracy to create awareness among the consumers of pirated content. The film team recorded and uploaded a fake version prior to the theatrical release. It was downloaded and viewed several times. The fake torrent featured a stern anti-piracy message. It addressed the need to nip the issue of piracy in the bud by reaching the demographic that was looking specifically for pirated prints. This radical approach was a one-off instance that can be replicated to keep piracy in check

Troubleshooting Telegram

Telegram poses a significant problem, mainly due to the volume of pirated content it hosts. While certain vendors can take down these channels within 24 hours, multiple channels and huge numbers of downloaders make it a difficult proposition

The white box paradox

- White box cryptography is a combination of the code and cryptographic key and is to be implemented by multiple OTTs by early 2024 for mitigation of piracy through IPTV and cable operators. However, there is uncertainty over the ability of the white box to deal with other forms of piracy and hence it cannot be seen as a fail proof solution
- Links can be taken down only once they are detected and reported

Average time taken to bring down pirated content

Non compliant websites	> 48 hours*

**As per the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021, platforms must take down illegal content within 48 hours*

- Considering pirates list their content on numerous servers and mirror sites, losing out on a few links doesn't hamper their income

Watertight content

- Forensic watermarking and identification of user IDs that stream content thousands of times in an hour helps identify pirates and pirate sites
- However, while it can help reduce piracy, it may not entirely eliminate it, as tech-savvy pirates may find ways to remove watermarks. As part of a broader anti-piracy strategy, including encryption and strict law enforcement, watermarking can significantly contribute to combat piracy

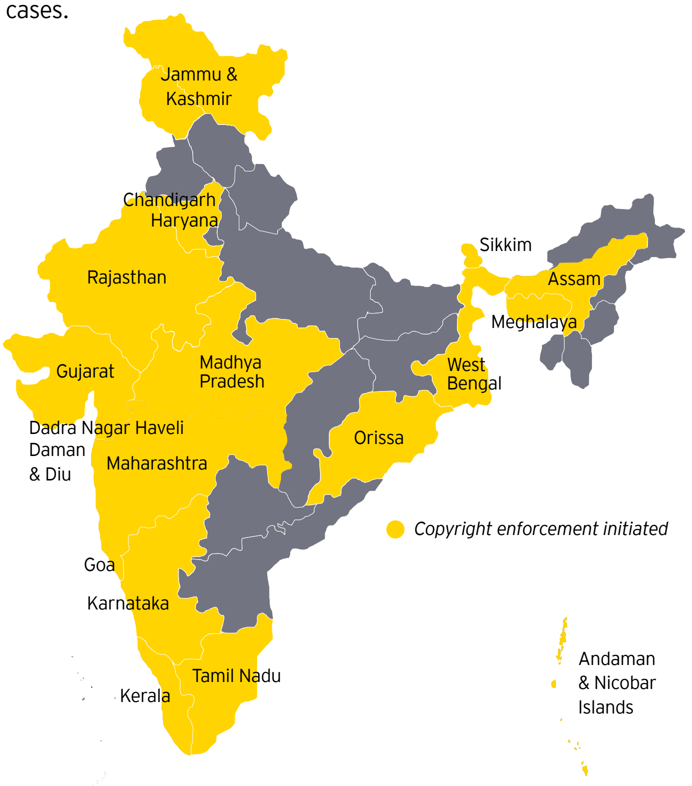
Reality-check

Initiatives such as the **National Malware Repository, National Cyber Security Coordinator (NCSC) and the Indian Cyber Crime Coordination Centre (I4C)** are in place to curb the menace of piracy. The latter also allows complainants to report instances of piracy to its National Cyber Crime Reporting Portal, even if it is not originating from a particular malware.

The CBFC has established an institutional mechanism to receive complaints about exhibition of pirated films on the internet. Under this initiative, two officers from Ministry of Information & Broadcasting and 10 officers from the CBFC along with nodal officers from State Governments have been designated to undertake the responsibility of copyright enforcement and facilitate proper coordination between stakeholders and enforcement agencies.

However, the success of anti-piracy takedowns in India can be largely attributed to state-wise efforts.

The official Copyright Office website[I] informs that the states and Union Territories of Assam, Goa, Gujarat, Haryana, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Rajasthan, Sikkim, Tamil Nadu, West Bengal, Andaman & Nicobar Islands, Chandigarh, Dadra Nagar Haveli, and Daman & Diu have either set up copyright enforcement cells or special cells in the Crime Branch to look after copyright offence cases.



Government's efforts to strengthen the sector

- Digitized the cable distribution sector to attract greater institutional funding
- Increased FDI limit (74% to 100%) in cable and direct-to-home (DTH) satellite platforms
- Granted industry status to the film fraternity for easy access to institutional finance
- Film Facilitation Office (FFO) set up by the Ministry of Information & Broadcasting, Government of India, to enable single-window clearance and facilitation point for producers and production companies seeking filming permissions
- Special cells in the Crime Branch to look after copyright offence cases[II]

Brazilian enforcement agencies carried out search and seizure operations under Operation 404 across various states, shutting down websites and apps that were illegally streaming copyrighted content, and arresting individuals involved.

In Egypt, the Egyptian law enforcement agencies have successfully shut down three major piracy rings operating illegal sports, TV, and movie streaming sites. The crackdown involved seizing 54 infringing domains, mobile phones, IT equipment, and cash

Nationwide crackdown on pirates

Source: Asifalifans/tumblr

The Kerala Anti-Piracy Cell was able to trace IP addresses of more than 1000 users who illegally uploaded and downloaded the film 'Bachelor Party' upon a complaint from an authorized distributor[III]

Soon after piracy reports started doing the rounds following the release of 'Baahubali' in 2015[IV], the Telangana Intellectual Property Crime Unit (TIPCU), inspired by UK's Police Intellectual Property Crime Unit[V] (PIPCU),

Source: Prabhas/Instagram

was set up as India's first unit to deal with IP-related crimes and resolve complaints pertaining to online piracy particularly illegal download/spread of films[VI]. This was an 'expansion' of the Telugu Film Chamber of Commerce's Anti-Video Piracy Cell set up in 2005

Source: Ajay Devgn/X

The Maharashtra government established Maharashtra Intellectual Property Crime Unit (MIPCU)[VII] in 2017 as a novel police unit in the division of the Maharashtra Cyber Cell. In 2021, they tracked down the 'founder' of ThopTV–a subscription-based app for pirated content[VIII]. In 2023, an investigation[IX] by the MIPCU discovered copyright infringement of 'Jawan' and helped Red Chillies Entertainment track down the individuals responsible for profiting from the exploitation of such pirated content

> *There is no silver bullet to mitigating piracy, so a range of strategies and measures are used in conjunction. A notable measure that we have employed in a number of countries with a fair degree of success, including in India, is site blocking where court/administrative orders are obtained to enable ISPs to block access to identified piracy sites (including John Doe orders). Research has shown that site blocking can not only lead to a decrease in piracy, but also to an increase in usage of legal subscription sites.*
>
> **-Industry insider**

With data inputs from Naik Naik & Co.

05 Who will bell the cat?

Regulatory environment

Compiled by
Ameet Naik, Naik Naik & Co.

Piracy in the eyes of the law

- Piracy is the unlawful or unpermitted use or replication of another's work. In legal terms, it can be described as "copyright infringement" under Section 51 of the Copyright Act, 1957
- While the Copyright Act, 1957 does not refer to "piracy" in specific terms, both civil and criminal action can be initiated under the act. The Supreme Court in the case of Knit Pro International v State of Delhi[x], declared copyright infringement as a non-bailable and cognizable offence
- The 2023 amendment to the Cinematograph Act, 1952 includes specific provisions to combat film piracy, and the Information Technology Act, 2000 also deals with unlawful access to computer resources, which can be used to combat digital piracy

Laws to combat piracy

Copyright Act, 1957

Offence: Infringing or abetting the infringement of the copyright in a work or any other right conferred under the Copyright Act barring resale share right

Punishable under: Section 63

Punishment:
Imprisonment of minimum six months, up to three years; fine ranging from INR50,000 to INR200,000

In the event the infringement was not made in the course of business, court may impose a shorter sentence. In case of a subsequent conviction, under Section 63A penalty would be enhanced to imprisonment of minimum 1 year, up to three years and fine ranging from INR 100,000 to INR 200,000.

Offence: Infringing copy on a computer program even if the accused merely had 'knowledge' that the work they were using was not 'legitimate' and was a result of infringement by another party

Punishable under: Section 63B

Punishment:
An imprisonment term of minimum seven days and maximum three years; fine ranging from **INR50,000 to INR200,000**

Offence: Circumventing technological measures put in place, i.e., encryption software to hack copyrighted content

Punishable under: Section 65A

Punishment:
Maximum imprisonment of **two years** and a fine

Digital Rights Management (DRM) employs technology to control access to copyrighted content by giving owners the exclusive right to manage the content entirely

Section 65B introduces a supplementary concept to DRM, providing copyright owners with the benefit of proving or[xi] verifying that they are the owners of the work using the Rights Management Information (RMI) system.

Offence: Deleting or modifying any information of the RMI or distributing, broadcasting, circulating the work after its attached RMI has been 'corrupted' or 'removed'. Mere 'knowledge' of the breach is enough to be punishable

Punishment:
Maximum imprisonment of **two years** and a fine

Global fight against piracy

- Section 65B of the 1957 Act includes a provision, explicitly clarifying that these criminal remedies do not bar initiation of civil action, under Chapter 12 of the 1957 Act, such as reliefs of injunction and damages under Section 55(1)
- These provisions were inserted so that India could 'acquire' membership in WIPO Copyright Treaty (WCT) and WIPO Performers and Phonograms Treaty (WPPT), dubbed WIPO's 'internet treaties'
- India successfully became signatories to them on 25th December, 2018, as part of the Central Government's efforts to extend adequate protection in inter-connected digital world where 'pirates' cross jurisdictional lines

These provisions are said to be far from perfect considering the territorial limitations, especially if primary consumers and hosts of online pirated Indian films are outside India

> *From a business standpoint, it is essential to deal with the piracy problem first. After a certain point, it is not economically feasible to provide a broad range of content.*
>
> **-leading streaming giant**

> *In Tier II cities people are not as tech-savvy, but consume digital pirated content shared on their SD cards at designated stores for a mere sum of INR15. A show that premieres at 12 am on an OTT platform, is on ThopTV--a platform that proudly announces it is 'Made in India--by 12:10 am. Exhibitors are one of the worst hit by the piracy menace and try their best to control the situation, but there's a lack of awareness. Law enforcement and even the film industry--to an extent--turns a blind eye toward the issue. Watching and selling pirated content should be penalised with financial repercussions and jail term. Proactive action-driven initiatives are required to plug the gaps.*
>
> -Akkshay Rathie, Director, Aashirwad Theaters Pvt Ltd

Information Technology Act, 2000

Offence: Gaining access to a computer, computer system or computer network, downloading copies or extracting data from a computer, computer system or network or stealing, concealing, destroying, altering the copyrightable computer source code—whether using digital means or through a removable storage medium such as a pen drive or hard disk

Punishable under: Section 43

Punishment:
Maximum penalty of **INR 1 crore** (INR10 million)

Offence: Destroying, deleting, or altering information contained in a computer resource, whether having intention or knowledge

Punishable under: Section 66

Punishment:
Prison sentence up to 3 years and/or a maximum fine of INR500,000

Anti-Piracy provisions in the Cinematograph (Amendment) Act, 2023

- The Cinematograph Act, 1952, has recently undergone a major amendment to keep up with the changing needs and over time
- According to the Ministry of Information and Broadcasting (MIB) Minister Anurag Thakur, the aim of this amendment was to comprehensively curb piracy and promote the film industry

Anti-Piracy provisions in the Cinematograph (Amendment) Act, 2023

Key changes and its impact

01 | Higher penalties for piracy under Section 7(1A): Imprisonment term of minimum three months to maximum three years and/or fine which shall not be less than INR300,000 and may extend to 5% of the audited gross production cost

02 | It also integrates necessary provisions of the Copyright Act, 1957 and Information Technology Act, 2000 (IT Act), allowing an aggrieved individual under the 1952 Act to also take legal action for computer-related offenses under Section 66 of IT Act, 2000 and pursue infringement-related actions under Section 51 of the Copyright Act, 1957

03 | Empowers central government to act against intermediaries. However, there is ambiguity if it falls under "place licensed to exhibit films" as it is digital and not physical in nature if the intermediaries are disentitled to 'safe harbour provision' under Section 79 of the IT Act.

04 | Section 6AA, which was inserted in the 1952 Act by the 2023 Amendment, increased evidentiary burden on plaintiff's side from mere 'knowledge' to 'intention' prove unauthorized exhibition/recording or establish that "infringing copies" were circulated under Section 2(m)(ii) of the Copyright Act

05 | Section 6AA coupled with Section 6AB(a) states that authorized recording or exhibition for profit and without copyright owner's permission other than at a "place licensed to exhibit films" (excluding OTT content) is prohibited

06 | The 2023 Amendment inserted provisions making liable those who[XII] attempt to commit or abet 'camcorder piracy' under Section 6AA or unauthorized exhibition under Section 6AB in a manner that results in copyright infringement under Section 51 of the Copyright Act

07 | MIB clarified that Section 7(1B)(ii) of the 1952 Act, as inserted by the 2023 amendment, established a "institutional mechanism" to "directly take action" against pirated films by empowering[XIII] the government to take suitable measures to remove/ disable access to such 'infringing copy' exhibited/ hosted on an intermediary platform in violation of section 6AB

The curious case of John Doe orders

What are John Doe orders?

- It is passed by a court against the world at large, allowing a person to take legal action against unknown infringers
- Through this order, the court takes preventive measures by proscribing activities of unidentified infringers
- With the shift towards digital content consumption, there has been a marked increase in the number of John Doe orders granted in India, especially for new films or TV series
- This is an effective tool for copyright owners and has proven to be more efficient than issuing a takedown notice

The genesis of John Doe orders can be traced back to cable piracy during the FIFA World Cup 2002, in the Delhi High Court case of Taj Television vs. Rajan Mandal[XIV]. Since then, with the advent of digitization and advanced tech intervention, piracy has become more difficult to tackle and John Doe orders have been evolving to match steps

Effectiveness of John Doe orders

- According to studies, leveraging John Doe orders to block infringing sites, results in increased consumption of legitimate content.
- Infringing sites often use technology to mask their identity, which can make it difficult to ascertain the owner and prevent infringement. By getting the site blocked for the public via a court order, the copyright owner can avoid incurring further losses. Given the qualitative approach adopted by courts, mirror/redirecting/alphanumeric sites will fall under the scope of the order

John Doe orders are used for various kinds of content, including films, web-series, and live telecasts (such as for live sporting events). Some examples include films like Singham, Dilwale, Padmaavat etc. Recently, the Madras High Court also passed a John Doe order against infringement of the digital rights of IPL 2023

> *One of the most effective ways, apart from civil and criminal actions against the infringers, to curb piracy, is to levy hefty penalty on individuals/companies. Additionally, the advertisers which are relaying their ads (static/ moving) on pirated content, should also be brought within the ambit of such penalty. Maybe we can draw a cue from European Union draft law on compliance of Artificial Intelligence, wherein it is proposed that non-compliance of AI law would lead to penalty which should be equivalent to certain percentage of the turnover/ income of such infringers.*
>
> -Dipti Kotak, Chief Legal Officer, Jio Studios

Case in point: practical implementation of John Doe orders

UTV Software Communications Ltd. & Ors vs 1337X.To. & Ors[XV].

- Delhi High Court discussed whether specific URLs or entire websites needed to be blocked as a manner of enforcement by ISPs and whether a qualitative or quantitative test should be adopted
- It was concluded that the quantitative approach was impractical because even if a URL is blocked, it can be easily changed. DHC accordingly ruled that courts should apply the qualitative test when determining whether to block websites
- The concept of dynamic injunction was introduced, which allows the rights-holders to approach the Joint Registrar of the DHC directly to extend an injunction against a website that's "mirror/redirect/ alphanumeric" and contains similar content
- This approach was based on Singapore High Court's decision in Disney Enterprises vs M1 Ltd.[XVI]

Evolution is key

Despite the nascency of 'John Doe orders' in India, courts are actively evolving to adopt to the ever-changing trends and developing jurisprudence, specifically in relation to curbing piracy in the Media & Entertainment sector, now more than ever

Recommendations to curb piracy

- All OTT platforms and theaters, consulted for this report, urged the need for increased vigilance, swifter crackdown efforts, and global collaboration to fight piracy
- The menace of piracy is far too widespread to be nipped by a unilateral approach
- Adopting a zero-tolerance policy against piracy is the need of the hour

> *India provides great demand for content, however, the absence of maturity and control over piracy makes it hard for the industry to sustain. One of the key components of an effective enforcement program is consequences. Something can be illegal but if there are no (immediate/ real) consequences imposed by law, via civil litigations and penalties, then it is hard to expect compliance.*
>
> -Representative of a leading entertainment OTT platform

In order to win, actions need to be taken by all stakeholders

Media companies

Take a unified stand against piracy

- Striking an industry-wide alliance against piracy will make a strong statement
- It will also deter pirates from exploiting loopholes within the industry

Explore and market ad-based revenue models

- Users who turn to piracy would not mind viewing legitimate content with ads if they don't have to pay a subscription fee
- Ad-supported content models can be explored to entice users away from illegal content

Innovate around pricing and OTT aggregation

- Innovative pricing strategy and packages with ISPs, DTH, mobile networks, that offer content from across platforms will make legitimate streaming outlets attractive to consumers
- This will maximize content reach and increase subscriptions

Consider watermarking for premium OTT content

- Watermarking content with unique account IDs enables tracing pirated material back to its source. OTT platforms should consider it for their premium content

Engage with industry associations

- They can further work with advertisers, advertising agencies, and their respective associations to inform them against advertising on illegal platforms

Government and regulators

Blacklist websites centrally; warn customers

- A centralized database of blacklisted websites will help Internet Service Providers (ISPs) with crackdown efforts
- Warnings/alerts sent to consumers attempting to access blacklisted sites by ISPs can spread awareness and place the choice in the consumers' hands
- This will also serve as a reference for advertising agencies to avoid placing ads on websites that host pirated content. This will help cut off a vital revenue stream for piracy sites, impacting their operational viability

Single-window anti-piracy cell

- An inter-ministerial committee comprising of representatives from MeitY, MIB, DOT and MHA will help bring uniformity
- Setting up a a single-window anti-piracy cell under the committee will expedite grievance reporting and redressal process

Implement stricter enforcement

- Torrenting copyrighted files is illegal in the US, UK, Australia, New Zealand, and most states in the European Union
- Regulatory action includes a warning letter and reduced connection speed. In the US, repeated downloading of illegal copyrighted content can attract criminal penalties, including a US$250,000 fine and up to five years' imprisonment
- Similar action needs to be taken in India

Forge international alliances

- By engaging in a discourse with countries hosting pirate servers, establishing treaties and agreements for enforcement measures against piracy, regulatory bodies can put up a unified global front that can severely cripple piracy operations worldwide

Enable adequate policy updates to match evolved piracy landscape

- While action on this front has already been initiated, Copyright Act can be further fortified to address the issue of digital piracy
- Stricter enforcement for hosting pirated material and engaging in secondary sale of OTT accounts should be considered

Rapid legal proceedings for timely action

- Provisions should be made to fast-track digital piracy lawsuits with dedicated courts
- Empowering nodal officers for quick decision-making and issue of John Doe orders

Regulate usage via partners

- Government should engage with media companies and their industry associations to encourage them to issue list of websites indulging in piracy of content and encourage advertisers, advertising agencies, ISPs, payment processors, etc. to take suitable steps

Launch nationwide awareness programs

- While most people are aware of piracy, embarking on an ambitious campaign to educate the masses, especially in schools and colleges, about the legality of content consumption, personal risks of dealing in pirated content, and its broader impact, can help build a nation of informed individuals who say 'no' to piracy

Reporting program

- Implementing criminal reporting program can facilitate timely raid and investigations
- This, coupled with criminal prosecution of the culprits, can set the stage for a piracy-free ecosystem

Capacity and competency building for the law enforcement agencies at the ground level will play a significant role in curbing piracy

Consumers

Understand user-led accountability

- Large-scale consumer participation can help immensely in the fight against piracy. However, for this, users must understand user-led accountability and undertake the responsibility of reporting pirated content immediately

Appeal to support original creators

- Consumers of pirated content can be swayed into opting for legal sites by highlighting the importance of supporting the industry's creative pursuits and the need to encourage local artists and industry workers

Annexure

Methodology

The following sections explain the methodology used to estimate the size of the piracy economy[1] in India:

A Social Media platforms, YouTube and Telegram

Step A1 Pirated views

Estimating the count of pirated views[2,3,4] from social media platforms, YouTube, and Telegram[5] for full length content. In case of Telegram , the view count was further adjusted/discounted to derive potential actual views.

Theatrical releases: Count of pirated views within first 30 days of theatrical release for select theatrical movies, categorised into four language categories: English, Hindi, South Indian, and other regional languages.

OTT: Count of pirated views for select content released by the OTT players, including movies, web series, TV shows, sports, and library content.

Step A2 Extrapolation

Theatrical releases: In case of theatrical releases, the identified pirated views and corresponding Indian box office collections for sampled movies were proportionately extrapolated based on Indian box office collections for movies released in India in 2023.

OTT: In case of OTT, the pirated views were extrapolated taking into account the popularity of content and volume[6](based on count of properties released by the OTT platforms).

1. **Estimating potential unique users loss for select OTTs**
   The extrapolated number of pirated views for the select OTT properties are divided by the **average number of content views per subscriber**[7] for the select OTTs to arrive at the potential unique users loss for **select OTTs.**
2. **Estimating the potential unique users loss for the entire OTT industry**
   The potential unique users loss is divided by **individual market shares of each OTT**[6] (considered in sample) and averaged to arrive at unique users loss for the **entire OTT industry.**
3. **Adjustments were made for certain shows that garnered very high pirated views**

[1]*Theatrical and OTT*

[2]*Content that was released in English but pirated in a non-Indian language has been excluded from the calculation*

[3]*Content that was released in English and pirated in English has been considered after adjusting India-based traffic for the particular social media or Telegram application (source: similarweb)*

[4]*Data provided by MarkScan*

[5]*According to the algorithm used by Telegram, every time a user scrolls through pirated content on Telegram, it is counted as a 'view'. To adjust the inflated view count from Telegram, we used the public survey results that indicated the average number of times a user on Telegram watches pirated content while scrolling.*

[6]*https://www.justwatch.com/*

[7]*Derived based on consumer survey*

[8]*Does not include visitors who may have connected through VPN*

[9]*Top websites that have high volume of India traffic as per Similar Web considered for analysis.*

[10]*as per SimilarWeb*

B Internet

Step B1 Number of unique viewers loss due to piracy through illegal websites

Estimating unique Indian visitors[8] per website

1. 947[9] internet domains/websites that host streaming/ downloadable pirated content in India were considered.
2. The average monthly unique visitor count[4] for each website was annualized. The resulting number was then multiplied by the India traffic percentage for each website[10] to derive its unique viewers from India.

Identifying visitors based on segment[11]

1. Information of segment-wise URLs hosted on each website was collated to derive a weighted segment-wise footfall[4]. The unique viewers were further assigned to different segments based on the above weights[12].
2. In case of movies, further segregation was made between theatrical and OTT viewers based on the proportion of pirated views (derived in step A.1) for select movies that were released in theaters, as well as on OTT platforms.

Step B2 Adjusting for common viewers who watch both theatrical releases and OTT content

A percentage of unique viewers who watched both movie and OTT content[7] were added to the unique viewers derived in Step B.1 for movie and OTT content.

Step B3 Adjusting for overlapping unique viewers on different websites for different segments[13]

Unique OTT viewers were adjusted/discounted by dividing the count with average count of properties watched by users[7]

C Displacement Rate

To derive the estimated size of piracy, the displacement rate[7] has been used to identify pirated content users who would be willing to pay even if the pirated content was not available

D Revenue multiple

Revenue multiples used for pirated views for box office and OTT

Based on the estimated size of piracy derived above, the below rates were applied to arrive at the financial impact due to piracy from internet and social media

1. Average ticket prices for English, Hindi, South Indian, and other regional movies in India – Theatrical releases
2. Average revenue per user in India – All content streamed on OTT

E Other modes of Piracy

To consider impact of piracy due to other modes such as mobile apps (excluding Telegram), physical copies etc, loss figures derived from social media and internet were used and percentage[7] attributed to these other modes was applied.

[11]*The segments considered for the analysis are Theater movie releases, OTT movie releases, Originals, GECs, sports. Other genres such as anime, music, games, software, e-books, pornography are considered only for the purpose of weights to determine genre wise unique users.*

[12]*Theater included movie segment and OTT includes movies, GECs, originals, sports (recorded + live)*

[13]*This adjustment is done to eliminate risk of inflated count being considered as a single user may visit multiple websites for watching content available across different segments.*

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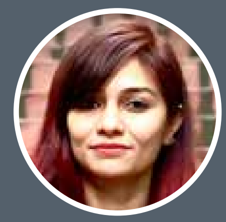

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Disclaimers

Our calculations are rooted in survey responses that estimate how much pirated content people would have paid for if it hadn't been freely available through piracy - a measure we refer to as the 'displacement rate'.

Estimated revenue losses are rooted in prospective figures regarding the counts of potential views for pirated digital movies and potential users of OTT content. These estimates also factor in the average revenue per user for the pirated material and the proportion of this illicit digital content that would likely have been bought and paid for if piracy were not an available option.

This report has been developed by conducting primary and secondary research, discussions with several companies and industry stakeholders, and cross referencing of available data points. To the extent possible, the data has been verified and validated. However, there can be no guarantee that such information is complete or correct as of the date it is received or that it will continue to be correct in the future.

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Despite our best efforts, errors do creep into this report, which we correct when brought to our notice. Please do use the latest updated version from our website.

While this report has been created at the request of the IAMAI, EY retained complete editorial control over the same.

In considering social media and internet views, every single view has been accounted for as a potential loss, without regard to whether or not the entire content was consumed by the viewer.

We have relied on the information as made available to us by Markscan. It may not be possible to check the accuracy and authenticity of all the information provided to us.

We have made the assumption that one viewer equates to the loss of a single ticket or subscription. This does not account for situations where multiple people might be viewing from a single screening.

We have presupposed that the number of pirated views for each theatrical piece of content would be individually correlating with its amount of box office earnings.

It is assumed that the availability of pirated TV content online translates into a loss for the OTT platforms

We have assumed that the number of pirated views of OTT content is in proportion to the popularity that such content holds.

In terms of unique visitor traffic to each website, we have assumed that it's proportional to the amount of segment content that each platform possesses.

This report does not factor in indirect consequences of piracy, such as job loss, tarnishing of company or industry reputation, legal repercussions, or potential investment loss among others.

We've applied the country-specific traffic proportions from platforms such as social media, YouTube, and Telegram, operating under the assumption that the traffic for pirated views of English language content would follow the same pattern.

We have assumed that the influx of unique visitors to a specific website is proportional to the volume of segment-wise content made available on that particular site.

[I] https://copyright.gov.in/frmstatewiselistnodalofficers.aspx

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[III] https://www.ndtv.com/entertainment/kerala-police-cracks-down-on-film-piracy-case-against-1000-607387

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[XVII] [2018] SGHC 206

Glossary

Abbreviations	Full form
Ads	Advertisements
Apps	Applications
CBFC	Central Board of Film Certification
CDN	Content Delivery Network
DHC	Delhi High Court
DVD	Digital Versatile Disc
EY	Ernst & Young
FM	Frequency Modulation
GB	Giga Byte
GDP	Gross Domestic Product
GEC	General Entertainment Content
IAMAI	Internet and Mobile Association of India
ID	Identification
INR	Indian Rupee
IP	Internet Protocol
IPTV	Internet Protocol Television
ISP	Internet Service Provider
IT	Information Technology
M&E	Media & Entertainment
MO	Modus Operandi
OTT	Over-the-top
Sci-fi	Science-fiction
Tech	Technology
TV	Television
UK	United Kingdom
URL	Uniform Resource Locator
US	United States
VCR	Video Cassette Recorder
VFX	Visual Effects
VHS	Video Home System
VPN	Virtual Private Network

Ernst & Young LLP

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