



The winter of our discontent: generative AI disrupts the entertainment industry content moat

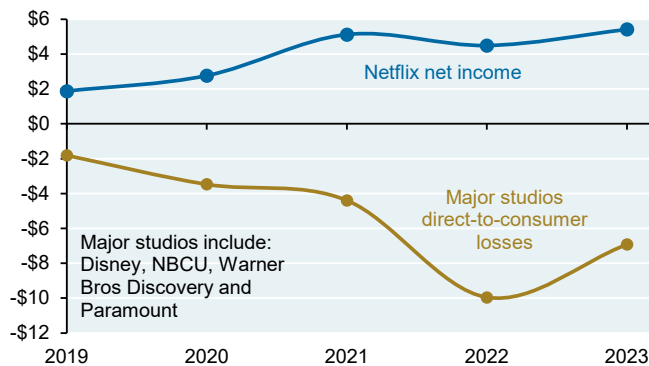
While the prior decade was defined by disruption in content distribution, the next decade will be defined by disruption in content creation, creating a combination of opportunity and risk for legacy media companies.

Historically, there were two large moats in entertainment, one in content creation (risky and expensive) and the other in content distribution (capital intensive cable, fiber, satellites). Once programming became unbundled from infrastructure, the distribution moat fell. Media analyst Doug Shapiro outlined the results at a conference last year: Netflix, which offered streaming as a free add-on in 2007, became the most powerful company in Hollywood while video-related profits of the big media companies (CBS, Discovery, Disney, Fox, NBC Universal, Viacom and Warner Media) fell by 38% from 2018 to 2023 before rebounding to a 27% decline through 2024.¹

As an example of shifting fortunes, see the second chart on the breakdown of viewing time for the top 100 streaming titles across all platforms in 2023. While the Netflix share from original content declined, the overall Netflix share remained roughly the same at 50%-55% since the legacy studios were willing to license their best content to Netflix. In 2024-2025, the Netflix share of total TV viewing time grew, but not as fast as other streaming platforms such as YouTube. Streaming now exceeds legacy broadcast plus cable for the first time as a share of TV viewing time. The stakes are high: as shown in the last chart, **the pie is barely growing**...total video revenue across traditional and streaming platforms is roughly flat vs 2018 levels.

Streaming earnings

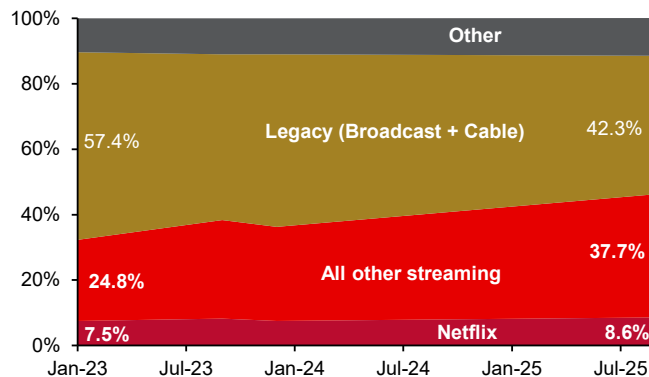
US\$, billions



Source: The Wrap, 2024

Share of US TV viewing time

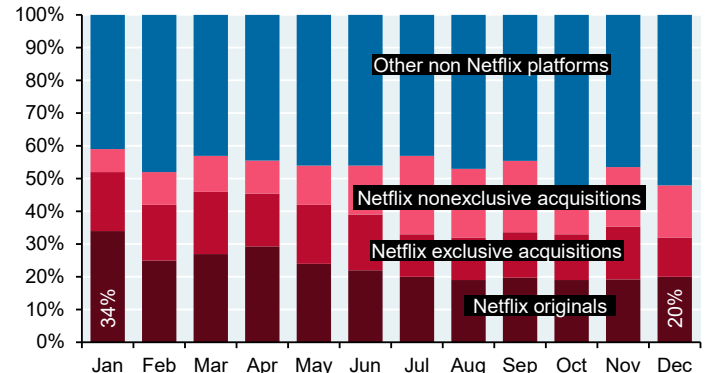
Percent



Source: Netflix, Nielsen, Q3 2025

Viewing time of top 100 streaming titles, 2023

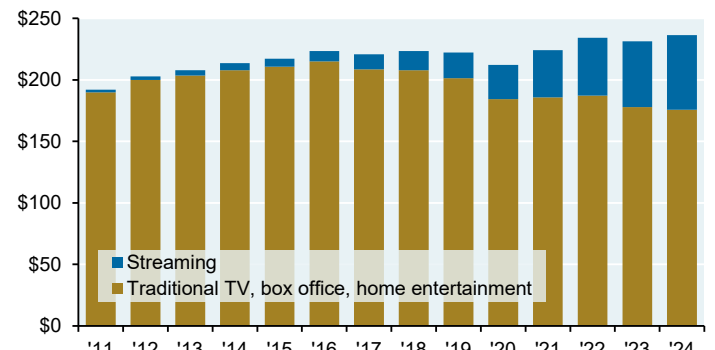
Percent



Source: The Hollywood Reporter, January 2024

US video revenue, traditional vs new

US\$, billions



Source: Doug Shapiro, Kagan/S&P Capital IQ, MAGNA, MoffettNathanson, MPAA, Box Office Mojo, DEG, The Mediator, May 2025

On December 2: the biennial Eye on the Market Alternative Investments Review which will cover buyout, venture capital, hedge funds, private credit, private real estate, secondary funds and evergreen funds.

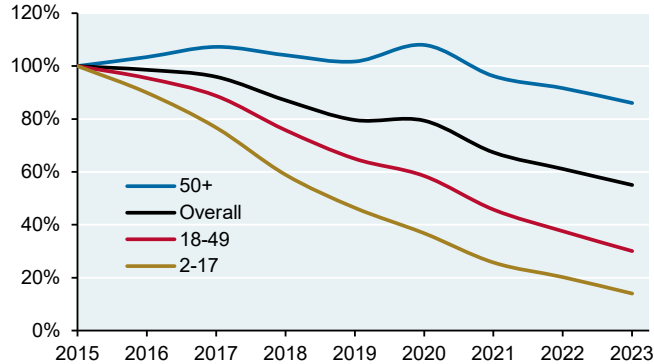
¹ Doug Shapiro (Bank of America, Time Warner/Warner Media, The Mediator), "GenAI in Hollywood, Threat or Opportunity", May 23, 2024


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Troubling signs for legacy film/TV: a sharp decline in viewership by those under 50 for cable TV programming with the exception of sports, and the slow post-COVID recovery in motion picture box office receipts/ticket sales. Note where the film industry stacks up vs other pandemic-affected sectors. The combination of all these factors has contributed to underperformance of most major media stocks since 2022.

Viewing of all legacy TV programming ex. sports by age

Time viewed vs 2015, percent

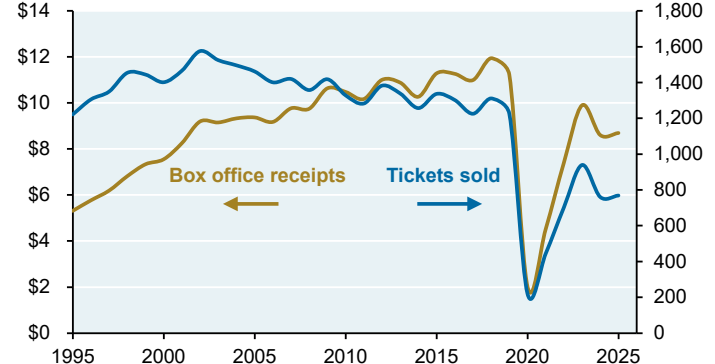


Source: Doug Shapiro, Nielsen, MoffettNathanson, May 2025

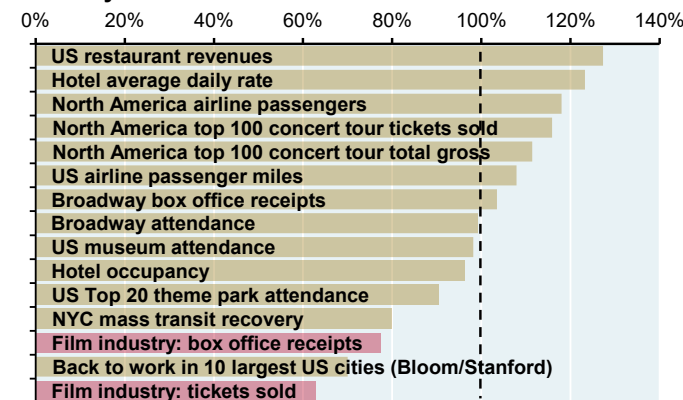
US film industry domestic box office results by year

US\$, billions

Millions



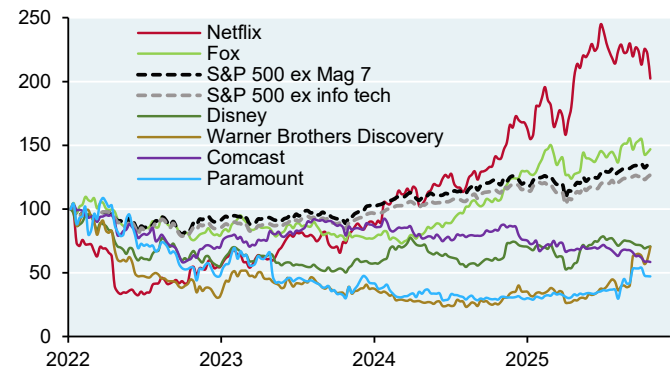
Source: Nash Information Services. 2025 figures are annualized

Recovery rates since 2019


Source: JPMAM, 2025

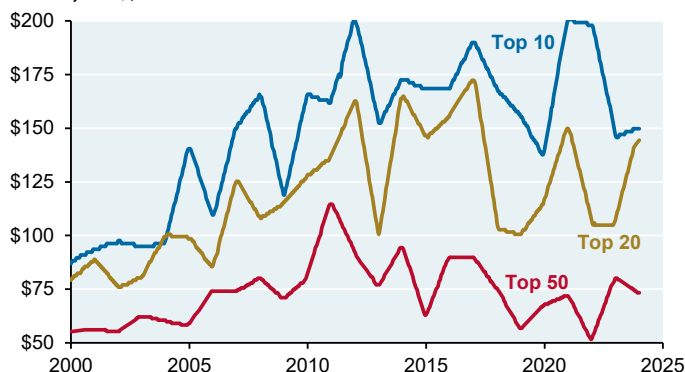
Select media stock price performance

Index (100 = January 2022)



Source: Bloomberg, JPMAM, October 24, 2025

While the distribution moat has fallen, the content moat still looks steep using a traditional lens: the cost of producing top-grossing movies continues to hover at \$100-\$150 million, and series such as Wandavision, Hawkeye, The Rings of Power and Stranger Things routinely cost \$25 mm+ per episode. In other words, the content moat looks daunting to new entrants looking to compete in traditional film and television venues. **But new platforms now competing for viewer attention don't require that kind of large investment...**

Median budgets of top grossing films at the domestic box office, US\$, millions


Source: Stephen Follows Film Industry Research, October 25, 2025

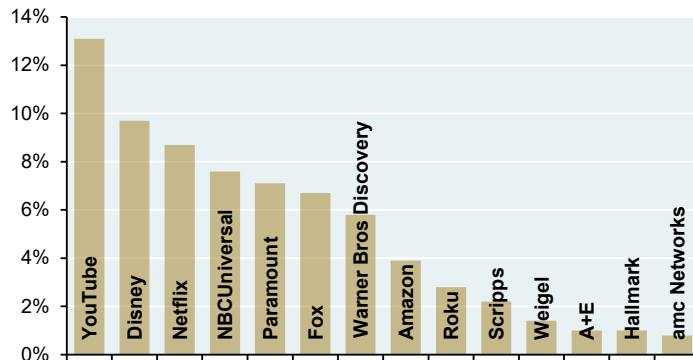

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Democratization of high-quality content creation is growing. YouTube has already reached 10% of all content viewing on televisions (not even including mobile devices), and social media and video networks have even overtaken television as a source for news according to Nielsen polling.

What's new: AI text-to-video tools like Pika, Runway, Stable Diffusion and Sora are making it easier for new entrants to create high quality content for both digital and TV platforms. In 2024, AI models were first able to match human capabilities on Visual Commonsense Reasoning tasks, and text-to-video models are building on that progress. According to Shapiro, video content disruption could happen quickly: in 2023, Hollywood put out ~15,000 hours of TV and film while there were 300 *million* hours of content uploaded to YouTube. If viewers consider just 0.01% of that YouTube content to be just as interesting as Hollywood fare, that's twice Hollywood's annual content output. As shown in the third chart, the share of total media economy revenue (advertising plus consumer) coming from user generated content has doubled, a sign of increased viewer acceptance. The same trend is seen in the music industry: from 2017 to 2024, the independent/creator share (artists not signed to a major commercial record label or Merlin) of Spotify music streams rose from 13% to 29%.

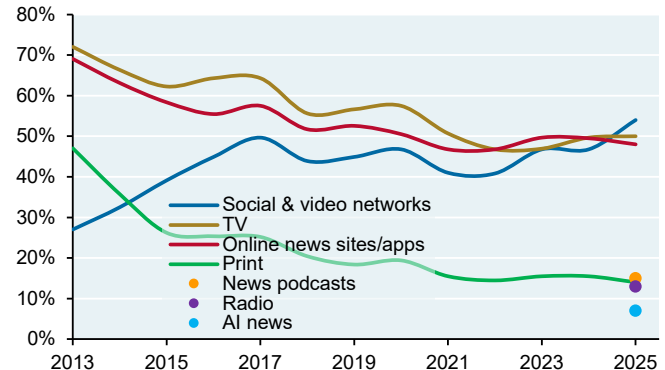
In other words: it's getting easier and cheaper to produce content just as consumers are lowering their quality standards for consuming it. Just as MP3s replaced CDs despite having only 25% of the audio bit rate (a measure of sound quality), consumers are now more comfortable with user-generated videos alongside more polished, high quality production values. Another example of changing quality standards: while US video gamers are roughly stagnant in terms of their share of the population and weekly hours played², US Roblox users are still growing; Roblox is a platform made up of 44 million mostly lower fidelity, user-generated games.

Media company share of television screen time, Aug 2025
Percent of TV watch time (broadcast, cable & streaming)



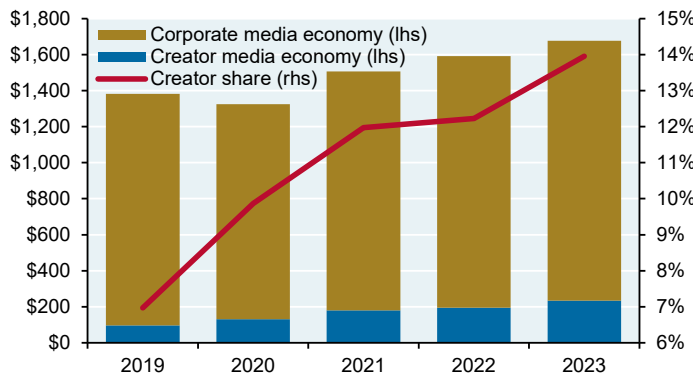
Source: Nielsen Media Distributor Gauge, August 2025

US news consumption by source
% of survey respondents using each news source in the past week



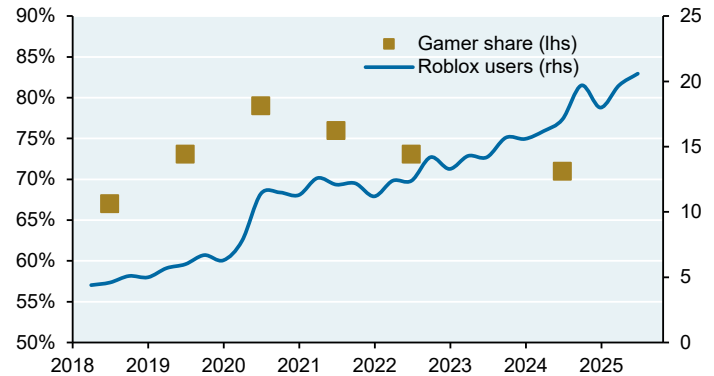
Source: NiemanLab, Reuters Institute for the Study of Journalism, June 2025

Creator vs corporate global media revenue
US\$, billions Percent of total media economy



Source: Doug Shapiro, May 2025

Video gamers vs Roblox users
% of US population US daily active users, millions



Sources: Roblox, Matthew Ball, TechCrunch, 2025

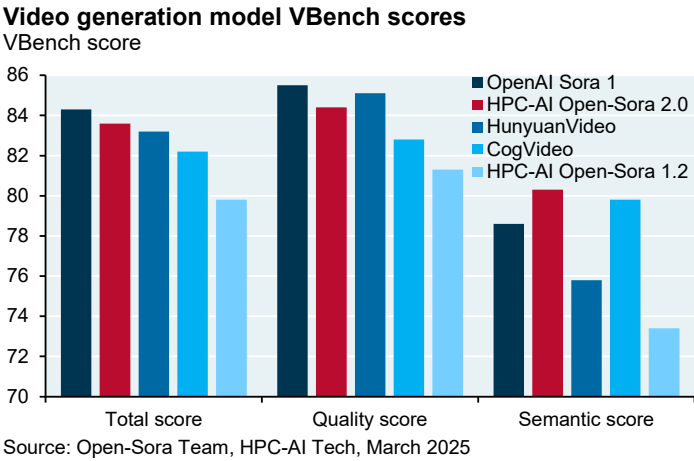
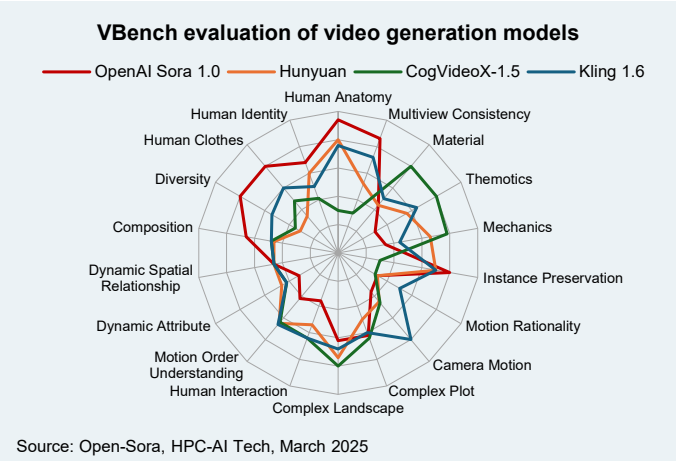
² "The State of Video Gaming in 2025", Matthew Ball (Epyllion), July 23, 2025



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Assessing AI video tools. Benchmarks such as VBench have been created to compare AI video creation programs. The polar chart on the left compares the capabilities of OpenAI’s Sora 1.0 to three Chinese programs. There are also open-source versions of text-to-video: HPC-AI’s open-source Open-Sora 2.0 creates videos at 10% of the training cost of models such as OpenAI’s Sora 1.0 and at comparable quality³. Open-Sora videos are only 5 seconds in length, so this is early stages. But it’s clear where this is heading; Tilly Norwood, the AI generated digital actress rolled out over the summer by the AI company Particle6, is actively seeking talent representation.

This landscape is changing rapidly: programs like OpenAI’s Sora 2.0, LTX and VEO 3.1 are already eclipsing the capabilities of what were leading edge video generation models just a few months ago. The table shows the latest text-to-video leaderboard as determined by users.



LMarena text-to-video leaderboard

Rank	Model	Score
1	Google: veo-3.1-audio	1404*
1	Google veo-3.1-fast-audio	1395*
1	OpenAI: sora-2-pro	1365
2	Google: veo-3-fast-audio	1368
3	Google: veo-3-audio	1354
6	OpenAI: sora-2	1318
7	Google: veo-3-fast	1261
7	Google: veo-3	1247
8	KlingAI: kling-2.5-turbo-1080p	1223
9	MiniMax: hailuo-02-pro	1215
9	MiniMax: hailuo-02-standard	1194
10	Bytedance: seedance-v1-pro	1193
11	KlingAI: kling-v2.1-master	1172
13	Google: veo-2	1163
15	Alibaba: wan-v2.2-a14b	1128
15	Bytedance: seedance-v1-lite	1110
17	OpenAI: sora	1070
17	Luma AI: ray2	1062
19	Pika: pika-v2.2	1007
19	Genmo AI: mochi-v1	996

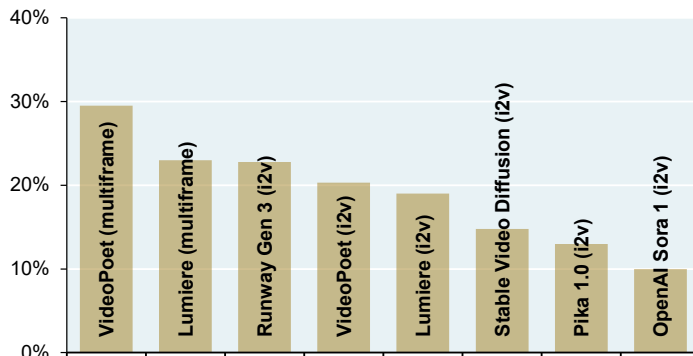
Source: LMarena, JPMAM, October 2025. *Preliminary score

³ “Open-Sora 2.0: Training a Commercial-Level Video Generation Model for \$200k”, Open-Sora and HPC-AI Tech, March 2025. Open-Sora is not affiliated with OpenAI Sora; the name sounds deliberately similar to me.


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Do AI video models simply engage in pixel prediction, or are they “learning” the laws of physics? Researchers at Google Deep Mind developed Physics-IQ, a comprehensive dataset that can only be solved by acquiring a deep understanding of various physical principles such as fluid dynamics, optics, solid mechanics, magnetism and thermodynamics⁴. Experiments include tasks such as dropping items of different weights into pillows, a paintbrush gradually depleting its ability to color a sheet of plastic and what happens when a lit match is put into a glass of water. For many models, the understanding of physical principles is limited as shown by the low scores in the chart. Even so, I’m amazed at the physical accuracy of videos included on Deep Mind’s [web page](#) associated with this project, and Deep Mind researchers are optimistic about potential for improvement.

Video generative model understanding of physical principles, Physics-IQ score



Source: Google DeepMind, February 2025. i2v = image2video

From Deep Mind:

“Given success of scaling deep learning, we’re optimistic that future-frame prediction alone could lead to a much better understanding...

Even though models in our study often failed to generate physically plausible continuations, most were already successful on some scenarios. For example, the highest-ranking model VideoPoet displayed remarkable physical understanding in certain scenarios, such as accurately simulating paint smearing on glass...

A study based on synthetic datasets has shown that given a large enough dataset size, video models are able to learn specific physical laws. We consider it likely that as models are trained on larger and more diverse corpora of videos, their understanding of real-world physics will continue to improve”

From Midjourney, a text-to-image model, on its progress from 2022 to 2024:



⁴ “Do generative video models understand physical principles?”, Google Deep Mind, February 2025



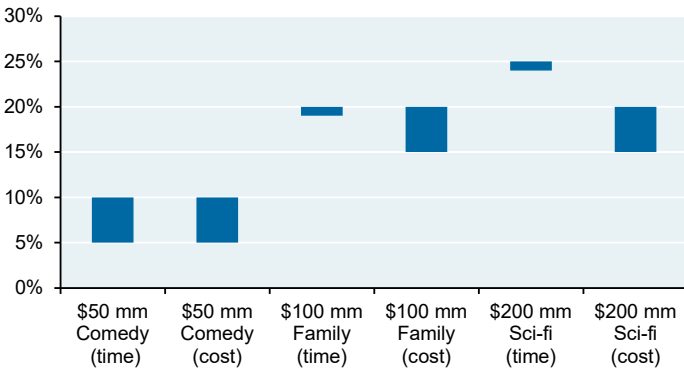
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The implications for legacy film studios are not all negative. According to a 2023 analysis from Bain & Company, a shift towards more virtual production could reduce production times and costs by 5%-10% for \$50 mm films and more for family movies, sci-fi sequels and animation. Sources of potential savings include:

- post-production colorization
- markerless motion capture
- automating repetitive tasks like rotoscoping and background removal, generating complex effects like fire and crowds
- LED volumes (a digital background on a large wraparound LED wall, combined with physical set elements and rendered in real time using a game engine)

The film industry has a long history of innovation⁵: King Kong (1933, stop motion), 2001 A Space Odyssey (1968, front projection green screen), Tron (1982, computer generated imagery), Jurassic Park (1993, robotics and digital compositing), Lord of the Rings (2001, photorealistic CGI), Avatar (2009, virtual cameras/simulcam), The Mandalorian (virtual production sets) and Avatar II (2023, underwater motion capture technology). Generative AI would continue that long tradition. The table shows startup AI animation studios seeking a slice of the pie.

Time and cost savings from adoption of virtual production methods, Savings range, percent



Source: Bain & Company Virtual Production Analysis, 2023

Notable AI studios focused on animation

Studio	Backing	AI assisted work
Animaj	HarbourView	Pocoyo (1bn views per month on Youtube)
AI Mation	Private equity	Where the Robots Grow
Animated Co	Pre-seed	The Myth
Asteria	Moonvalley	Uncanny Valley; Love Letter to LA; Odd Birds
Invisible Universe	SevenSevenSix, SV Angel, Initialized Capital, Serena Williams, Jennifer Aniston	Qai-Qai
Native Foreign	Independent	Critterz
Promise	North Road, Andreessen Horowitz, Google AI, Crossbeam, Saga, Kivu	In development
Toonstar	Founders Fund, Snap, Greycroft	StEvEn & Parker (8 bn views to date)

Source: "Animation + AI", Luminate Intelligence, September 2025

Richard III sitting on top of a crumbling content moat⁶



⁵ "AI on the Lot: The Next Disruption of Media", Doug Shapiro, May 2025

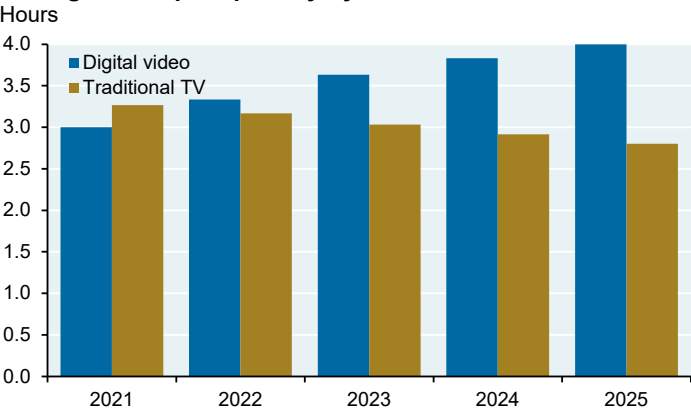
⁶ "The winter of our discontent" is a phrase spoken by Richard III in the first act of Shakespeare's play written in 1590. The actual Richard III died in 1485. In 2012, the remains of Richard III were found under a friary church parking lot in Leicester England. Richard was then given a proper burial in Leicester Cathedral.



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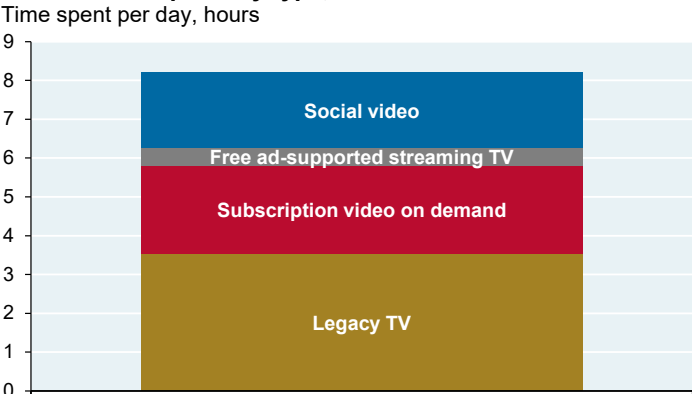
In any case, the big issue remains: the studios may be able to shave 10%-15% from production costs (more for animated features), but viewers may continue to migrate to alternative forms of content, particularly as generative AI video programs increase quality and lower cost. As shown below, digital video has overtaken the traditional TV attention span of the average US adult, and social video alone (YouTube, TikTok⁷ and Instagram) now represents an estimated 25% of US daily video screen time. The other challenges: (a) companies like Apple and Amazon appear to view video as a loss leader whose primary value lay in the ability to pull viewers into the company’s broader ecosystem (the original business plan for AppleTV+ called for losses of \$15 to \$20 billion in the first five years), and (b) as shown at the bottom, new media venues tend to be deflationary.

Average time spent per day by US adults



Source: Insider Intelligence, eMarketer, 2024

Video consumption by type, 2024



Source: Doug Shapiro, Maverix Insights MIDG data, Nielsen, 2024

Feature	TikTok	Instagram Reels	YouTube Shorts
Monthly active users	1.2 bn	2.0 bn	1.5 bn
% Gen Z	42.9%	30.1%	14.5%
% Millennial	31.2%	31.5%	20.2%
Engagement rate	8.9%	2.0%	0.6%
Female users	57.0%	49.3%	46.1%
Male users	43.0%	50.7%	53.9%
Ad reach	884.9 mm	675.3 mm	2.6 bn
Ad reach as % of total population (18+)	11.2%	10.9%	32.4%

Source: Gray Agency, 2025

Monetization rate per hour of video, gaming and music

Video			Music		Gaming		
Linear	Netflix	YouTube	CD	Spotify	Console	PC	Mobile
\$0.54	\$0.37	\$0.19	\$0.67	\$0.06	\$0.11	\$0.06	\$0.06

Sources: Doug Shapiro, S&P Capital IQ, Moffett Nathanson, NewZoo, Spotify, TIAA, IFPI

⁷ My Tik-Tok feed includes videos in which abandoned dogs are rescued in cold, freezing conditions by the side of the highway followed by heartwarming images of their recovery and a home of their own. The creators often provide links allowing viewers to purchase food and medicine for their new dog on Amazon. I have donated money several times despite Rachel being convinced that these are scams.



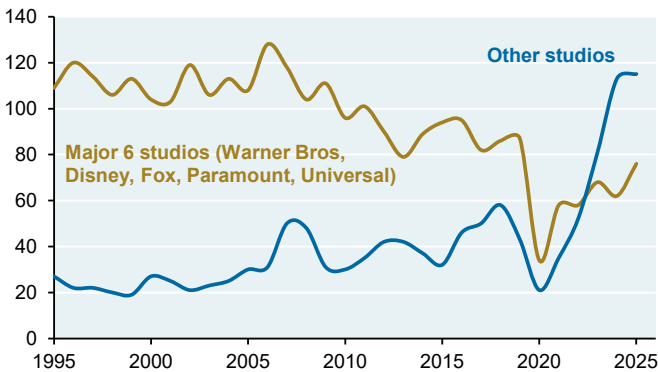
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One advantage for legacy content creators vs user-generated content: storytelling still matters. As shown below, smaller studios have been the ones increasingly telling them; whether this is the result of capital discipline by large studios or something else is unclear, at least to me. We can infer the value of storytelling from Amazon’s acquisition of MGM in which it valued MGM’s 4,000 film and 17,000 episode TV library at \$3.4 billion; Disney’s \$87 billion in acquisitions for Pixar, Marvel, LucasFilm and Fox; Viacom’s purchase of a Miramax stake; library acquisitions by Lantern (Weinstein), Vine (Lakeshore), Lionsgate (Spyglass, eOne), Raven (Open Road), etc. Case in point: in Q1 2025, Lionsgate reported an operating loss but also reported record film library revenues. Netflix is reportedly exploring an acquisition of Warner Bros studio and streaming businesses which include Harry Potter, DC Comics and Game of Thrones libraries, which would build on its formidable position in total streaming content shown on the right. Another sign that demand for feature films is not in terminal decline: the rising share of movies as a percentage of streaming revenue shown in the third chart.

The value of TV episode libraries is evident in the last exhibit. People are still watching Gunsmoke (!), and Little House on the Prairie made the list in 2024.

Nationwide movie releases by year

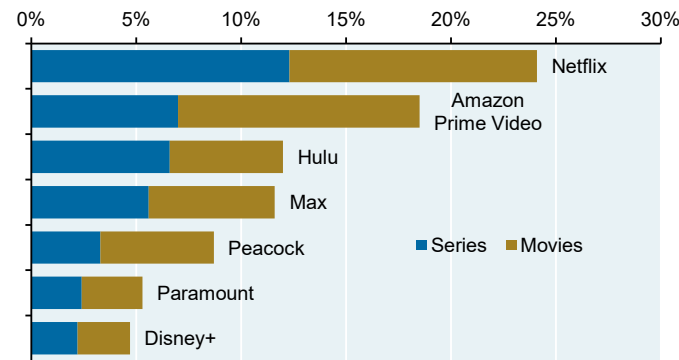
Number of released movies



Source: Nash Information Services, 2025

Platform catalog share of industry content

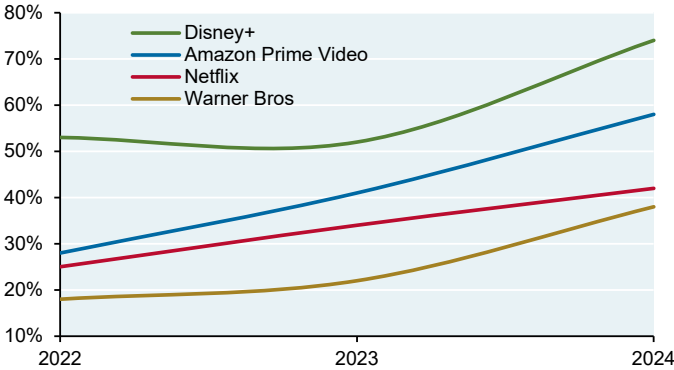
Percent



Source: Parrot Analytics, Q1 2024

Movie share of streaming revenue

Percent



Source: Video Week, Parrot Analytics, 2025

Top US and global streaming programs

US, H1 2025		Minutes viewed (billion)	Global, H2 2024		Hours viewed (million)
1	Bluey	25.1	1	Grey's Anatomy	1000
2	Grey's Anatomy	22.6	2	Prison Break	788
3	NCIS	19.1	3	Lost	700
4	Family Guy	19.1	4	Big Bang Theory	693
5	Bob's Burgers	17.1	5	Dexter	640
6	Spongebob Square	16.7	6	The Resident	639
7	Big Bang Theory	16.6	7	Gilmore Girls	621
8	The Rookie	15.6	8	Suits	527
9	Squid Game	15.1	9	Supernatural	510
10	Law & Order: SVU	14.5	10	Friends	491
11	Reacher	13.3			
12	American Dad	13.0			
13	Criminal Minds	12.6			
14	Night Agent	12.2			
15	Supernatural	11.0			
16	White Lotus	11.5			
17	Friends	11.4			
18	Gunsmoke	11.0			
19	Young Sheldon	10.6			
20	South Park	10.5			

Sources: Nielsen Streaming Content Ratings, Digital i, 2025

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I hope the content moat remains in place a bit longer. I enjoy a lot of content from existing studios and hope they survive. I have ranked 400+ films across multiple decades and genres on [my Letterboxd account](#). The table shows 21st century films that I ranked at 4.5 or 5.0⁸. The last column shows publicly available estimates of each film's multiple of worldwide box office receipts relative to its production budget.

To be clear, estimated multiples are less accurate in the streaming era. Before streaming, virtually all theatrical releases went into theatres and there were good public sources for video/DVD sales and standardized TV deals. But in the streaming era, additional income is opaque, direct-to-streaming deals can be substantial, and there are screening outlets such as Patreon. These multiples should also **not** be seen as profitability markers since 35% to 50% of box office receipts are paid to distributors. But as a rough indication of success, I find it useful.

My top ranked films in the 21st century, excluding documentaries

Film	Year	Cembalest Ranking	Studios	Ratio of reported worldwide box office receipts to reported production budget
The Ballad of Wallis Island	2025	4.5	Baby Cow, Moxie, BBC	4.0
All of Us Strangers	2023	4.5	Film4, Searchlight, Blueprint, TSG	4.4
Anatomy of a Fall	2023	4.5	France 2 Cinema	7.4
The Banshees of Inisherin	2022	5.0	Film4, Searchlight, Blueprint, TSG	2.6
Aftersun	2022	4.5	BBC, Tango, Unified Theory, Pastel	3.3
The Tragedy of Macbeth	2021	5.0	A24, IAC	0.0
Mank	2020	5.0	Netflix	0.0
Another Round	2020	5.0	Zentropa, Topkapi	4.2
Transit	2018	4.5	Schramm, Neon, Arte France	NA
The Death of Stalin	2017	5.0	Gaumont, Quad, Panache	1.6
Three Billboards	2017	4.5	Searchlight, Film4, Blueprint	13.4
The Lobster	2015	5.0	Element, Film 4, Lemming	4.0
Birdman	2014	5.0	TSG, Worldview, New Regency	5.7
Wild Tales	2014	5.0	El Deseo, K&S, Telefe	6.7
Locke	2013	4.5	IM Global, Shoebox	1.1
Blue Jasmine	2013	4.5	Gravier, Perdido	5.7
Inside Llewyn Davis	2013	5.0	StudiCanal, Anton Capital	3.0
The Artist	2011	4.5	France 3, Studio 37	8.0
Coriolanus	2011	5.0	BBC and a lot of other ones	0.3
In Bruges	2008	5.0	Focus, Twins, Blueprint	2.3
Eastern Promises	2007	5.0	Focus Features	1.1
Last King of Scotland	2006	4.5	Fox Searchlight, Cowboy, DNA	8.2
A History of Violence	2005	5.0	New Line	1.9
Eternal Sunshine of...	2004	5.0	Focus Features	3.6
Lost in Translation	2003	5.0	American Zoetrope, Elemental	29.3
Adaptation	2002	4.5	Columbia, Propaganda, Intermedia	1.8
Lantana	2001	4.5	MBP, Chapman	NA
Mulholland Drive	2001	4.5	StudioCanal	1.4
Memento	2000	5.0	Newmarket, Summit	7.9

Source: Michael Cembalest Letterboxd account, Nash Information Services, 2025

Michael Cembalest
JP Morgan Asset Management

⁸ The highest possible Letterboxd movie ranking is a 5. Subjects of the best documentaries I've seen: Jeff Buckley, Luther Vandross, Robert Downey Sr, Louis Kahn, Robert Evans, Glen Campbell, Humphrey Bogart, Sam Harkness and the Octopus Teacher.

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