INDUSTRIES OF INDIA

# The Movie

*Shadow, Celluloid, Stream - Source Companion*

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# How to read this companion

*Every numbered source below was consulted during the writing of The Movie: Shadow, Celluloid, Stream. In the book's text, superscript numbers point to these entries; the same number appears wherever the same source is cited again. Each entry names the source, what it supports in the text, and how fully it was read. Sources were accessed on 3 November 2026. Figures are quoted as the source states them, including the source's own rounding. Where a figure is a forecast, the book says so. 93 sources follow.*

## Prologue - The Horse That Left the Ground

**1. Bibliotheque numerique Medica, Marey and the photographic gun (presentation)**. Marey's graphic method and The Animal Machine (1873/74 English translation reaching Stanford); La Nature's publication of Muybridge's plates in December 1878; the twelve-camera track arrangement and Marey's 1882 chronophotographic gun.
https://numerabilis.u-paris.fr/medica/bibliotheque-numerique/presentations/marey/03-en.php
Read: Presentation pages read.

**2. Wikipedia, The Horse in Motion (article and production notes)**. Muybridge's June 1878 Palo Alto sequence photographs of Sallie Gardner and other horses; the plates as the first chronophotography; his zoopraxiscope projection of painted discs 1880-1895.
https://en.wikipedia.org/wiki/The_Horse_in_Motion
Read: Article and cited production table read.

## The Lantern That Summoned Ghosts

**3. University of Antwerp science heritage, Phantasmagoria and the magic lantern**. Kircher's 1646 description and Huygens's working lantern of about 1659 with its dancing-skeleton slide; the Courtois family's fairground lantern shows from 1818; Robertson's phantasmagoria tradition of projected ghosts.
https://scifair.uantwerpen.be/stories.p/6.m/phantasmagoria
Read: Full page read.

## The Toys That Explained the Movies

4. **Wikipedia, Firsts in animation (milestone table)**. Dates of the optical toys: thaumatrope 1825 (John Ayrton Paris); phenakistiscope 1833 (Plateau and Stampfer, simultaneous); zoetrope 1866 (after Stampfer 1833 and Horner 1834); flip book patented 1868 (Linnett); praxinoscope 1877 (Reynaud).
https://en.wikipedia.org/wiki/Firsts_in_animation
Read: Milestone table read.

5. **David Bordwell, 'A Case for Cognitivism' era essay on apparent motion, Iris no. 11 (1990)**. The critique of 'persistence of vision' as the explanation of film motion; apparent motion (the phi and beta phenomena) as the actual perceptual basis.
https://www.davidbordwell.net/articles/Bordwell_Iris_no11_summer1990_107.pdf
Read: Essay excerpt read.

### The Photographers of Time

6. **Guinness World Records, First surviving film**. Louis Aime Augustin Le Prince holds the record for the earliest surviving film, shot in Leeds, England.
https://www.guinnessworldrecords.com/world-records/first-surviving-film
Read: Record page read.

### The Show That Beat the Cinematograph

7. **Wikipedia, Theatre Optique**. Reynaud's Theatre Optique at the Musee Grevin: opened 28 October 1892, over 12,800 shows to more than 500,000 visitors by March 1900; Pantomimes Lumineuses including Pauvre Pierrot.
https://en.wikipedia.org/wiki/Th%C3%A9%C3%A2tre_Optique
Read: Article read.

### The Priest and the Ribbon

8. **National Inventors Hall of Fame, Hannibal Goodwin**. Goodwin, an Episcopal priest, developed transparent flexible nitrocellulose roll film and applied for a patent in 1887; the Patent Office declared an interference with Kodak, which Goodwin won; his estate later won a $5 million settlement from Eastman Kodak.
https://www.invent.org/inductees/hannibal-goodwin
Read: Full inductee page read.

9. **U.S. National Park Service, History of Film Types - Timeline**. Eastman cellulose-nitrate roll film introduced 1889; cellulose-nitrate motion picture film introduced 1895; cellulose-diacetate safety film introduced for 16 mm around

1922 and sheet film around 1925; edge-marking of nitrate vs safety stock from about 1930.
https://www.nps.gov/subjects/hfc/history-of-film-types-timeline.htm
Read: Full timeline page read.

### Nitrate: The Beautiful, Dangerous Base

**10.** **Wikipedia, Bazar de la Charite**. The 1897 Bazar de la Charite fire in Paris, which claimed 126 lives, many of them aristocratic women, during a cinematograph show.
https://en.wikipedia.org/wiki/Bazar_de_la_Charit%C3%A9
Read: Article read.

**11.** **Wikipedia, 1937 Fox vault fire**. The Little Ferry, New Jersey fire of 9 July 1937: spontaneous combustion of decaying nitrate gases, more than 40,000 reels destroyed, most pre-1932 Fox silent films lost.
https://en.wikipedia.org/wiki/1937_Fox_vault_fire
Read: Article read.

**12.** **Library of Congress, The Survival of American Silent Feature Films 1912-1929 (Pierce, 2013)**. Only 14 per cent of American silent-era feature films survive complete in their original 35 mm format; another 11 per cent survive in foreign versions or smaller gauges; about 75 per cent of the era's creative record is lost.
https://www.loc.gov/static/programs/national-film-preservation-board/documents/pub158.final_version_sept_2013.pdf
Read: Foreword and findings read.

### Thirty-Five Millimetres

**13.** **Greg's Sandbox, Film Size history notes**. Dickson's 1889 order of 1 3/8 inch (34.8 mm) film from Eastman; Edison's four rectangular perforations per frame against the Lumiere single round hole; the variety of rival gauges of the 1890s (Le Prince 54 mm paper, Skladanowsky 50 mm, Prestwich 60 mm, Veriscope 63 mm).
http://www.gregssandbox.com/gtech/filmsize/filmsize.htm
Read: Gauge history notes read.

**14.** **The American WideScreen Museum, Evolution of widescreen**. The 1.37:1 Academy ratio prevailed from the early sound era until 1953; Cinerama (1952) pushed the industry toward larger as well as wider screens.

https://www.widescreenmuseum.com/widescreen/evolution.htm
Read: Reference pages read.

### Edison, Dickson and the Peephole

**15. Library of Congress, Early Motion Picture Productions (Edison collection essay).** The Black Maria studio built at West Orange in December 1892, its pivoting sun-tracking design; Fred Ott's Sneeze copyrighted 7 January 1894 as the earliest surviving copyrighted film; more than 75 films made in 1894.
https://www.loc.gov/collections/edison-company-motion-pictures-and-sound-recordings/articles-and-essays/history-of-edison-motion-pictures/early-motion-picture-productions/
Read: Full essay page read.

**16. National Film Preservation Foundation, Peepshow Kinetoscopes of 1894.** First Kinetoscope parlor, 14 April 1894, New York: five machines, 25 cents for five films, about $120 taken on the first day without advertising; projection systems appeared almost simultaneously in 1895 in France, Germany, England and the United States.
https://www.filmpreservation.org/preserved-films/screening-room/t1-peepshow-kinetoscopes-from-1894
Read: Screening room essay read.

### December 28, 1895

**17. Catalogue Lumiere, FAQ: the first Lumiere screenings.** Dates the private Cinématographe presentations of March and June 1895 and the first public paying screening on 28 December 1895 at the Salon Indien du Grand Café, Paris, with the ten-film programme listed by title.
https://catalogue-lumiere.com/faq-movies/
Read: Full FAQ page read.

**18. National Geographic, Creation of the Motion Picture (history magazine).** The Lumiere brothers' Cinematographe as combined camera, developer and projector; Louis Lumiere's reported remark 'Le cinema est une invention sans avenir' shortly after the public premiere.
https://www.nationalgeographic.com/history/history-magazine/article/creation-of-the-motion-picture-lumiere-brothers
Read: Article read.

### The Clock That Eats Film

**19.** **Wikipedia, Geneva drive**. The drive wheel's pin reaches into a slot in the driven wheel and advances it one step at a time - 90 degrees per step for a four-slot wheel - while an elevated circular blocking disc locks the driven wheel between steps; an external Geneva advances the driven wheel in less than 180 degrees of drive-wheel rotation, so the stop is always longer than the motion.
https://en.wikipedia.org/wiki/Geneva_drive
Read: Mechanism sections read.

**20.** **Wikipedia, Movie projector (principles of operation: film gate, shutter, intermittent mechanism)**. The gate holds the film still while the shutter is open; a rotating shutter interrupts the light while the film is advanced; the intermittent sprocket moves only while the shutter blocks the lamp, advancing four perforations (one 35 mm frame) at a time, usually via a Geneva (Maltese cross) movement; modern shutters run at a flicker rate of two (48 Hz) or three (72 Hz) times the 24 fps frame rate.
https://en.wikipedia.org/wiki/Movie_projector
Read: Principles-of-operation sections read.

**21.** **California Social Welfare History Archives (CSCHS), Hollywood Movie-Making history notes**. Edison's 1896 purchase of the Latham Loop patent and its near-universal adoption by 1905; nickelodeon admission of five cents against 25-50 cents for vaudeville; The Great Train Robbery (1903) as the first narrative movie, 14 scenes and 12 minutes.
https://www.cschs.org/wp-content/uploads/2024/08/History-Resources-Caragozian-Hollywood-Movie-Making-8-8-24.pdf
Read: History notes PDF read.

**22.** **ASME, Inside a Projectionist's Booth**. The projectionist's trade in the 35 mm era: labour-intensive operation and first-line maintenance of projectors, lamps, platters and sound systems; nitrate's fire behaviour; carbon-arc lamphouses and their heat.
https://www.asme.org/topics-resources/content/inside-a-projectionists-booth
Read: Full article read.

### Nickels and Lawyers

**23.** **Library of Congress, Edison company essay: Fictional Films Dominate**. First nickelodeon built in Pittsburgh in June 1905 by Harry Davis; nickelodeons ran shows all day and favoured fiction films; Edison's patent litigation against competitors.

https://loc.gov/collections/edison-company-motion-pictures-and-sound-recordings/articles-and-essays/history-of-edison-motion-pictures/fictional-films-dominate
Read: Full essay page read.

**24.** **PBS American Experience, Mary Pickford chronology**. 1905: John Harris and Harry Davis coin 'nickelodeon' with their Pittsburgh theatre; 1908: the Motion Picture Patents Company ('the Trust') is established to control the industry with ten licensed producers.
https://www.pbs.org/wgbh/americanexperience/features/pickford-chronology/
Read: Chronology entries read.

**25.** **History.com, Florence Lawrence: The First Movie Star**. Florence Lawrence as the first film actress whose name was used to promote her films; her move from Biograph (1908, $25 per week) to Carl Laemmle's IMP and the publicity ruse that launched the star system.
https://www.history.com/articles/florence-lawrence-the-first-movie-star
Read: Full article read.

### The Invention of the Cut

**26.** **Harvard Film Archive, The Illusory Tableaux of Georges Melies**. Melies's invention of fundamental editing techniques - jump cuts, double exposures, superimpositions, stop tricks - and the folkloric camera-jam discovery of the stop trick.
https://harvardfilmarchive.org/programs/the-illusory-tableaux-of-georges-melies
Read: Programme essay read.

### The Movie Finds Its Voice

**27.** **Electronics Guide, History of Motion Picture Sound**. Sound-sync tolerances (a fifth of a second is unmistakable); Vitaphone's sixteen-inch 33 1/3 rpm shellac discs sized to match an eleven-minute 35 mm reel at 24 fps and 90 feet per minute - the origin of the LP's 33 1/3 rate.
https://www.electronicsguide.net/foundations-and-theory/history/additional-specialized-histories/motion-picture-sound-history/
Read: Technical history read.

**28.** **Smithsonian National Museum of American History, The Birth of Motion Picture Sound**. The Jazz Singer's premiere on 6 October 1927 at Warner Bros.' Times Square theatre; Don Juan (1926) as the first feature with a synchronized

score and effects; The Broadway Melody (1929) as the first sound film named Best Picture.
https://americanhistory.si.edu/blog/2012/07/you-aint-heard-nothing-yet-curator-dwight-blocker-bowers-on-the-birth-of-motion-picture-sound.html
Read: Full interview read.

**29.** **Library of Congress, National Film Registry essay: The Jazz Singer**. The Jazz Singer was not the first talking picture but the first successful synchronized feature with talking; after its premiere there was no turning back to silents.
https://www.loc.gov/static/programs/national-film-preservation-board/documents/jazz_singer.pdf
Read: Essay PDF read.

### Colour, the Long Way Round

**30.** **National Media Museum (UK), George Albert Smith biography**. Kinemacolor, the first successful natural colour process: two-colour red-green recording projected at 32 fps; proved in July 1906, first demonstrated 1 May 1908, commercially premiered at the Palace Theatre, London, 26 February 1909; Smith's interest bought out for GBP 5,000.
https://www.nmpft.org.uk/insight/downloads/georgealbertsmith.html
Read: Biography read.

**31.** **George Eastman Museum, Technicolor: Dye-Transfer Printing**. Dye-transfer printing introduced for two-colour work in 1926, adapted for three-colour in the 1930s; Foxfire (1954) the last American film shot with three-strip cameras; Hollywood dye-transfer lab closed 1975, Britain 1978, Italy 1980.
https://www.eastman.org/technicolor/technology/dye-transfer-printing
Read: Full technology page read.

### The Wide Answer

**32.** **Encyclopedia.com, The American Film Industry in the Early 1950s**. US weekly attendance fell from about 90 million (1946 peak) to 60 million in 1950 and 40 million by 1960; television sets sold 7.3 million in 1950 and never fewer than 5 million a year through the decade; TV-owning families cut film-going by 20-30 per cent (Paramount's 1950 poll).
https://www.encyclopedia.com/arts/culture-magazines/american-film-industry-early-1950s
Read: Article and its data tables read.

**33.** **The New York Times, Dave Kehr on CinemaScope (2009)**. The Robe's premiere at the Roxy Theater in New York on 16 September 1953; CinemaScope licensed from Henri Chretien; an anamorphic lens squeezing a wide image onto standard 35 mm stock.
https://www.nytimes.com/2009/03/29/movies/29kehr.html
Read: Article excerpt read.

**34.** **National Film and Sound Archive of Australia, CinemaScope glossary entry**. CinemaScope debuted 16 September 1953 with The Robe; projected ratios of 2.55:1 with four-track magnetic sound or 2.35:1 with optical sound, from an original 2.66:1.
https://www.nfsa.gov.au/preservation/preservation-glossary/cinemascope
Read: Glossary entry read.

### The Palace

**35.** **ASHRAE Journal, The History of Air Conditioning in Theatres (125th anniversary series)**. Early theatre air conditioning: the New Empire Theater in Alabama's 1917 refrigerating machine as the first known air-conditioned movie theatre, and Balaban and Katz's Central Park Theater in Chicago the same year with a Wittenmeier CO2 system marketed as a headline feature.
https://www.ashrae.org/file%20library/technical%20resources/ashrae%20journal/125thanniversaryarticles/044-053_chang_historical.pdf
Read: Historical article read.

### Why Hollywood

**36.** **PBS SoCal (KCET), How Did Hollywood End Up in Hollywood**. Why production moved to Southern California: 320 days of photography weather claimed by Moving Picture World in 1911; open-shop labour with carpenter wages 25-50 per cent below the East Coast; distance from the Trust's subpoenas; varied locations and cheap land.
https://www.pbssocal.org/shows/lost-la/how-did-hollywood-end-up-in-hollywood
Read: Full article read.

### The Factory That Made Stars

**37.** **CCEA Moving Image Arts fact file, The Hollywood Studio System**. Vertical integration defined; Zukor's combination of Paramount distribution with production from 1917 and theatre buying by 1922; the Big Five as the five

vertically integrated majors by the late 1920s.
https://ccea.org.uk/downloads/docs/Support/Fact%20File%3A%20AS/2019/AS%20MIA%20Fact%20File%3A%20The%20Hollywood%20Studio%20System.pdf
Read: Fact file read.

**38.** **Wikipedia, History of Metro-Goldwyn-Mayer**. MGM formed in 1924 by Marcus Loew's merger of Metro Pictures, Goldwyn Pictures and Louis B. Mayer Pictures to supply his theatre chain; MGM's dominance from the late silent era to the late 1950s; Amazon's 2022 acquisition of MGM.
https://en.wikipedia.org/wiki/History_of_Metro-Goldwyn-Mayer
Read: Article read.

### The Code

**39.** **Wikipedia, Motion Picture Production Code (Hays Code)**. The Code adopted 1930 under Will Hays's MPPDA (founded 1922); the June 1934 amendment creating the Production Code Administration and requiring a Seal of Approval for all releases from 1 July 1934; replacement by the MPAA ratings system in 1968.
https://en.wikipedia.org/wiki/Hays_Code
Read: Article read.

**40.** **IFTA, Marketplace Challenges Continue for Independent Films in China**. China's import system: 34 films a year on a revenue-sharing basis (14 required to be enhanced-format), the foreign distributor's share capped at 25 per cent, plus an informal flat-fee quota bringing total imports to around 60; only the state-owned China Film Group and Huaxia may import films.
https://ifta-online.org/marketplace-research/territory-snapshots/marketplace-challenges-continue-for-independent-films-in-china/
Read: Territory snapshot read.

### Paramount, 1948

**41.** **Wikipedia, United States v. Paramount Pictures, Inc.**. The 1948 Supreme Court case, 334 U.S. 131, that ended the old studio system's vertical integration; the Justice Department's two-year sunsetting notice for the decrees issued August 2020.
https://en.wikipedia.org/wiki/United_States_v._Paramount_Pictures,_Inc.
Read: Article read.

**42.** **U.S. Department of Justice, Antitrust Division: Paramount Decree Review**. What the Paramount decrees required: divestiture of theatres from distribution, and the end of block booking, circuit dealing, resale price maintenance and overbroad clearances; DOJ's 2019-2020 review finding the decrees' world gone.
https://www.justice.gov/atr/paramount-decree-review
Read: Full review page read.

### The Other Cinemas

**43.** **UN News on UNESCO Institute for Statistics survey, 2009**. Feature-film production counts for 2006: India (Bollywood) 1,091, Nigeria (Nollywood) 872 all on video, United States 485; about 99 per cent of Nigerian screenings in informal settings.
https://news.un.org/en/story/2009/05/299102-nigeria-surpasses-hollywood-worlds-second-largest-film-producer-un
Read: Full release read.

**44.** **Box Office Pro on Comscore's 2020 global box office**. 2020 global box office of $12.2 billion, down 71 per cent, the largest drop on record; China the top market at $3.1 billion (down 66 per cent from $9.2 billion in 2019); North America $2.25 billion against $11.4 billion in 2019 (peak $11.9 billion in 2018); 2019 global total $42.5 billion.
https://www.boxofficepro.com/global-box-office-down-71-in-2020-china-supplants-north-america-as-top-market/
Read: Full article and data table read.

### The Blockbuster Rebuild

**45.** **History.com, How Jaws Changed the Movie Business**. Jaws (1975) opened in more than 400 theatres - unusually wide, though The Trial of Billy Jack (1974) had used a 1,000-theatre saturation opening; Jaws became the first film past $100 million at the box office and over $450 million worldwide, and set the summer-blockbuster template of wide release, wall-to-wall marketing and merchandising.
https://www.history.com/articles/jaws-movie-shark-blockbuster
Read: Full article read.

**46.** **Smithsonian Magazine, The Star Wars Merchandising Empire**. Star Wars (1977) integrated merchandising with filmmaking; Kenner's empty-box promise during the 1977 holiday rush; merchandise revenue helped finance the sequels - the licensing model for franchise cinema.

https://www.smithsonianmag.com/blogs/air-space-museum/2019/12/20/star-wars-merchandising-empire/
Read: Full article read.

47. **Kansas City Public Library, The Multiplex Is Born**. Stanley Durwood opened the Parkway Twin, the first purpose-designed twin multiplex, on 12 July 1963 in Kansas City's Ward Parkway Shopping Center, both screens initially showing The Great Escape.
https://www.kchistory.org/blog/the-multiplex-is-born
Read: Full article read.

### The Festival and the Statuette

48. **Academy of Motion Picture Arts and Sciences, The 1st Academy Awards: Memorable Moments**. The first Academy Awards (16 May 1929): Wings won Best Picture - the only silent film to do so - and the winners had been announced three months before the event.
https://www.oscars.org/oscars/ceremonies/1929/memorable-moments
Read: Ceremony page read.

49. **Festival de Cannes, In September 1946, the Festivities Begin**. The first Cannes Film Festival, held in September 1946 after the 1939 inaugural edition was stopped by the outbreak of war.
https://www.festival-cannes.com/en/2017/in-september-1946-the-festivities-begin/
Read: Festival history page read.

50. **Park City Museum, The Growth of the Sundance Film Festival**. Sundance's start as the Utah/US Film Festival in September 1978, co-founded with Robert Redford as first board chairman; Sydney Pollack's suggestion of a ski-resort, ski-season home; the move to Park City in January 1981.
https://parkcityhistory.org/the-growth-of-the-sundance-film-festival/
Read: Festival history read.

### The Movie in the Living Room

51. **Wikipedia, Blockbuster (retailer)**. Blockbuster founded 19 October 1985 in Dallas by David Cook; corporate stores closed January 2014.
https://en.wikipedia.org/wiki/Blockbuster_(retailer)
Read: Article read.

**52. Digital Broadcasting / Consumer Electronics Association on DVD adoption (1999).** The CEA declared DVD the fastest-selling consumer electronics product in history: about 349,000 players sold in 1997, 1.08 million in 1998, over 3.1 million in 1999; more than 110 million DVD-Video titles shipped since launch.
https://www.digitalbroadcasting.com/doc/its-official-dvd-now-fastest-consumer-electro-0001
Read: Article read.

### The Electronic Image

**53. Nokia Bell Labs, The Charge-Coupled Device**. Boyle and Smith invented the CCD at Bell Labs in 1969, work that won the 2009 Nobel Prize in Physics; Tompsett developed it for imaging in the 1970s.
https://www.nokia.com/bell-labs/about/history/innovation-stories/charge-coupled-device/
Read: Innovation story read.

**54. NewsShooter, A Look Back at the History of the ARRI Alexa**. The ARRI Alexa debuted in April 2010 with a Super-35-sized 3.4K CMOS sensor and became the de facto standard for high-end features, episodic TV and commercials.
https://www.newsshooter.com/2018/02/02/a-look-back-at-the-history-of-the-arri-alexa/
Read: Full article read.

**55. Deadline, Cinemas' Digital Takeover (February 2012)**. By early 2012, 25,570 of 39,641 US screens (64.5%) were digital (NATO figures); IHS expected 35 mm to fall to 17% of global screens by 2015; ARRI, Panavision and Aaton ended 35 mm camera production in 2011; more than 51,000 DLP digital screens installed worldwide by late 2011.
https://deadline.com/2012/02/cinemas-digital-takeover-the-decline-and-fall-of-film-as-we-have-known-it-208772/
Read: Full article read.

**56. Reuters, Kodak files for Chapter 11 (19 January 2012)**. Eastman Kodak's Chapter 11 filing in January 2012, with a $950 million credit facility against more than $6 billion in liabilities, after failing to reinvent itself for the digital age.
https://www.reuters.com/article/us-kodak-bankruptcy-idUSTRE80I1N020120119/
Read: Article read.

### The Pixel Learns to Act

**57. Industrial Light & Magic, ILM Evolutions: 50 Years of Animation (part one)**. ILM's CG milestones: The Abyss (1989) pseudopod, Terminator 2 (1991) T-1000, Jurassic Park (1993) as the turning point for photorealistic CG characters.
https://www.ilm.com/ilm-evolutions-50-animation-part-one/
Read: Full article read.

**58. Wired, Toy Story: The First Computer-Animated Feature (December 1995)**. Toy Story as the first 100-percent computer-generated theatrical feature: 1,560 shots, some 400 models, rendered with RenderMan on 117 Sun SPARCstations, about 800,000 machine-hours for 77 minutes; Jurassic Park's CG illusions totalled about six minutes of running time.
https://www.wired.com/1995/12/toy-story/
Read: Full article read.

**59. American Cinematographer, O Brother, Where Art Thou? (October 2000)**. The Coens' O Brother, Where Art Thou? (2000) and its pioneering full digital intermediate: Roger Deakins shot conventionally on film, then the whole feature was digitised and colour-graded digitally before being recorded back to film.
https://theasc.com/article/o-brother-cinematography-deakins/
Read: Article read.

### The Last Print

**60. Digital Cinema Initiatives, About and press materials**. DCI created in March 2002 as a consortium of the major studios to set voluntary open-architecture specifications for digital cinema, the standard behind the DCP and compliant projection.
https://www.dcimovies.com/about/
Read: About and press pages read.

**61. Cinepedia, Business FAQs: What is a VPF?**. The Virtual Print Fee: studios paid exhibitors a fee per digital booking, recycling their savings on film prints to finance the conversion of projection equipment, typically over five to six years.
https://cinepedia.com/faqs/business-faqs
Read: FAQ read.

**62. Los Angeles Times, Paramount stops releasing movies on film (January 2014)**. Anchorman 2 (December 2013) was Paramount's last 35 mm release in the US, and The Wolf of Wall Street the first major studio film distributed entirely digitally - the first major studio to stop releasing on film.

https://www.latimes.com/entertainment/envelope/cotown/la-et-ct-paramount-digital-20140117-story.html
Read: Full article read.

**63.** **UNIC (International Union of Cinemas) Annual Report 2014/15**. Digital conversion across UNIC European territories reached 93 per cent in 2014, near completion of the digital transition in Europe.
https://unic-cinemas.org/fileadmin/user_upload/wordpress-uploads/2015/06/AR_UNIC_EN_web_150610.pdf
Read: Relevant report section read.

### The Editor's Machine

**64.** **TV Technology, The Evolution of Post-Production**. Avid's 1989 NAB debut - five systems sold - as the start of editing in computers, moving video editing into the non-linear mainstream.
https://www.tvtechnology.com/miscellaneous/postproduction-evolution
Read: Article read.

### The Envelope and the Algorithm

**65.** **Wikipedia, Netflix (history sections)**. Netflix founded 29 August 1997 in Scotts Valley, California, as a DVD-by-mail rental service entering the $16 billion home-video industry; streaming service 'Watch Now' launched 16 January 2007 with about 1,000 films against 70,000 on DVD; billionth DVD delivered February 2007.
https://en.wikipedia.org/wiki/Netflix
Read: History sections read.

**66.** **The New York Times, House of Cards Arrives as a Netflix Series (January 2013)**. Netflix's House of Cards (1 February 2013): all 13 episodes released at once, an investment of hundreds of millions in original programming - the arrival of the streaming original.
https://www.nytimes.com/2013/01/20/arts/television/house-of-cards-arrives-as-a-netflix-series.html
Read: Article read.

**67.** **The New York Times, Netflix Is Ending Its DVD-by-Mail Business (April 2023)**. Netflix ended its DVD-by-mail service after 25 years, shipping final discs on 29 September 2023; the DVD service peaked around 2010 with roughly 20 million

subscribers.
https://www.nytimes.com/2023/04/18/business/media/netflix-dvds-earnings.html
Read: Article read.

### The Stream Eats the Windows

**68. CNBC, Disney Plus launch kicks off the streaming wars (November 2019)**. Disney+ launched 12 November 2019, opening the streaming-wars phase in which the major studios pulled content to their own services.
https://www.cnbc.com/2019/11/11/disney-plus-launch-kicks-off-the-streaming-wars.html
Read: Article read.

**69. Deadline, Warner Bros Sets Entire 2021 Movie Slate to Debut on HBO Max Along With Cinemas (December 2020)**. Warner Bros.' December 2020 decision to release its entire 2021 film slate day-and-date on HBO Max and in cinemas - the pandemic-era collapse of the theatrical window.
https://deadline.com/2020/12/warner-bros-2021-movie-slate-hbo-max-matrix-4-dune-in-the-heights-1234649760/
Read: Article read.

**70. CNBC, Netflix tells shareholders to focus on revenue and profit, not subscriber adds (October 2022)**. By 2022 Netflix reported more than $5 billion in operating profit while rival streaming services lost money, and it stopped forecasting subscriber additions - the industry's pivot from growth-at-all-costs to profitability, advertising tiers and paid sharing.
https://www.cnbc.com/2022/10/18/netflix-message-to-shareholders-focus-on-revenue-profit-not-subscriber-adds.html
Read: Article read.

### The Year the Theatres Went Dark

**71. Motion Picture Association, 2021 THEME Report**. Combined global theatrical and home/mobile entertainment market of $99.7 billion in 2021, up 24 per cent on 2020; $328.2 billion including pay TV; streaming 72 per cent of the combined theatrical and home/mobile market; 1.3 billion streaming subscriptions worldwide in 2021 after passing one billion in 2020; global box office $21.3 billion in 2021; U.S./Canada box office $4.5 billion.
https://www.motionpictures.org/wp-content/uploads/2022/03/MPA-2021-THEME-Report-FINAL.pdf
Read: Report highlights read.

**72. Gower Street Analytics, 2025 global box office estimate**. 2025 global box office estimated at $33.55 billion: up 6 per cent on 2024, down 1 per cent on 2023, and 16 per cent (about $6.6 billion) below the 2017-2019 pre-pandemic average; December 2025 was the highest-grossing December since 2019 at $3.5 billion, led by Zootopia 2 and Avatar: Fire and Ash.
https://gower.st/articles/highest-grossing-december-since-2019-3-5-billion-33-6-billion-global-total-2025/
Read: Full article read.

**73. Box Office Report, weekend of 21-23 July 2023 actuals**. 'Barbenheimer' weekend: Barbie's $155.0 million domestic and $337.0 million global debut; Oppenheimer's $82.5 million domestic and $180.4 million global debut; a combined $244.5 million domestic and $536.7 million global launch.
http://www.boxofficereport.com/weekend/20230723.html
Read: Weekend report read.

**74. UC Berkeley Labor Center, Negotiating Workers' Rights at the Frontier of Digital Workplace Technologies in 2023**. The 2023 WGA strike lasted 148 days; the ratified contract's AI provisions - disclosure of AI-generated material, protected authorship and compensation, no replacement of WGA writers by AI, and streaming data transparency.
https://laborcenter.berkeley.edu/negotiating-workers-rights-at-the-frontier-of-digital-workplace-technologies-in-2023/
Read: Article read.

**75. The Hollywood Reporter, OpenAI Introduces AI Video Tools (February 2024)**. OpenAI's Sora video generator unveiling and its reception in Hollywood; an industry study of 300 entertainment leaders in which three-fourths said AI supported job elimination, reduction or consolidation, with nearly 204,000 positions expected to be adversely affected over three years.
https://www.hollywoodreporter.com/business/business-news/openai-introduces-ai-video-tools-encroaches-hollywood-1235826527/
Read: Full article read.

### The Companies

**76. The Walt Disney Company, Form 10-K for fiscal 2025 (SEC EDGAR)**. Disney's fiscal-2025 segment results: total revenues of $94.4 billion, with Entertainment $42.5 billion, Sports $17.7 billion and Experiences $36.2 billion; total segment operating income of $17.6 billion.

https://www.sec.gov/Archives/edgar/data/1744489/000174448925000155/R9.htm
Read: Segment information section read.

77. **Paramount press release, Skydance Media and Paramount Global Complete Merger (7 August 2025)**. Completion of the Skydance-Paramount merger on 7 August 2025, backed by the Ellison family and RedBird Capital.
https://ir.paramount.com/news-releases/news-release-details/skydance-media-and-paramount-global-complete-merger-creating/
Read: Press release read.

78. **Netflix announcement, Netflix to Acquire Warner Bros. (5 December 2025)**. Netflix's agreement to acquire Warner Bros. Discovery's studios and streaming business for $72.0 billion equity value ($82.7 billion enterprise value), following the planned separation of Discovery Global.
https://about.netflix.com/news/netflix-to-acquire-warner-bros
Read: Announcement read.

79. **Skydance press release, Paramount Completes Acquisition of Warner Bros. Discovery (6 October 2026)**. Completion of Paramount's acquisition of Warner Bros. Discovery on 6 October 2026; the combined company (f/k/a Paramount Skydance Corporation) named Skydance, Class B shares trading on NYSE under the new ticker SKYD from that day; WBD shareholders received $31.01666668 per share in cash; unanimous approval from competition authorities covering nearly 70 jurisdictions.
https://ir.skydance.com/news-releases/news-release-details/paramount-completes-acquisition-warner-bros-discovery-creating
Read: Press release read in full; Reuters and AP completion reports checked.

80. **Deadline, Plaintiffs Make Last Ditch Effort To Halt Paramount-WBD Merger (5 October 2026)**. Supreme Court Justice Elena Kagan's 5 October 2026 denial, without comment, of the consumer plaintiffs' emergency application (No. 26A455) to halt the Paramount-Warner Bros. Discovery merger on the eve of its scheduled 6 October closing, after rejections by the district court and the Ninth Circuit.
https://deadline.com/2026/10/paramount-warner-bros-supreme-court-1237147278/
Read: Article read.

81. **Netflix 2026 proxy statement (DEF 14A), via StockTitan**. Netflix closed 2025 with over 325 million paid memberships, revenue of approximately $45.2 billion (up 16 per cent), operating margin of 29.5 per cent, and ad revenue above $1.5

billion.
https://www.stocktitan.net/sec-filings/NFLX/def-14a-netflix-inc-definitive-proxy-statement-35a985d6342f.html
Read: Proxy summary and figures read.

**82.** **Cineworld Group, Sites and Screens (December 2023)**. Cineworld (owner of Regal) operated 672 sites with 8,188 screens across 10 countries as of December 2023.
http://www.regalcineworld.com/en/our-cinemas/sites-and-screens
Read: Company page read.

**83.** **Wikipedia, PVR INOX**. PVR INOX formed by the 2023 merger of PVR Cinemas and INOX Leisure; as of May 2025 it operated 1,743 screens across 352 properties in 111 cities in India and Sri Lanka; PVR opened India's first modern multiplex at Saket, New Delhi, in 1997.
https://en.wikipedia.org/wiki/PVR_INOX
Read: Article read.

**84.** **Engadget on IMAX and Dolby Cinema formats**. IMAX's footprint of 1,829 screens worldwide by the end of 2025, its room geometry and laser projection, and an order backlog.
https://www.engadget.com/2193622/what-s-the-difference-between-dolby-cinema-and-imax/
Read: Article read.

### The Economics of a Movie

**85.** **Guinness World Records, Highest-grossing film at the global box office**. Avatar is the highest-grossing film worldwide at $2,923,706,026.
https://www.guinnessworldrecords.com/world-records/highest-box-office-film-gross
Read: Record page read.

### Bottlenecks

**86.** **U.S. Chamber of Commerce, Impacts of Digital Video Piracy (June 2019)**. An industry-sponsored estimate that global online video piracy costs the U.S. economy at least $29.2 billion a year; U.S. film and TV industry revenues of about $229 billion in 2017 and 927,000 directly supported jobs. (Industry-funded estimate, used as such.)

https://www.uschamber.com/assets/documents/Digital_Video_Piracy_June_2019.pdf
Read: Study summary read.

### Dependence and the Lost Reels

**87.** **U.S. National Archives, Motion Picture Film stability guidance**. Cellulose acetate's acidic deterioration ('vinegar syndrome'), its detection with A-D strips, isolation of affected films, and cold storage as the primary means of extending acetate film life.
https://www.archives.gov/preservation/holdings-maintenance/film-based/motion/stability
Read: Guidance page read.

**88.** **Library of Congress, Packard Campus for Audio-Visual Conservation - campus features**. The Packard Campus near Culpeper, Virginia: 6.3 million collection items (1.2 million moving image), below-freezing storage for film masters, nearly 90 miles of shelving and 124 nitrate vaults - the largest nitrate storage in the western hemisphere.
https://www.loc.gov/programs/audio-visual-conservation/about-this-program/campus-features/
Read: Campus features page read.

### Sidebar: Found in a Shed

**89.** **Turner Classic Movies, Metropolis: The Restoration**. The 2008 discovery in Buenos Aires' Museo del Cine of a 16mm duplicate negative of Metropolis with about 25 minutes of footage unseen since the 1927 Berlin premiere, and the 2010 Murnau Foundation restoration integrating it.
https://www.tcm.com/articles/345333/metropolis-the-restoration
Read: Restoration article read.

### Epilogue - The Next Reel

**90.** **Industrial Light & Magic, The Mandalorian (project page)**. The Mandalorian (Disney+, November 2019) and the first ILM StageCraft LED volume at Manhattan Beach Studios, rendering more than 60 photoreal virtual environments in real time with Unreal Engine alongside 4,000-plus traditional post VFX shots.
https://www.ilm.com/vfx/the-mandalorian/
Read: Project page read.

## Appendix C - A Working Glossary

**91. Sprocket School (projectionists' reference wiki), Sprockets**. The intermittent sprocket's function - pulling each frame into the aperture, resting while exposed, advancing again - and the continuous sprockets and loops that isolate it from feed and take-up tension.
https://www.sprocketschool.org/wiki/Sprockets
Read: Reference page read.

## Appendix D - The Movie by the Numbers

**92. Deadline on the MPA's 2019 annual report (March 2020)**. The MPA reported combined global entertainment spending (theatrical plus home and mobile) reaching a record $101 billion for 2019.
https://deadline.com/2020/03/mpaa-annual-report-box-office-worldwide-revenues-mobile-home-entertainment-1202879659/
Read: Article read.

## Appendix E - Filing The Movie on the Map

**93. GICS Map 2023 (MSCI/S&P structure, Computacenter mirror)**. GICS placement: Sector 50 Communication Services; Industry Group 5020 Media & Entertainment; Industry 502020 Entertainment; Sub-Industry 50202010 Movies & Entertainment, covering production, distribution and screening of movies and television, and streamed entertainment content.
https://www.computacenter.com/docs/default-source/supplier-pages/uk/gics_map_2023_en.pdf
Read: Structure table read.