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TECHNOLOGY & BUSINESS

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QUBE CINEMA & ANNAPURNA STUDIOS NEW VIRTUAL PRODUCTION STUDIO



VIRTUAL PRODUCTION AT CENTRESTAGE



INDIAN M&E SECTOR ON A ROLL

32nd Edition

BI 2023

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For more information, please contact:

Varun Gaba
Portfolio Director
T: +91 22 6216 5303
M: +91 99458 26427
E: varun.gaba@nm-india.com

Pranali Raut
Asst. Director - Projects
T: +91 22 6216 5313
M: +91 99458 26440
E: pranali.raut@nm-india.com

OFFICIAL PUBLICATIONS:



Manoj Madhavan
Content & Conference Producer
Editor (Broadcast & Film)
T: +91 22 6216 5312
M: +91 91673 31339
E: manoj.madhavan@nm-india.com

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Editor & Publisher:

MANOJ MADHAVAN

manoj.madhavan@nm-india.com

Production:

PRASHANT KARANGUTKAR

NÜRNBERG MESSE

Editorial & Advertising

NuernbergMesse India Pvt. Ltd.

312/313, A Wing, 3rd Floor, Dynasty Business Park, Andheri Kurla Road, Andheri (E), Mumbai – 400059.

Tel.: +91-22-6216 5312

Mob.: +91-91082 32956

Email: manoj.madhavan@nm-india.com


www.broadcastandfilm.com

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Editor MANOJ KUMAR MADHAVAN.

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German House 2, Nyaya Marg, Chanakyapuri, New Delhi - 110021



MANOJ MADHAVAN

Editor

Nearly 45 million Indian households held 99 million paid video subscriptions; generating ₹68, billion and representing over 60% of broadcasters' share of TV subscription revenues. Over 1,600 films were released in 2022, with theatrical revenues surpassing ₹100 billion. The animation and VFX segment grew by 29%, crossing ₹100 billion. Annapurna Studios & Qube Cinema set up the first virtual production studio in South of India.

manoj.madhavan@nm-india.com

From the Editor's Desk

The Media & Entertainment Industry is set for growth and will grow at 11.5% in 2023 to reach ₹2.34 trillion (\$29.2 billion), and estimated to touch ₹2.83 trillion (\$35.4 billion) by 2025.

The main drivers of business for Television is advertising and that experienced a 2% growth in 2022. The subscription revenue saw a decline by 4% and linear viewership fell 7% on year.

Digital advertising revenues rose 30%, totalling ₹499 billion and accounting for 48% of all advertising revenues. Digital subscriptions grew 27%, reaching ₹72 billion. Nearly 45 million Indian households held 99 million paid video subscriptions; generating ₹68, billion and representing over 60% of broadcasters' share of TV subscription revenues.

The film industry saw good revenues at the box office and experienced an 85% growth. Over 1,600 films were released in 2022, with theatrical revenues surpassing ₹100 billion.

The animation and VFX segment grew by 29%, crossing ₹100 billion for the first time as content production resumed and demand for services increased domestically and internationally.

The government is also taking a very proactive role, announcing its role to be facilitators and supporters rather than regulators.

The Indian film market is also adopting Virtual Production technology and the Telugu industry is leading the way with Annapurna Studios & Qube Cinema setting up the first virtual production studio in South of India.

The Indian media and entertainment industry is set to propel itself to new heights as the Indian M&E consumer base demographics is large and hungry for content and willing to pay for quality content. This will set the pace for the growth.

Manoj Madhavan - Editor

ZEE RENEWS PARTNERSHIP WITH META AND YOUTUBE



Zee Music Company has done the renewal of its licensing agreement with YouTube, and Meta (formerly known as Facebook). The deal will allow both platforms to continue offering high-quality music content from Zee Music Company's rich catalogue of 11,000+ songs.

YouTube remains one of the largest digital content platforms in the world, and the ongoing collaboration between the two companies is set to elevate the music experience for its users.

Anurag Bedi, Chief Business Officer – Zee Music Company said, "We are thrilled to continue our partnership with YouTube and Meta. Both platforms have proven to be invaluable partners for us, helping us reach new audiences and connect with fans in new and innovative ways. We look forward to working together to continue delivering high-quality music content to our shared users.

We aspire to continue pushing the boundaries, leveraging new revenue streams and collaborations in the ever-evolving digital music ecosystem."

TVU Networks Receives Four Industry Honors – NAB “Product of the Year,” TV Technology “Best of Show,” and PRODU “Technology Grand Prize” and “Remote Production” Award



TVU Networks, a pioneer in cloud-based workflow solutions for content creation and distribution, collected four technology awards last month: the “Product of the Year” Award from the NAB organization, “Technology Grand Prize” and “Remote Production Award” from the publishers of PRODU.com, and a “Best of Show” NAB award from TV Technology magazine.

Both the NAB organization “Product of the Year” and TV Technology’s “Best of Show” were honors bestowed on TVU RPS One – a new, all-in-one hybrid cloud and studio remote production solution. It combines synchronized, multi-camera encoding and transmission functionality in an ultra-compact and rugged form factor with six integrated 5G modems for wireless transmission.

TVU Networks won two awards from the Latin American media outlet, PRODU - the PRODU Technology Grand Prize and the Best Remote Production Deployment Award. Both awards were acknowledgement of TVU Networks’ collaboration with live A/V transport specialist Vívaro Video de Chile for the ESPN network. This was the first year a Technology Grand Prize was granted. The winner was selected from the entire pool of nominees as the company contributing the greatest technological advancement to content production in Latin America.

“It’s a true honor to win these awards from the NAB organization, TV Technology and PRODU,” said Paul Shen, CEO of TVU Networks. “The reception that TVU RPS One received during demonstrations at the NAB show was overwhelmingly positive. The awards are an affirmation of the direction we’ve taken in the development of cloud-native and hybrid technology for remote production. We greatly appreciate the honors from the NAB, TV Technology, and PRODU.

“Through our DevOps process, we collaborate closely with the customer’s production and operation team. It enabled the immediate implementation of customer feedback into the product design we showed at NAB 2023. This approach has helped us deliver cutting-edge technology and on-demand

HC ORDER ON OTT CONTENT



The Delhi High Court asked the government to inform it about the steps being taken for regulating content on social media and over-the-top (OTT) platforms.

The development follows an order by the Supreme Court on 6 March where it had directed the Union Ministry of Electronics and Information Technology (MeitY) to take steps to enforce its rules on content creation with regard to intermediaries such as social media and OTT platforms, as notified in the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules 2021 and to enact laws as necessary. On April 12, the government counsel asked for some time to file a reply. The matter has now been posted for hearing on April 25. The high court said framing rules and guidelines for content regulation on social media and OTT platforms need urgent attention. The court also underlined the need to take seriously the use of obscene language in the public domain which is open to children of tender age.

services to content creators faster and more efficiently. We don't bring out new designs on a scheduled basis. We're continually creating solutions that address our customers' most immediate challenges."

In 2022, TVU Networks introduced over 130 releases and several new hardware products and cloud services across its cloud and IP-based solutions.

The NAB Show Product of the Year Awards recognize some of the most significant and promising new products and technologies exhibited at the 2023 NAB Show. Winners were selected by a panel of industry experts in 15 categories. TV Technology's "Best of Show" Awards are judged by a panel of industry experts on the criteria of innovation, feature set, cost efficiency and performance in serving the industry. With eight categories, the PRODU Technology Awards recognize the top firms in the industry for their contribution to audiovisual production in Latin America.

TVU RPS One

In conjunction with TVU's robust live cloud production platform or TVU RPS decoders, TVU RPS One delivers an end-to-end cloud-based or on-prem live video production solution from field capture to distribution. RPS One's unique ability to transmit wirelessly to the Cloud and an on-prem decoder simultaneously enables production teams to create distinct programming using the same sources or set up a mirrored production environment for backup purposes.

TVU RPS One is the only product in its class that supports six, next generation embedded 5G sub-6 GHz modems. It boasts an innovative 5G MIMO antenna array that guarantees the seamless operation of all built-in 5G modems at peak performance simultaneously.

TVU RPS One Feature Highlights:

- ❖ Ultra-portable, battery-powered REMI solution
- ❖ Four-channel up to 1080P remote production from any location
- ❖ Up to six embedded 5G Sub 6GHz modems
- ❖ Advanced 5G antenna array for all six 5G modems
- ❖ Supports 5G SA and NSA modes
- ❖ Supports worldwide 5G, LTE, and 3G bands.
- ❖ Hybrid cloud/on-premise REMI production with frame synchronization
- ❖ Single channel return video (HDMI)
- ❖ Ultra-low latency (0.5 seconds)
- ❖ Resilient Inverse Statmux + (IS+) transmission
- ❖ Iso records all input channels simultaneously to local SD card for local or remote access
- ❖ Aggregates up to 12 cell/Ethernet/WiFi/satellite connections

Vizrt introduces new cloud products to better serve content creators everywhere

Enhancing audience engagement and cloud-based HTML5 graphics offerings, Vizrt portfolio now includes three new Flowics-powered products

Vizrt, the leader in real-time graphics and live production solutions for content creators, announced the availability of three new products – Viz Flowics, Viz Data Connectors, and Viz Social after integrating Flowics' unique offerings into the wider Vizrt product portfolio.

Vizrt's new solutions with the addition of Flowics' technologies, simplifies production workflows for all customers, from broadcasters to service providers,

INDIAN M&E TO TOUCH US\$ 70 BN



I&B minister stated that the Indian M&E sector is estimated to reach the target of US \$70 billion by the year 2030

Speaking at the CII Dakshin South India Media & Entertainment Summit -2023 in Chennai, Thakur stated, “The media and entertainment sector in India is at an inflection point and as the industry’s partner and facilitator, the Information & Broadcasting Ministry continues to undertake efforts to grow the sector to reach the target of US \$70 billion by the year 2030 from its current size of US \$30 billion as of today.

The Films Division of India, Directorate of Film Festivals, National Film Archive Of India, Children Film Society, India – under the umbrella of National Film Development Corporation of India (NFDC), will build better convergence and resource utilisation.

The government plans to invite filmmakers from across the world to come to India and collaborate with Indian filmmakers and work together for India to become the content hub of the world.

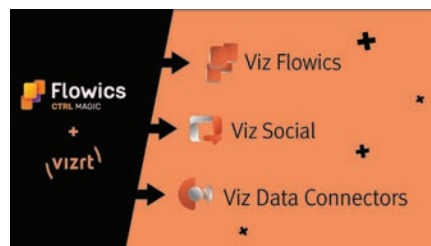
streamers, and YouTubers, showcasing the company’s evolving offerings due to the changing demands of content creators.

“Content creation is a fast-moving and fascinating realm that is continuously changing. By creating these new products post our acquisition of Flowics, we have optimized our end-to-end graphics portfolio. With Vizrt, you get everything from HTML5 graphics to cloud solutions, adaptive graphics, augmented reality, and AI-driven virtual sets. Creating quick, high-quality graphics has never been easier,” states Tehseen Akhtar, Deputy Global Head of Product Management.

Cloud-native HTML5 graphics platform

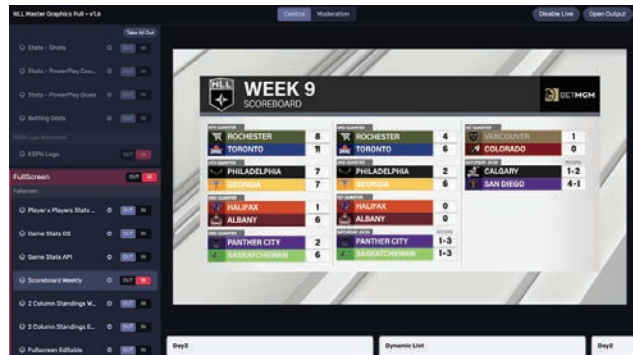
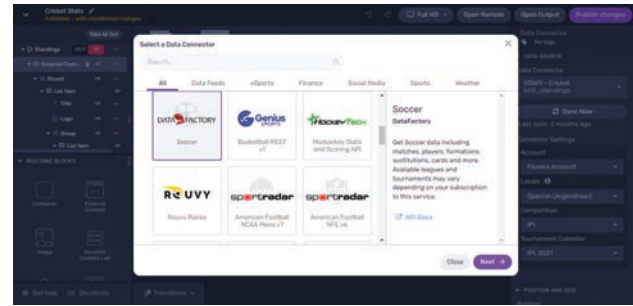
Flowics graphics becomes Viz Flowics, Vizrt’s cloud-native HTML5 graphics creation and rendering engine enhancing its end-to-end graphics offering. Viz Flowics has an extremely easy-to-use interface, even for beginners with no design background. The user-friendly web interface, with drag-and-drop features, provides everything needed to create broadcast-quality 2D graphics including animation tools, simplifying the process of creating and publishing customized cloud graphics and data-driven overlays from any browser.

Code-free data integrators



Viz Data Connectors is now a separate offering within the Vizrt portfolio, to integrate live data providers with any graphics engine (cloud and on-premises). As a completely code-free application, Viz Data Connectors simplifies and streamlines the process of integrating data from external data sources without the need for any custom data integration, an operator can from the point of logging in start creating data-driven graphics. Additionally, the introduction of the Graphics Data Bridge provides a secure and efficient transfer for integrating data from on-premise data sources to Viz Flowics graphics.

“Cloud and data-driven graphics are core to content creation. These new products reflect our continued commitment to providing innovative, high-quality, and effective real-time graphics and live production solutions for content creators, regardless of size. We will continue to develop and support data integrations not just within the Vizrt portfolio, but also include any graphics platforms and broadcast engine workflows,” says Gabriel Baños, co-founder of Flowics.



BALANCE BETWEEN THE CONSUMER AND SERVICE PROVIDER



सत्यमेव जयते

Ministry of Information & Broadcasting
Government of India

The Govt is seeking to smoothen things out in all the sectors. This was evident when Anil Bhardwaj, Director General, TCSR & Advisor (Broadcasting), TRAI, spelt out the regulator's role is consumer welfare and striking a balance between the interests of the service provider and the consumer at the FICCI Frames 2023 convention.

Bhardwaj highlighted balance industry growth, consumer welfare, and other intersectional concerns such as privacy, security and quality of service. Rahul Vatts, Chief Regulatory Officer, Airtel felt that the biggest stakeholders are the customers or the consumers as they are the focal point of that end who should get the best deal.

Mihir Rale, Chief Regional Counsel, Disney Star India said that the aim is that the media and entertainment ecosystem must contribute more to the GDP within constitutional frameworks.

Viz Data Connectors offers the most comprehensive catalog in the market of no-code links to live data sources, helping users rapidly turn around live graphics displaying information that audiences value, such as sports statistics, finance information, and weather details.

Additionally, the Flowics backend is powering the latest version of Viz Social, released in March of this year. This advanced version features a sleek and modern interface, increases speed, and simplicity, and offers users a modern suite of integrations with social media and messaging platforms. Users of Viz Social can also incorporate custom data from RSS and JSON feeds.

Viacom18 deploys Nevion contribution solution for the TATA IPL'23

Solution delivered in record time ahead of the start of the 2023 Indian topflight cricket season.



Nevion, a Sony Group Company and award-winning provider of virtualized media production solutions, announced that Viacom18, part of Network18 Group, one of India's most diversified media and entertainment (M&E) conglomerates, has deployed Nevion's contribution solution. The solution, delivered in just three weeks by Nevion, is being used for the live coverage of the hugely popular TATA Indian Premier League (IPL) of cricket.

Viacom18 owns the digital media rights for the TATA IPL to deliver on their OTT platform JioCinema. The media company required a solution to connect 12 stadiums to three of their studio locations, where the regional feeds are produced for the purpose of remote production and world feed contribution. The video and audio signals involved are pre-produced world feeds and individual camera feeds in both HD and UHD/4K, which need to be carried securely, reliably and in real-time over distances of up to 2,000km or 1,200 miles.

Viacom18 picked the Nevion solution that is fully redundant and offers hitless transport as per standard SMPTE 2022-7 to ensure signals are carried without interruption between locations. The solution is based on the software-defined media node Virtuoso and the media orchestration platform VideoIPath, both key building blocks of Sony's Networked Live offering.

Virtuoso is used to transport up to 16 HD (3G SDI) and 4 x UHD (12G SDI) from the stadiums, as well as 4 x HD (3G SDI) return feeds, over diversified

MX PLAYERS DEAL WITH PARAMOUNT



MX Player has collaborated with Paramount Global Content Distribution to bring its all-female sports entertainment show ‘WOW – Women Of Wrestling’ to Indian audiences.

MX Player has licensed the new season of the successful all-women wrestling series, which includes streaming rights to 52 episodes with each episode being of one-hour duration.

“At MX Player, we have a track record of presenting our audiences with the best in different genres. The first-of-its-kind sports deal with Paramount Global Content Distribution for the new season of ‘WOW - Women of Wrestling,’ is another step in that direction. We believe that a fascinating sports entertainment series about strong and inspiring women wrestlers will resonate with our audiences as the individual stories of the challenges, grit and determination of each of the WOW Superheroes are so powerful that it surely makes for a compelling watch,” said MX Player spokesperson.

“We are thrilled to bring the action-packed series WOW – Women of Wrestling to empower audiences throughout India,” says Lisa Kramer, President, International TV Licensing, and Paramount Global Content Distribution. “Viewers in the U.S. and abroad have been inspired by the athleticism of the WOW Superheroes and their uplifting stories.”

and redundant IP MPLS wide-area network (WAN). The video signals are compressed for transport using JPEG 2000 and JPEG XS to maintain high quality contribution feed with low latency.

VideoIPath initially provides the monitoring of network connectivity and signal flows. Its role will be extended in the next phases of the project to include network control and signals orchestration.

In addition, Nevia provided a variety of services, including on-site professional services to ensure the smooth deployment and running of this critical infrastructure supporting the very high-profile sports league.

S. Venkatraman, Head of C&D at Network18 explains: “We wanted to offer our millions of cricket fans a superlative UHD experience of the league with special regional adaption – both in terms of the languages and the focus of the games. This meant we had to design and build an infrastructure to match our ambitions, and in short time. We and our viewers are very happy with the outcome.”

Rajat Nigam, Group CTO, adds: “We had the vision of providing a never-before-experience of cricket to Indian viewers by providing live matches in UHD/4K format for the first time and in 12 languages including VR360 Cam experience. We had our own Video IP network of Jio and the solution which was developed in partnership with Nevia, gives us a high capacity and glitch-free video network from different locations in India. We have on an average more than 75 million consumers on our platform daily and have witnessed more than 24 million concurrent consumers on our OTT JioCinema”.

Hans Hasselback, Chief Commercial Officer at Nevia concludes: “This project is a perfect illustration of the importance of media networks in enabling business objectives. We were proud to have delivered that solution in record time and enjoyed the excellent collaboration we had with all involved in the project.”

NBCUNIVERSAL and VIACOM18’S JIOCINEMA

Enter Into An Extensive, Multi-year Partnership

Thousands of Hours of NBCUniversal Content, including Peacock Original Series and New Movies, Will be Available on “JioCinema Premium”, JioCinema’s Newly Announced SVOD Tier.

NBCUniversal



JioCinema

NBCUniversal (NBCU) and JioCinema, Viacom18’s streaming service, have entered into a multi-year partnership bringing thousands of hours of NBCU films and TV series to India. This partnership significantly bolsters JioCinema’s

program offering and ensures that their viewers will be able to enjoy titles from NBCU’s world-renowned content portfolio. That portfolio is fueled by Comcast NBCUniversal’s powerhouse production entities and brands, which includes Universal Television, UCP, Universal International Studios, Universal Television Alternative Studio, Sky Studios, DreamWorks Animation, Universal Pictures, Focus Features, Bravo, and more.

NBCU’s programming will live in a Peacock branded hub starting next month on JioCinema’s newly announced “JioCinema Premium” SVOD tier.

SONY RENEWS PARTNERSHIP



Sony bagged exclusive media rights, TV and digital of UEFA EURO 2024 and UEFA EURO 2028.

As part of the deal, the broadcaster has acquired the exclusive media rights for all the UEFA National Team competitions scheduled between 2022-2028 and will showcase the UEFA EURO 2024 & 2028, along with its European Qualifiers and Friendly Matches. The UEFA tournaments will be available exclusively on both linear television in the Indian subcontinent, including India, Afghanistan, Pakistan, Bangladesh, Bhutan, Nepal, Maldives, and Sri Lanka, as well as live-streamed on their ondemand OTT platform SonyLIV.

Sony Sports Network will also broadcast all the matches of the UEFA Nations League. The final act of the competition, the UEFA Nations League Finals 2023 will go underway from 14th June 2023 between Netherlands, Croatia, Spain, and Italy.

Here, viewers will have access to first-run series like Young Rock, a heartfelt comedy starring global superstar Dwayne Johnson that tells the story of his life and the people he's met along the way; riveting action thriller The Lazarus Project; and The Lovers, a darkly romantic comedic drama. Indian audiences can also enjoy Peacock Originals including Bel-Air, a dramatic reimagining of the '90s comedy series that starred Will Smith; Pitch Perfect: Bumper in Berlin, a spin-off series starring Adam Devine who reprises his character from the hit film; and The Calling, an investigative drama series from Emmy® winner David E. Kelley, directed and executive produced by Oscar® winner Barry Levinson, and co-composed by Oscar® winner Hans Zimmer and Steve Mazzaro. Critically acclaimed and fan favorite dramas and comedies from NBCU's vast library, including Downton Abbey, Suits, The Office, Parks and Recreation and The Mindy Project, are also a part of this deal.

Fans of reality television will also be able to indulge in all the drama, laughter, and emotional highs and lows found in NBCU's unscripted series. Encompassed in the deal are shows like the hugely popular The Real Housewives of Beverly Hills and Vanderpump Rules; in addition to Family Karma, which follows seven Indian-American friends as they navigate life, love, careers and expectations of their traditional families; and The Gentle Art of Swedish Death Cleaning, a transformational show – narrated by Amy Poehler – where three Swedes (an organizer, a designer and a psychologist), known as the 'Death Cleaners,' come to America to help people face mortality and remind us of all the ways we are alive.

Further contributing to JioCinema's impressive SVOD lineup at launch will be the streaming premieres of movies from the iconic Hollywood studio, which has already amassed more than \$2 billion at the global box office so far in 2023. This includes DreamWorks Animation's Oscar®-nominated Puss in Boots: The Last Wish, and the sci-fi horror film M3GAN, from James Wan (producer of The Conjuring, Annabelle) and Blumhouse. Joining these recent hits will be films in the blockbuster Jurassic, Bourne, Shrek, The Mummy and Pitch Perfect franchises.

Movies from the smash-hit Despicable Me/Minions and Fast franchises, including the newly released Fast X, as well as The Super Mario Bros. Movie and the highly anticipated IMAX-shot epic thriller Oppenheimer from Christopher Nolan, will also be heading to the service in the future.

This partnership leverages JioCinema's reach and expertise to introduce Indian audiences to the Peacock brand and NBCU's portfolio, while JioCinema cements its position as the largest OTT service in the market, now reinforced by an unprecedented volume of best-in-class films and series from NBCU.



ANNAPURNA STUDIOS AND QUBE CINEMA'S NEW VENTURE - STATE-OF-THE-ART VIRTUAL PRODUCTION STAGE IN HYDERABAD



Virtual Production will revolutionise the production of films and opening new creative avenues for filmmakers, as well as addressing some of the challenges that may pop up due to geographical or circumstantial constraints. Annapurna Studios & Qube Cinema's new virtual production venture will galvanise the Indian film industry into utilising this exciting new technology.

Annapurna Studios and Qube Cinema, two respected names in the Indian media business, have launched the ANR Virtual Production Stage in Hyderabad. This state-of-the-art ICVFX (In-Camera Visual Effects) facility promises to revolutionize the production process for filmmakers. The ANR Virtual Production Stage has been conducting tests since October 2022 and has already been used to shoot multiple movies, ads, and music videos. With its comprehensive workflow solution, the facility now offers filmmakers unprecedented flexibility and control, allowing them to achieve their creative goals without any limitations.

The technology used in the setup is cutting-edge, featuring a high brightness, curved LED wall spanning 60 ft in width and 20 ft in height, 2.3 mm dot-pitch, with ultra-high refresh rate and wide colour gamut. Top-of-the-line AOTO LED displays, state-of-the-art camera tracking using stYpe's RedSpy, and powerful, custom-built rendering systems using Unreal Engine allow for real-time rendering of complex photorealistic virtual locations. Filmmakers can now seamlessly blend real and virtual elements and shoot scenes in various locations worldwide without the need to physically relocate. They also have the ability to manipulate weather and lighting to their liking, giving them greater creative control.

Annapurna Studios is known for its infrastructure

and services it provides for the media and film industry. Starting as a traditional film studio and production house, today it has transformed into an international standard studio with end-to-end services for all media formats. 'Annapurna' as a legacy brand is established in production, distribution, infrastructure and is constantly endeavouring to bring new technologies and business models to the media industry.

Qube Cinema's success in transforming the media industry in India over the last three decades is a testament to the company's willingness and ability to identify and adopt technology that can greatly improve production and post-production workflows. The unique collaboration between Annapurna and Qube will leverage this experience to reimagine the production process for today's fast paced and demanding entertainment environment with virtual production, the next evolutionary step in content production.

"The successful launch of the ANR Virtual Production Stage is a testament to our commitment to delivering cutting-edge services to our clients," said Nagarjuna Akkineni of Annapurna Studios. "Our strength and experience in making movies and running studios in tandem with Qube's technical knowledge make this a great collaboration. Virtual production enables the creative mind to imagine without limit and then create it."



Jayendra Panchapakesan

“We are excited to collaborate with Annapurna Studios to bring this innovative technology to filmmakers in India and around the world,” said Jayendra Panchapakesan, Co-founder of Qube Cinema. *“This is the start of a new era in content production, and we are committed to creating an ecosystem that allows filmmakers to work in a highly efficient and cost-effective manner. Virtual production is the next big paradigm shift in content production, and we are thrilled to be leading this transformation.”*

The launch of the ANR Virtual Production Stage is a game-changer for the Indian film industry, and it will help India’s entertainment sector take a significant step forward in the global entertainment industry. The stage is the first world-class permanent ICVFX facility in India, offering significant cost savings in logistics and production, and it promises to empower filmmakers to tell their stories without being limited by location or space.

The YouTube links for the announcement video:
Annapurna Studios: <https://youtu.be/i880pAIGRcs>
Qube Studios: <https://youtu.be/91xNZo-lAfo>



Sri Akkineni Nageswara Rao

About Annapurna Studios

Annapurna Studios (www.annapurnastudios.com) is a fully integrated media & entertainment company.

Established in 1976 by Padma Vibhushan and Dada Saheb Phalke awardee, Sri Akkineni Nageswara Rao, a pioneer in the Telugu Film Industry, the studio offers facilities for the production of feature films, TV and digital shows, special events, advertising commercials, music videos and more.

The 22-acre studio in the heart of Hyderabad city is a unique one-stop film production studio.

A filmmaker can walk into Annapurna Studios with a script and walk out with a complete film. Having been in the entertainment Industry for over 70 years, participating in production, services & distribution, Annapurna Studios' film production arm has produced and financed over 50 feature films under the Annapurna banner while its television series air on primetime Telugu channels such as Zee TV and Star MAA. With the rise of streaming services,

Annapurna has expanded to the digital space, providing content for multiple leading platforms.

Annapurna's service offerings and facilities for the film and media industry are unparalleled.

Annapurna Studios provides first class infrastructure with 11 shooting floors and location facilities for the film and media industry, along with state-of-the-art TPN-certified, and Dolby approved post-production facilities. The services offered include data storage, video editing, audio dubbing, 4K colour grading, visual effects, world-class Dolby Atmos sound mixing and mastering.

The Annapurna group also lends its support to the Annapurna College of Film & Media, the first non-profit film school in India that offers government-accredited Bachelors, Masters, and MBA courses in Film and Media related subjects.

About Qube Cinema

Qube Cinema (www.qubecinema.com) is a pioneer in crafting end-to-end digital cinema technology and solutions.

Drawing on decades of experience in the cinema business, Qube provides a seamless digital environment across the industry, from filmmakers and post-production facilities to exhibitors and audiences.

Qube's products are used in every step of the filmmaking and exhibition process.

Qube Cinema's portfolio of products are powerful, flexible, reliable, and cost-effective, and include Qube Wire, a service for global content distribution; Qube XP, fourth generation DCI compliant digital cinema servers; QubeMaster, a family of digital cinema mastering software solutions; iCount, a camera-based occupancy measurement solution; Slydes, a system that automatically creates just-in-time Digital Cinema Packages; Cheers, a web service for movie audiences that offers personalised greetings cards on the big screen; Justickets, a cloud-based SaaS ticketing solution; and Moviebuff, a website and mobile apps for accurate movie information. The Qube product line is well-established globally, with thousands of installations serving 135 countries across the world.

Qube's service offerings are constantly evolving to cater to the needs of the global cinema business.

Qube has digital cinema operations in over 4,000 screens across India, masters over 1,800 movies each year across 6 locations in India, designs and delivers the most cost-efficient Premium Large Format screens under its EPIQ brand and operates a patented advertising network for central control of advertising with local control of movie selection as the Qube Cinema Network (QCN).

THE WORLD OF CONTENT - AN UPDATE

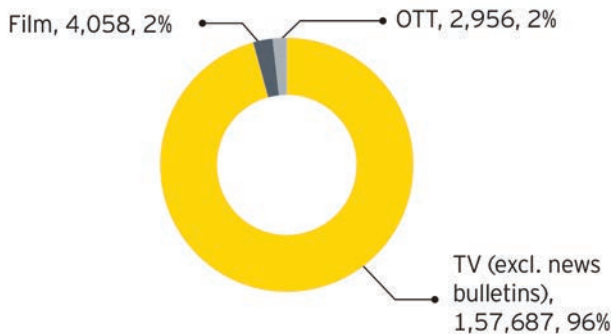
Content consumption across the OTT platforms in India is setting new paradigms. Top OTT players are continuing to invest in original content production, buoyed by an expansion in audience base and strong growth in content consumption.

The multiverse of Indian content

This section is based on a survey of 35 independent production houses and estimates from EY’s content production audit team

A total of 165,000 hours of content released for consumption in 2022

Hours of content released in 2022

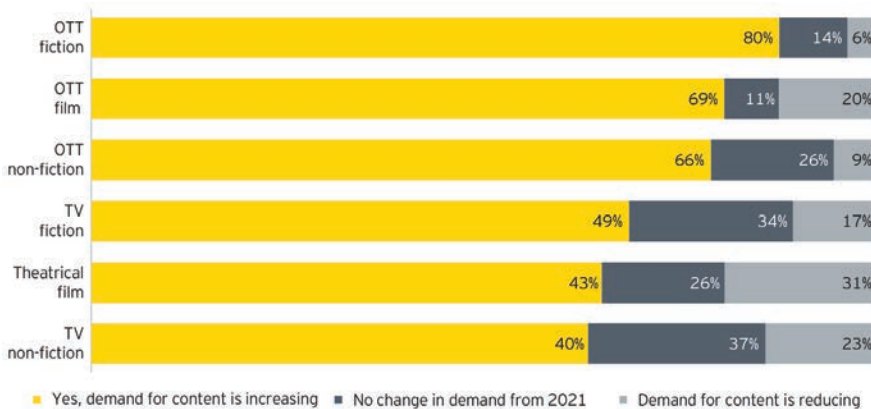


- ◆ Total content released across media platforms aggregated 165k hours in 2022, an increase of 3% over 2021
- ◆ Television remained the largest contributor to content production, at 96%
- ◆ Film content more than doubled in 2022, while OTT content increased 18% over 2021
- ◆ News bulletins aggregating 438k hours have been excluded from the above analysis

EY estimates | Includes content that was broadcast, released in theaters or on OTT; excludes unorganized creator economy, news bulletins, and short-form content

Demand remained robust across all types of content

Q. Do you believe that demand for content production increased in India in 2022?



EY-Producers Guild of India survey December 2022 | Percentage of respondents

- ◆ Survey respondents believed that content demand growth was led by OTT originals
- ◆ However, some believed that the demand for non-fiction content and films

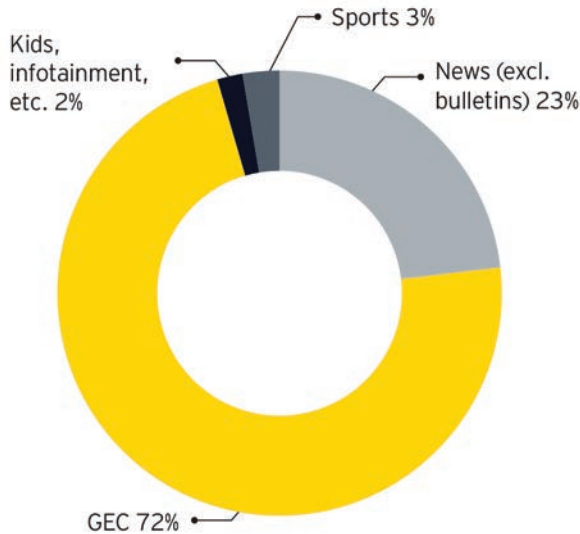
could have reduced, mainly due to high production costs, which broadcasters were wary of

- ◆ Given the quantum of premium content being produced, while production remained highly fragmented, the “media fund” and “IP consolidation” models, led by players like Jio Studios, T-Series, etc. gained scale and we expect the same to continue. These models imagine massive scale and consolidation without necessarily M&A, creative collaboration across an extended organisation, and distribution muscle

TV Content

At around 158,000 hours, TV comprised 96% of the total content produced

TV content volume by genre



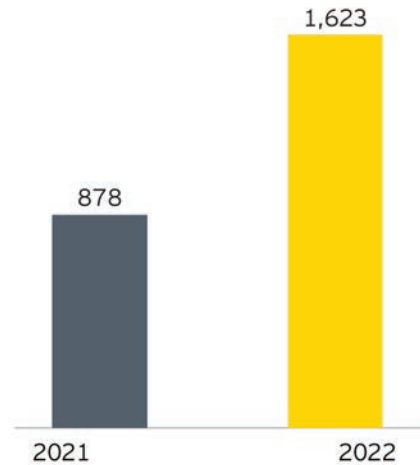
EY estimate | Excludes news bulletins, satellite films, etc., not produced for TV and includes dubbed content

- ◆ Over 114,000 hours (72%) of television content was produced for general entertainment channels, of which 20% to 25% was in Hindi while the remaining was in regional languages
- ◆ News channels produced over 36,000 hours of nonnews bulletins viz. news-linked content, documentaries or specials
- ◆ Share of sports has increased to 3% as live events recovered post the pandemic

Films

Theatrical releases almost doubled in 2022

Number of films released in India



Comscore (includes dubbed versions)

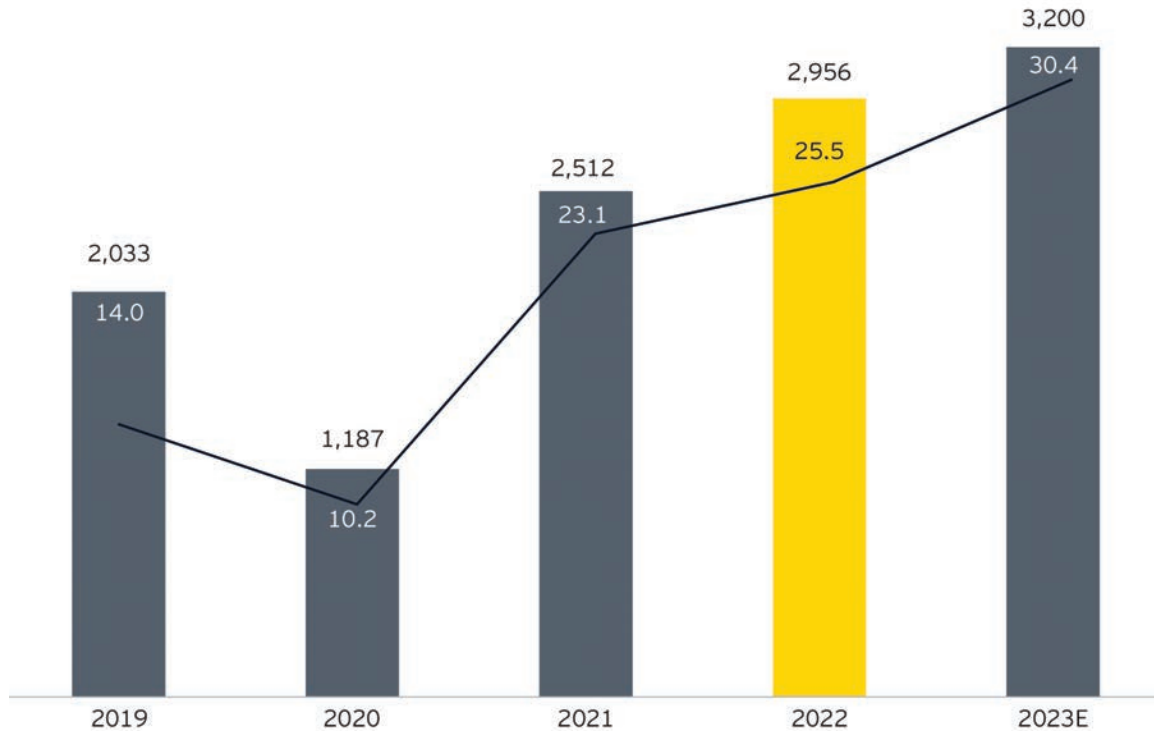
- ◆ Released films aggregated approximately 4,000 hours of content
- ◆ A majority of the 1,623 films that released in 2022 were produced in India, of which approximately 217 films were streamed on OTT platforms
- ◆ More than 100 films were directly released on OTT in 2022, mainly smaller budget movies
- ◆ 58% of the film releases belonged to southern regional languages (Telugu, Tamil, Malayalam, and Kannada) while just 12% were in Hindi



OTT originals

Almost 3,000 hours of original OTT content were produced in 2022

OTT content production estimates



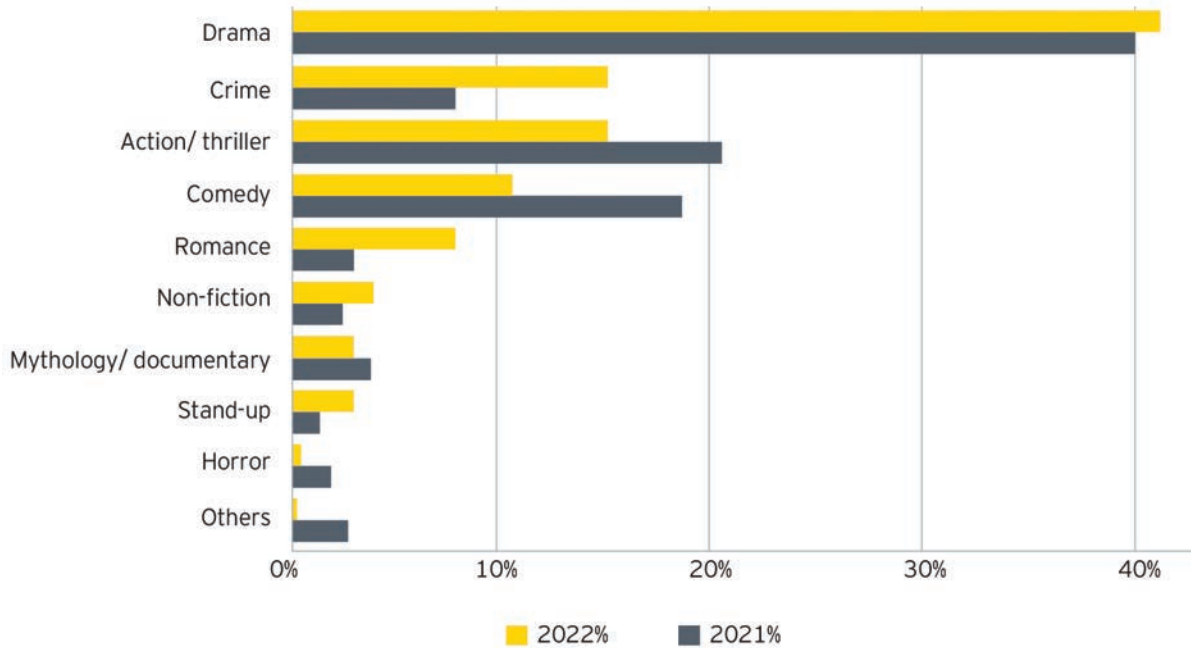
EY production audit team estimates | Excludes imported content and sports

- ◆ OTT content production reached an all-time high of 2,956 hours in 2022, an 18% growth over 2021
- ◆ The cost of production, however, increased by 11% compared to 2021
- ◆ Cost incurred on these originals increased to approximately INR25.5 billion, with an average price per hour of INR8.3 million
- ◆ We expect OTT original content to increase 8% in 2023 to 3,200 hours



Drama, crime and action continued to be the predominant genre on OTT

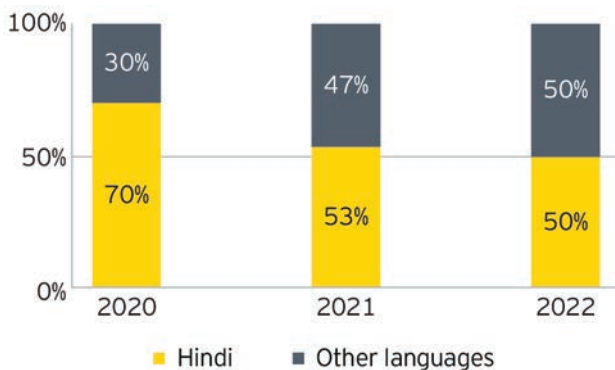
Genre-wise content releases on OTT



EY production audit team estimates | Excludes imported content

Share of regional OTT content reached an all-time high of 50%

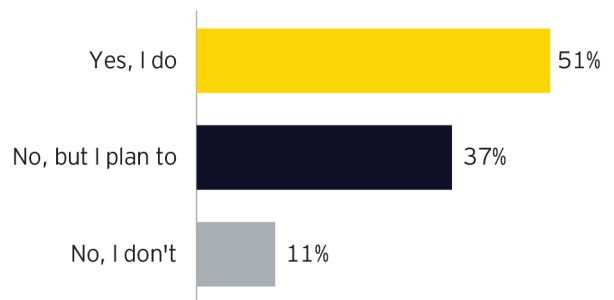
Titles produced by language



EY production audit team estimates | Excludes imported content

88% of respondents owned – or planned to own – at least some content IP

Q. Have you started creating owned IP, which you will license out to platforms?



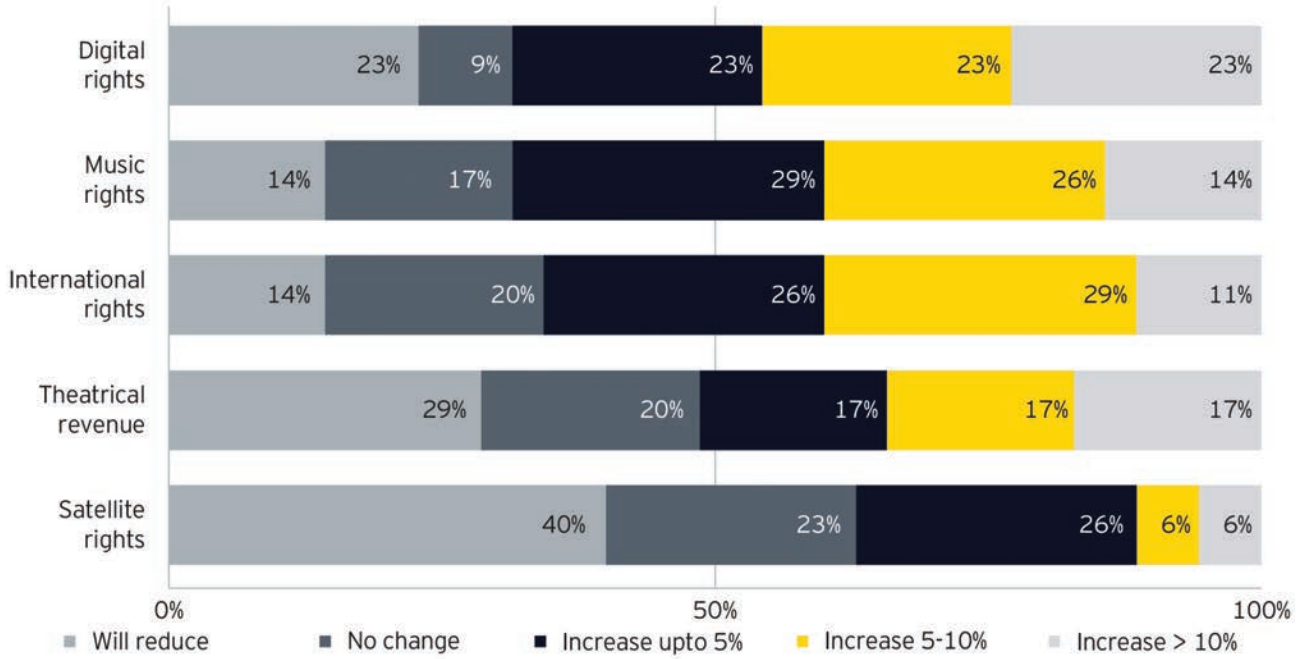
EY-Producers Guild of India survey December 2022 | Percentage of respondents

- ◆ 40% of film production house respondents owned 100% IP while 44% owned partial IP in the films they produced
- ◆ Just 32% of respondents who produced content for OTT platforms owned the IP to the content
- ◆ 80% of respondents who were producing TV content were operating on a work-for-hire basis

Content production trends

Digital, music and international rights will drive monetization in 2023

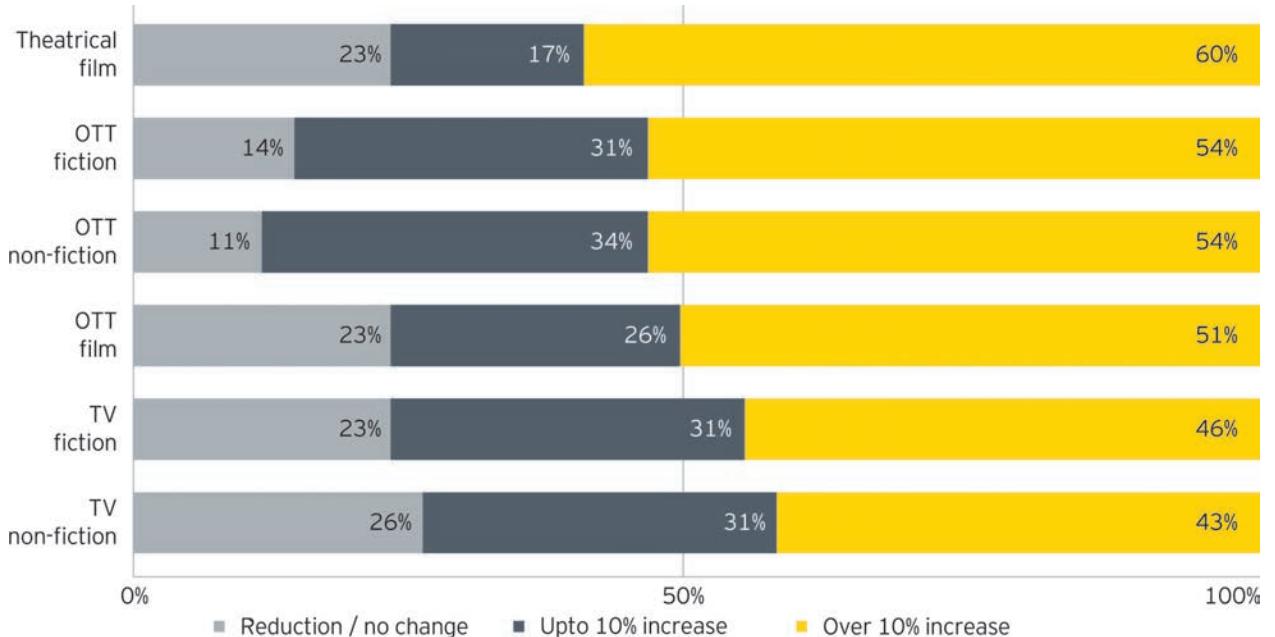
Q. How do you expect content monetization to change in 2023?



EY-Producers Guild of India survey December 2022 | Percentage of respondents

Drama, crime and action continued to be the predominant genre on OTT

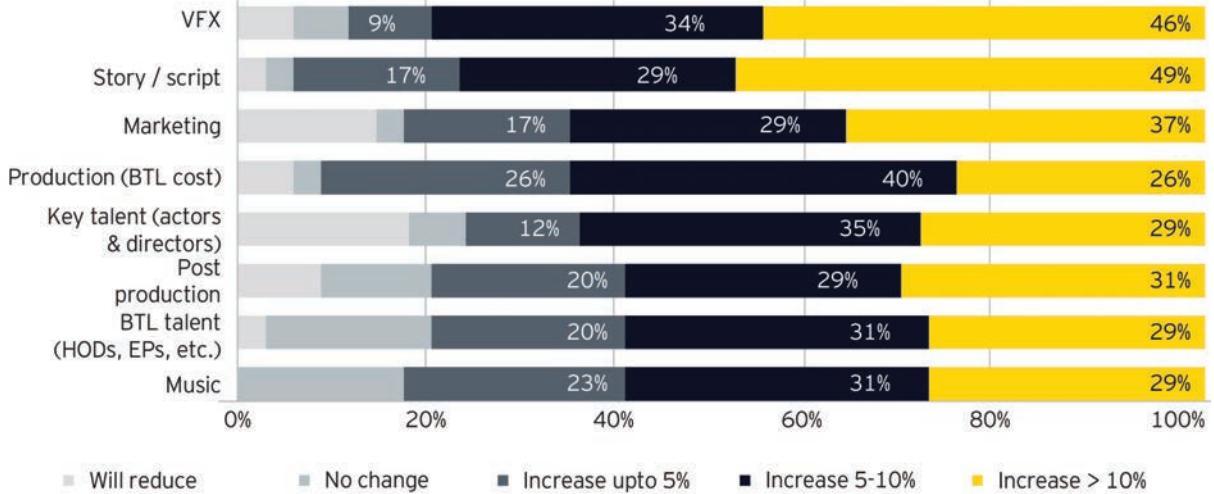
Genre-wise content releases on OTT



EY production audit team estimates | Excludes imported content

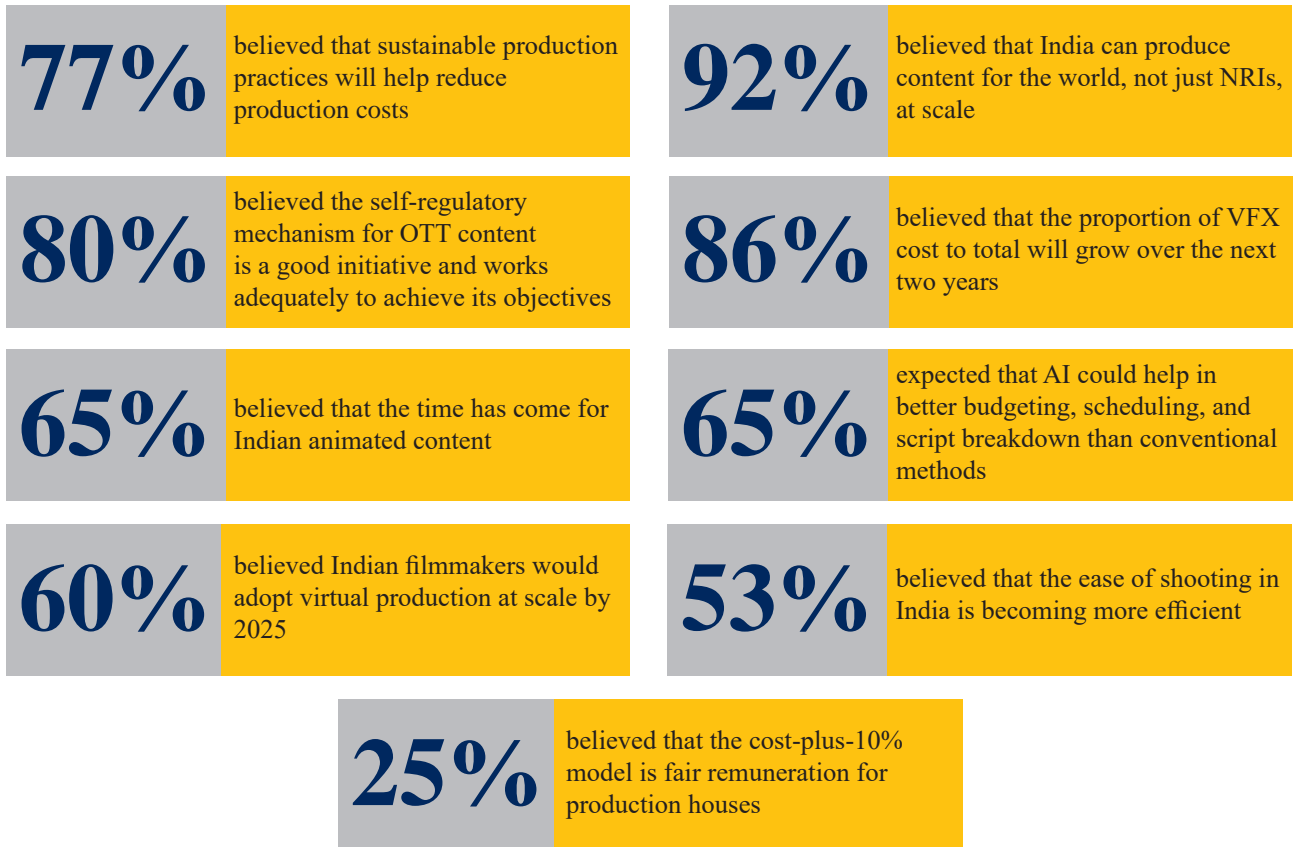
Content creation costs are expected to increase further in 2023

Q. How are content creation costs expected to change in 2023?



EY-Producers Guild of India survey December 2022 | Percentage of respondents

Into the mind of Indian content producers



Source: EY-FICCI Report ME Report

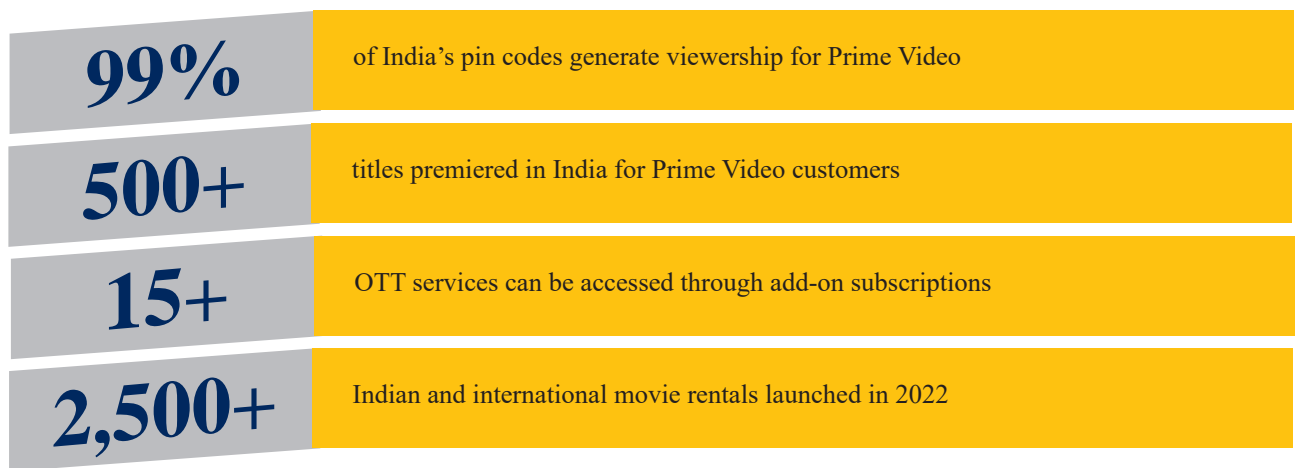


TRENDS

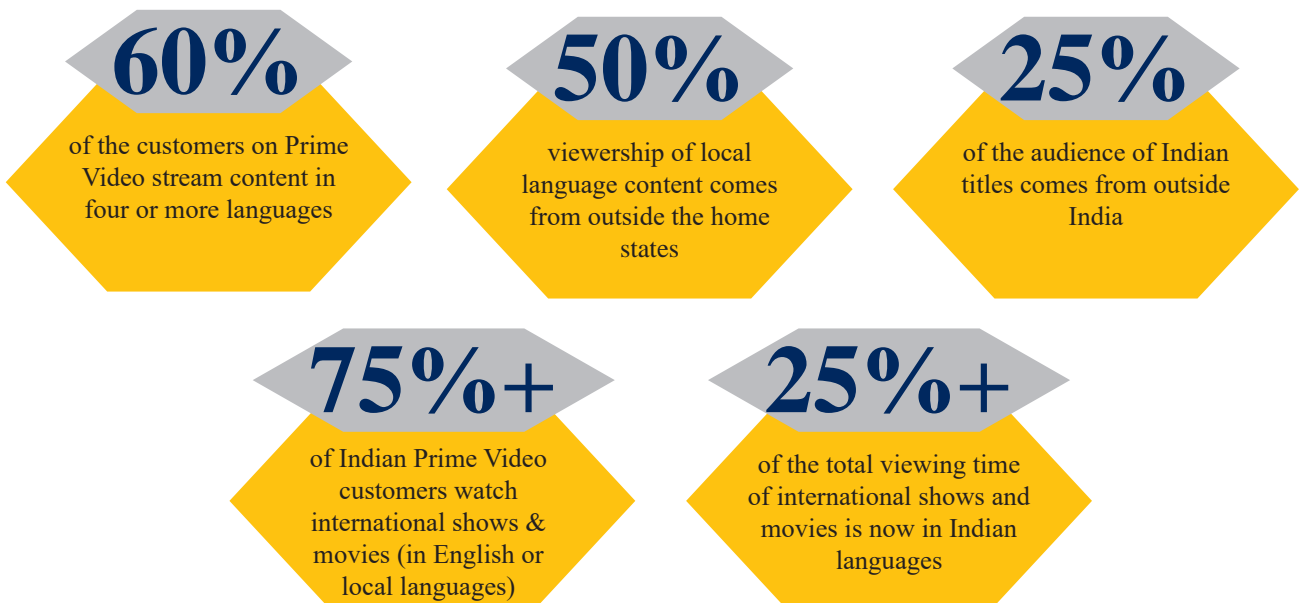
Prime Video India

Prime Video India today has amongst the highest proportion of Prime members who stream on the service each month

India continues to be a frontrunner, amongst international locales, in new customer adoption



Content on Prime Video continues to transcend geographical and linguistic borders



All data has been provided by Amazon Prime Video. It has not been validated by EY, and presented in summary form for representation purposes only.

Indian content garners national and international acclaim



Content on Prime Video continues to transcend geographical and linguistic borders

See all movies & TV shows on Prime Video



100+

original series and movies in various stages of production

50%

of launched and upcoming originals feature new talent

100+

unique creators that Prime Video works with

50%+

of the originals in production have women at HOD positions, and feature women in writers' rooms

NETFLIX

Netflix India

Netflix continued to focus on local content

100+

Netflix films and series launched in India since 2018

28

Netflix films and series launched in India in 2022

50%

Netflix films and series had a woman as a central character

~1/3

Netflix titles in 2022 had music that was popular and widely loved

Its Indian stories continued to perform globally in 2022...

47

Indian films and series featured in the Netflix global Top 10 for non-English titles

7/9

Netflix films from India featured in the global Top 10 for non-English films

**RRR (Hindi)
Gangubai-
Kathiawadi
Bhool Bhulaiyaa 2**

Reached #1 on the Global Top 10 non-English films list, generating 144 m hours of viewership

**9/10
weeks**

On an average, 9 out of every 10 weeks, Indian films featured in the Top 10 for non-English films

**28
countries**

In which Darlings was a Top 10 film, with over 32 million hours viewed, the highest for any Netflix India film

**12
countries**

In which Khakee: The Bihar Chapter was a Top 10 series, with over 17 million hours viewed, the highest for any Netflix India series

...and won numerous awards



Netflix members in India consumed a wide variety of local content in 2022...



...as well as international content across several languages



Source: EY-FICCI Report ME Report

CONTENT PRODUCTION EXPERT BYTES

Hear the leading content players on how they see the future of content evolving in India.



Siddharth Roy Kapur
Roy Kapur Films

This is a golden period for creators, performers and all those with the audio-visual industry. Data costs in India have dropped to the lowest in the world, and the low price point of streaming video content now meets the insatiable desire amongst our audiences for non-stop entertainment.



Abhimanyu Singh
Contiloe Pictures

As the demand for content increases the emphasis on storytelling will need to take centre stage. We will need to focus on quality of storytelling so that we can engage audiences better. India could be at an interesting threshold and positioned to create world class content for the local as well as the global market.



Sameer Nair
Applause Entertainment

Content is the fuel that powers the M&E sector. Advertising and Subscription revenue engines need content to run them and to allow them to scale to a billion screens. Whether long-form (films, OTT, TV) or shortform (snacking, social, UGC) or live (sport, events, news), content is what audiences pay for or watch for free when ad-supported. Content is and always will be the flywheel of this ginormous industry that is growing at a staggering pace with imminent 5G+ connectivity.



Madhu Bhojwani
Emmay Productions

We're in the midst of a content renaissance witnessing an exponential growth in quality and quantity. With evolving avenues for monetization and consumption, the future holds abundant promise for the whole ecosystem that will change existing models of modes/ media formats, cross-border collaborations, talent-engagement and IP ownership/ licensing.



Abhishek Kumar
Balaji Telefilms

Local and niche content tailored for segmented audiences will provide the next phase of growth while shortening the lifespan of original content value. At the same time there is convergence between platforms – OTTs now have started resembling satellite television of earlier in their multi-genre, mass content strategy and localization. As companies fortify their positions, strategic partnerships, mergers, and collaborations are likely to increase.



Nina Elavia Jaipuriya
Viacom 18

In the dynamic M&E industry, one constant is the opportunity to tell great stories. With new avenues, touchpoints & platforms incrementally adding value, we as storytellers must continue to invest in the ability to create innovative content while addressing emerging consumer cohorts & integrating technology to deliver seamless and holistic entertainment to our audiences.



Punit Misra
Zee Entertainment Enterprises

The biggest myth that is getting busted today, is that content is king. The viewer is the real lord, and content must serve this demanding lord. Sustained success will grace content teams who have the humility to draw inspiration from the real lives of their potential viewers, the skill to craft brilliant characters and stories based on this inspiration, and the pride in execution which strives to delight in every frame.



Sameer Gogate
BBC Studios
- India Productions

Audiences are accessing multiple screens simultaneously, making them increasingly distracted and spoiled for choice. This has fundamentally shifted their content consumption habits including having a voracious appetite for new types of content. Therefore, it is imperative that creators deliver entertaining, engaging and distinctive stories that cut through the clutter and are extremely relevant to their audiences.



Hemant Ruprell
Frames Productions

Unscripted reality is bound to evolve into more innovative and interactive forms of content. It will become essential for non-fiction content creators to create IPs that incorporate augmented and virtual reality technologies to make shows even more experiential and immersive. The viewers' reducing attention span, increased gamification and viewers' participation will be key drivers in sustaining viewership.



Aashish Singh
Lyca Productions

Booming demand for content, advancement in technology and new ways of storytelling will make the content watching experience more immersive and engaging, which will increase the demand for content across all platforms whether it is the cinema hall, home theatre or mobile phone. Language is not a barrier anymore and stories can emerge from anywhere to be watched everywhere.

Source: EY-FICCI Report ME Report

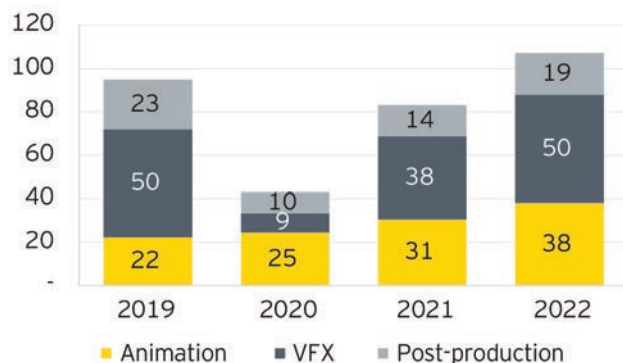
BUZZ FROM VFX & ANIMATION

The Indian animation and VFX industry grew to over INR 38 billion in 2022.

India's AVGC sector can emerge as a \$100-billion industry by 2030.

Animation and VFX

The segment grew 29% in 2022



	2019	2020	2021	2022
Animation	22	25	31	38
VFX	50	9	38	50
Post-production	23	10	14	19
Total	95	43	83	107

INR billion (gross of taxes) | EY estimates

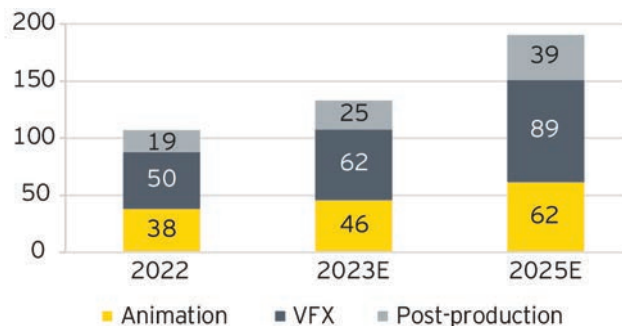
I. The animation and VFX segment exceeded its pre-COVID-19 levels in 2022 and reached INR107 billion

- ◆ Animation grew 25% over 2021 to reach INR38 billion in 2022, 71% higher than the pre-pandemic levels
 - ❖ Demand for animated content began to normalize to pre-pandemic levels, e.g., kids' viewership reduced by 13% over 2021
 - ❖ In contrast, dedicated kids' OTT platforms have grown and more options, especially in regional languages, have emerged
 - ❖ Stagnant growth rate of 2D animation finally gained momentum globally in 2022, which will have a positive impact on the Indian animation segment owing to the large stack of companies creating 2D content efficiently
 - ❖ Adoption of gaming engines like Unity and Unreal has been another game changer. These engines improve efficiencies and save up to 70% of rendering time, paving the way for more streamlined workflows
 - ❖ Service exports made up 35% to 40% of the total revenue for the animation segment in 2022

- ◆ VFX grew 30% to reach INR50 billion
 - ❖ From delivering back-end services only, India has now emerged as the provider of turnkey services - from pre-visualization to final rendering. This also means an increase in both value and volume of work coming India's way
 - ❖ Tentpole movies have always been heavy on VFX, and continue to be a major draw for audience across theaters as well as on OTT platforms globally
 - ❖ The major draw in OTT today is episodic content across platforms. This content draws heavily on VFX and is the second-largest addressable market today
 - ❖ There has been a 100% increase in high-budget films (INR100 crore or more) in India in 2022 over 2021, which increased the demand for domestic VFX services
 - ❖ Large budget films tend to spend 25% to 30% of the entire budget on VFX. The corresponding number for a low to mid-size film is 10% to 15%
 - ❖ Top global VFX players are turning to India to leverage the cost arbitrage that India continues to offer as sequels are generating a lower return in many cases. This will further increase the revenue from service exports
 - ❖ Studios are embracing technologies like virtual production, machine learning and artificial intelligence. This is helping streamline the workflow with quicker iterations, thus improving efficiencies further
 - ❖ Availability of capital for infrastructure and technology, and skilled talent are the two major challenges for growth in the segment
- ◆ Post-production grew 35% in 2022 to reach INR19 bn
 - ❖ There is a surge in dubbed and sub-titled theatrical releases as India becomes one market, with content appealing to audiences across state and language boundaries
 - ❖ Dubbed films increased from 15% of all releases pre-pandemic, to 30% in 2022
 - ❖ Over the last decade, the cost of dubbing for an average film has gone up from INR0.5 million to INR2 million to INR3 million
 - ❖ As content is monetized across more windows (SVOD, AVOD, theatrical, television, FTA, international, short video etc.), the demand for post-production services will continue to grow

II. The segment is expected to grow at a CAGR of 20% to 25% between 2022-2025 to reach INR190 billion

Estimated growth



INR billion (gross of taxes) | EY estimates

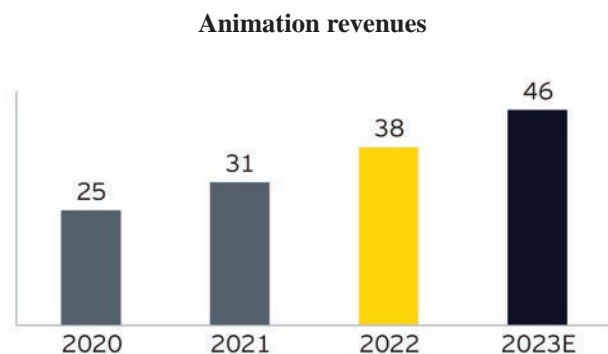
Key drivers for the projected growth include:

- ◆ Demand for tentpole movies and VFX heavy episodic content are expected to remain high
 - ❖ Globally, 50+ VFX-heavy movies are expected to be released in 2023 and early 2024
 - ❖ 1,000+ original titles are expected to be commissioned across the top 10 OTT platforms in the next few years
- ◆ Demand for domestic animated content to surge as Prasar Bharati is considering launching a children’s TV channel under Doordarshan
- ◆ Increased viewership of anime among millennials means there is an opportunity for high-quality adult-focused animated content
- ◆ Indian artists have extensive experience in developing international IPs and therefore are well placed to create home-grown IPs
- ◆ Gaming has seen tremendous growth during the pandemic and post-pandemic world and presents a fresh opportunity for monetization
- ◆ The metaverse will increase the demand for 3D modelling and real-time rendering, thereby creating additional job opportunities and encouraging more companies to enter this space
- ◆ Leveraging the proposals put forward by the AVGC task force to address critical challenges like heavy capital outlay, skilled talent shortage such as:
 - ❖ A national AVGC-XR Mission has been proposed to attract FDI investment, form co-production treaties, promote innovation in collaboration with international counterparts, and to develop a talent ecosystem
 - ❖ AVGC accelerators and innovation hubs are to be established in academic institutions as there is an acute shortage of tech artists; we estimate the need for a million artists if India is to step up to take advantage of the global opportunity
 - ❖ Democratize AVGC technologies by promoting subscription-based and subsidized pricing models for MSMEs and start-ups



Animation

The animation segment grew by 25% to reach INR38 billion in 2022



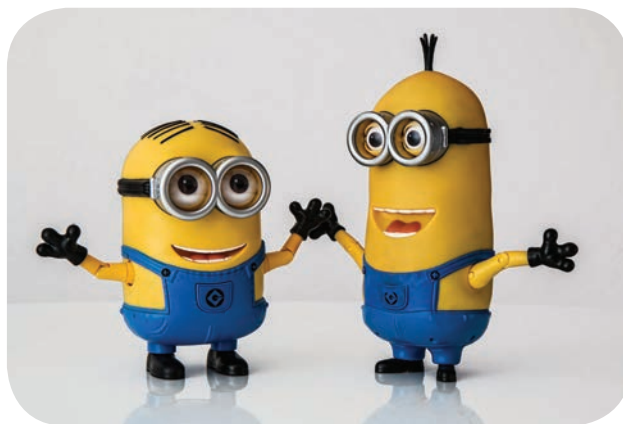
INR billion (gross of taxes) | EY estimates

I. Demand for animated content began to normalize to pre-pandemic levels:

- ◆ Kid's TV viewership reduced by 13% in 2022 over 2021 as school resumed and consequently, there was a slowdown in investment in new IPs and in new seasons for existing IPs
 - ❖ 10 new IPs were launched in 2022
 - ❖ The major IPs included Twinkle Sharma, Baby Little Singham and Pandeyji Phelwan
- ◆ YouTube remains the most preferred digital platform for kids. However, monthly views for the top kids content channels decreased in 2022 owing to:
 - ❖ The effect of the ad policy introduced in 2021 which reduced incentive for kid's content production
 - ❖ Life getting back to normal after the pandemic

II. In contrast, dedicated kids' OTT platforms have grown and more options, especially in regional languages, have emerged

- ◆ More than 10 OTT platforms provide kids with animated content in 2022, including Disney+, Netflix, Voot Kids, Sony Liv, Zee5 etc., across multiple languages
- ◆ The number of dedicated kids OTT platforms streaming content across multiple languages increased:
 - ❖ Softoons Animation launched its OTT platform Softoons Plus for Android users in 2022, with 500+ shows in more than five languages
 - ❖ QYOU Media India launched their 3rd IP channel in April 2022, a digital exclusive animated content channel that targets young viewers between the age group of 13 to 35 years



III. Demand for 2D animation increased globally

- ▶ 2D animation opportunity revived in 2022:
 - ❖ Disney is working on a traditional "hand-drawn" 2D animated film based on the French folk tale of Bluebeard and the recently announced Wish
 - ❖ Dreamworks latest heist comedy, "The Bad Guys," used 2D animation to subvert CG animation
- ▶ For the first time, Dreamworks is outsourcing 2D work to Indian animation studios
- ▶ 2D is a more cost-effective animation technique, which saves 40% to 50% of creation cost, and the demand for the same is expected to remain high for various types of content, especially in the Indian ad space and in emerging markets
- ▶ Stagnant growth rate of 2D animation finally gained momentum globally in 2022, which will have a positive impact on the Indian animation segment owing to the large number of companies creating 2D content in a cost-effective manner

IV. Gaming engines like Unity and Unreal were used more

- ▶ Unreal, originally a game engine, is now becoming a vital TV and film tool with more and more studios using it to reduce rendering time
 - ❖ Some studios were able to save approximately 90 minutes per frame, or 70% of the rendering time
- ▶ Artificial intelligence (AI) and machine learning (ML) offer many advantages to the animation and VFX segment, as there are so many repetitive and timeconsuming tasks that currently require operators to manage, sort and manipulate vast amounts of data
 - ❖ Charuvi Design Labs is adopting AI to provide more specialized content in the immersive space
- ▶ Machine learning was used for data capture, compositing, scripting and 3D; it has the potential to evolve current practices and pave the way for more streamlined workflows, allowing artists to spend more time on creative decisions

VFX

VFX segment grew 30% to reach INR50 billion



INR billion (gross of taxes) | EY estimates

I. VFX-heavy content witnessed high demand globally

◆ Tentpole movies, which were VFX-heavy, continued to draw audience across theaters as well as OTT platforms; the top 10 grossing films of 2022 were all VFX-heavy films:

Rank	Release	Worldwide revenue (US\$ billion)
1	Avatar: The Way of Water	2.20
2	Top Gun: Maverick	1.49
3	Jurassic World: Dominion	1.00
4	Doctor Strange in the Multiverse of Madness	0.96
5	Minions: The Rise of Gru	0.94
6	Black Panther: Wakanda Forever	0.86
7	The Batman	0.77
8	Thor: Love and Thunder	0.76
9	Water Gate Bridge	0.63
10	Puss in Boots: The Last Wish	0.48

- ◆ The share of VFX in a Hollywood big-budget movie continued to increase:
 - ❖ VFX budget for a film with a US\$100-million production budget or more rose to 30% to 35% from 25% to 30% previously
 - ❖ VFX share of mid to low-budget films has also increased by 5% to 10%
- ◆ In addition, OTT platforms continued to invest heavily in original content production globally, amounting to US\$60 billion in 2022
- ◆ Approximately 70% to 75% of the Indian VFX segment revenue came from service exports in 2022



II. Domestic film market also increased VFX spends

- ◆ 2022 recorded a 2x increase in the number of big budget movies (greater than or equal to INR1 billion) compared to 2021
- ◆ The share of VFX for a low to mid-size film was in the range of 10% to 15% of the budget, wherein for a big budget movie the share of VFX was 25% to 30%
 - ❖ 25% to 30% of the total production budget was allotted to VFX works for movies like Brahmastra, RRR and Adhi Purush
- ◆ Indian film makers have increased the number of shots in their high-budget films from a few hundred to 1,500 – 2,000
 - ❖ Brahmastra Part One: Shiva had over 4,500 VFX shots, potentially making it the Indian film with the most VFX shots till date¹⁴
 - ❖ SS Raja Mouli’s RRR had a total of 2,800 VFX shots. 70% to 80% of the shots were done using CGI

III. Top global VFX players expanded into India to leverage the cost arbitrage that India continues to offer

- ◆ For a global VFX player having operations in India, Indian VFX artists cost only one-eighth of the cost incurred on hiring artists in the UK or North America
- ◆ In the last two years alone, the Indian visual effects industry has created 60,000 jobs, with studios like MPC in Bengaluru going for an extensive hiring spree
- ◆ In 2022, five global VFX players, including ILM, have either started operations or announced their entry into the Indian market:
 - ❖ Industrial Light & Magic (ILM) opened its new office in Mumbai. ILM plans to acquire and retain over 500 skilled talents in India over the next three years
 - ❖ UK-based Cinesite group acquired a majority stake in Assemblage Entertainment, headquartered in Mumbai
 - ❖ Detroit-headquartered US tech firm, Pi Square Technologies, opened its global animation and VFX studio in Hyderabad
 - ❖ Ghost VFX, Streamland media’s visual effects division, has announced it will open a new 32,000-square-foot studio in Pune, Maharashtra, India, in early 2023 to meet the growing needs of filmmakers worldwide
 - ❖ FOLKS, a Fuse Group visual effects company, has launched its 35000+ square foot facility in Mumbai, India. The facility will staff more than 250 employees

IV. Studios embraced technologies like virtual production, AI and ML to streamline workflows and allow quicker iterations

- ◆ Volume of outsourced work and the complexity levels of the sequences delivered in India have increased considerably compared to what it was a decade ago
- ◆ Hence, to streamline the creative and technical process and allow quicker iterations for a client, VFX players are embracing artificial intelligence, Machine learning and deep learning
- ◆ Previously, less complex works like rotoscoping, paint and match moving (RPM) were delivered from India. Now, 85%- to 90% of the world’s RPM works are done in India
- ◆ With the rise of the hybrid working model, improvement in cloud computing, which enables remote work, made it even more possible for people across geographies to work in the same pipeline

- ◆ More virtual production studios were set up in 2022:
 - ❖ K. Sera Sera and Vikram Bhatt have opened India’s first virtual production studio on the Dahisar Highway, Mumbai, spread over 50,000 sq. ft.
 - ❖ The Chennai-based film technology company Qube Cinema has teamed up with actor Akkineni Nagarjuna’s Annapurna Studios and launched a fullservice virtual production stage in Hyderabad

V. Availability of skilled talent was the key challenge

- ◆ The median age of artists in the Indian VFX and animation segment is 23 to 25 years with 85% to 90% of these artists conditioned on the job
- ◆ The attrition rate in the VFX segment in 2022 was 25% to 30%. High poaching of mid-level talent was also observed in the segment
- ◆ Almost all industry leaders we interviewed were concerned about the inability to find technically skilled employees to meet the opportunities provided by the high global and domestic demand for content
- ◆ Hence companies implemented training programs to acquire, retain and up-skill talent:
 - ❖ Phantom VFX took several initiatives like visiting university campuses and grooming talent by taking on board people with good skills in art or technology for three-month-long paid training programs
 - ❖ With a team of 75 people, the studio Hoop VFX started a training program which gave on-the-job training to college graduates and provided them with an opportunity to build a career in the VFX segment
 - ❖ In 2022, Framestore’s renowned global accelerator program, Launchpad Pro, was launched. This platform is aimed at bringing in more VFX aspirants into the industry



Source: EY-FICCI Report ME Report

ANIMATION & VFX EXPERT BYTES

The animation and VFX Gurus share their insights on the growth of AVGC and its future in India.



Biren Ghose
Technicolor Creative Studios

India has made the pivot from being a production house with basic skills to offering “end-to-end” capabilities at the high end of computer graphics driven content creation. It has overcome the proverbial label of being a ‘back-end’ services provider, to the point where even the research software development with new tools and technologies are being innovated locally. India is looking to double its global market share over the next 4-5 years.



Ashish SK
Punnaryug Artvision

The Government’s AVGC TASK Force and several state governments are ahead of the curve with AVGC-XR policies that will spur growth of the segment. Very soon we will have AVGC-XR focused PE funds for India to further fuel the growth in this segment and take Indian creativity global!



Rahul Puri
Mukta Arts

Technologies have emerged in the past decade like virtual production, photoreal animation & VFX, photogrammetry, volumetric capture and the use of game engines in filmmaking, which have all enabled greater viewer immersion. It is now up to the filmed entertainment industry on how we educate ourselves & use these tools to enhance viewer immersion.



Megha Tata
Cosmos Maya

With fragmentation of content consumption continuing, clutter breaking content will play a bigger role in the coming years. Animation is one such medium which will be seen in new forms. As the industry continues to evolve and mature, we can expect to see even more innovative and immersive content from Indian animation and VFX studios, positioning them as major players on the global stage.



P. Jayakumar
Toonz Media Group

The potential of the Indian Animation & VFX sector is recognised globally, and the policy intervention measures undertaken recently by the government will make India an AVGC hub of the world in the years to come.



Suchit Mukherjee
Famulus Media

The more than promising future for AVGC in India will be driven by the right infrastructural, financial and work allocation reforms, by standardising industry norms at par with those set for the world, with country-specific benefits still being offered for outsourcing models.



Ashish Thapar
Hitech Animation

Many animation studios, initially focused on servicing the domestic market, are now aiming to collaborate with international clients, and this will further push the envelope on quality. As animation becomes state of the art, Indian content is expected to compete at par with international shows soon enough.



Viren Patil
Zebu Animation Studios

The AVGC sector in India is on the cusp of major growth, with new real-time technologies emerging, a rapidly growing digital economy, and a rising demand for high-quality content. The sector is expected to generate significant employment and business opportunities in the coming years.



Anil Wanvari
AnimationXpress.com

Indian studios have risen upto the task of high end requirements from Hollywood, Europe and South East Asia. Most of the big players are planning to currently have their studios here. Right now it is amongst the leaders; doing outsourcing as well as domestic productions with high-end animation, visual effects, virtual productions, XR, VR, AR, MR, etc.



Hitesh Shah
BOT FX

VFX prep service skills are already strong and in large supply today in India. When the talent pool and skill level in Comp and CG reach similar levels, enormous new possibilities will open up for India - it will no longer be considered an outsourcing hub, but a VFX hub the way London, Vancouver, and Montreal are today.



Arjun Madhavan
Assemblage Entertainment

India is on a strong arc of transforming its Animation, VFX and post-production offerings from a cost arbitrage play to a value arbitrage ecosystem.



Anant Roongta
Famous Studios

Studios in India have the opportunity to tap world class talent from across the country and take India to the world stage. We must focus on longevity and sustainability.



Vikas Kumar
Digitoonz

Movies these days actively use animation and VFX which is another reason why both industries are booming and have the potential to grow in future. The Animation industry has a very wide scope of expansion in the coming future also due to emergence of metaverse.

Source: EY-FICCI Report ME Report

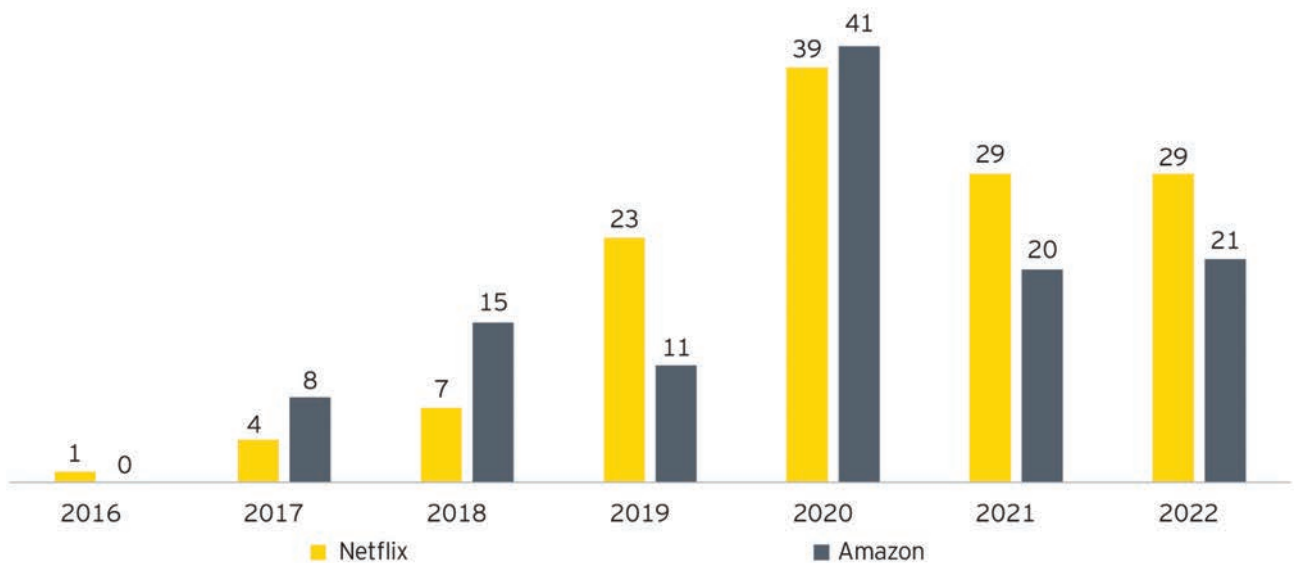
EVOLVING M&E FUTURE TECHNOLOGIES

The world of Media & Entertainment is under growing a major transformation with futuristic technologies like Artificial Intelligence, 5G, Connected TV, & Virtual Production technologies driving the revolution. A sneak peek in the world of future technologies in the M&E Sector.

India M&E tech opportunity

India will buck the trend of slowing investment in streaming content

Netflix and Amazon original productions in India by year of first transmission, 2016-2022

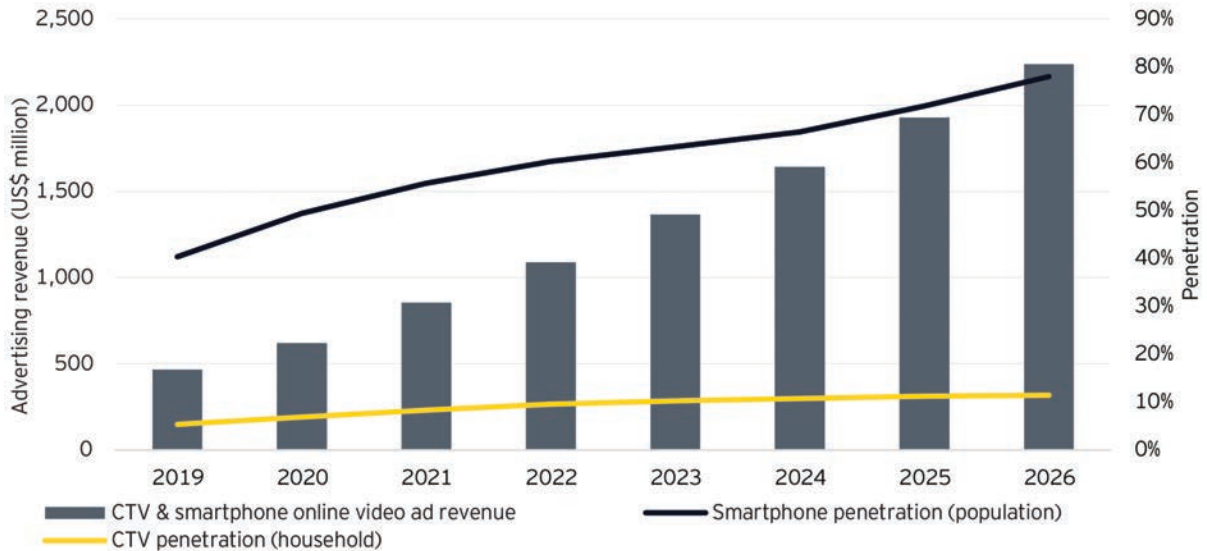


- ◆ While many observers think that the growth in content production in recent years will run out of steam in 2023, India presents a different scenario. India is a key market for Amazon, Netflix, and Disney
- ◆ All three companies are heavily investing in Indian content. Amazon Prime Video has announced that it will double its investment in Indian content over the next five years
- ◆ In Q2 2022, the local Netflix original *Gangubai Kathiawadi* was number one with 9.09 million viewers, beating *Stranger Things* into second place. This shows that Indian content is typically the first choice of local viewers. Hence, India should remain unaffected by any slowdown in content investment



Connected TV makers are becoming key gatekeepers – and monetizers – of content

India CTV and smartphone video advertising revenue and penetration, 2019-2026

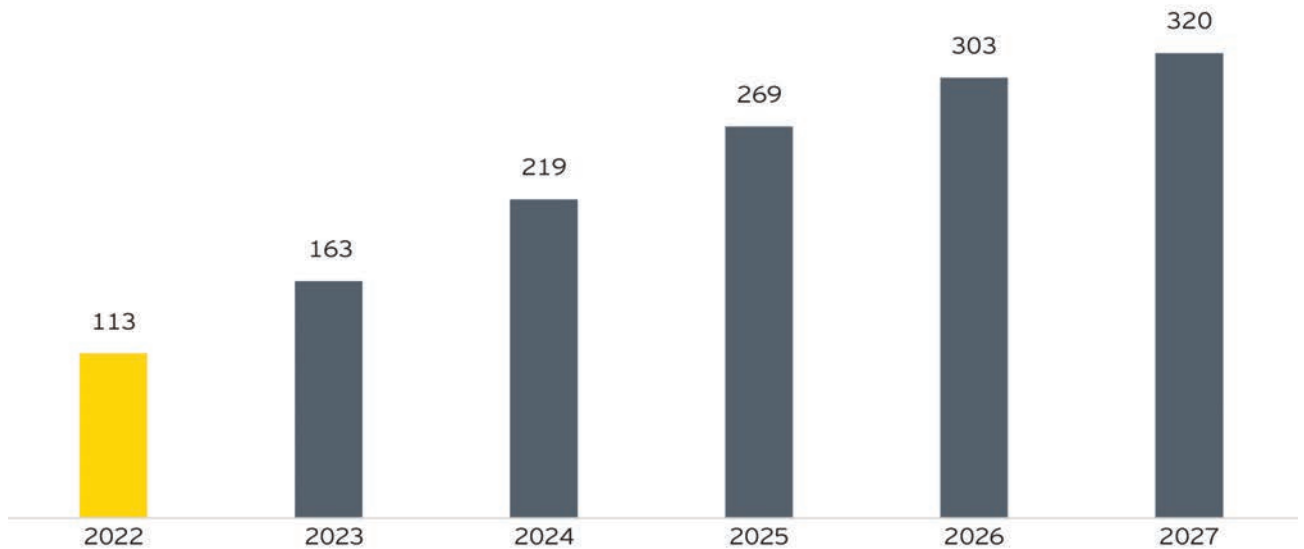


- ◆ Connected TV (CTV) devices represent a growing advertising opportunity thanks to the expansion of free ad-supported streaming TV (FAST) services and the continued growth of premium online video
- ◆ However, CTV ownership in India is far behind other markets with only 10% of homes owning a CTV set, due to the growth of adoption and usage of smartphones, which had a 60% penetration of population in 2022 that could increase up to 80% in 2026
- ◆ This is also reflected in the advertising market share with smartphones accounting for 60% of online video ad revenue and CTV less than 5%
- ◆ As online video consumption on CTVs increases, manufacturers are copying pay-TV operator strategies in controlling the electronic program guide (EPG) and user interface (UI) of their devices. This is in addition to funneling users to their own ad-supported online video services – such as Samsung TV Plus, which launched in India in March 2021
- ◆ This provides opportunities for new ad inventory across the CTV UI and within manufacturer-owned OTT video apps. As advertising becomes more important to CTV manufacturers, many have also invested strongly in ad tech
- ◆ This pivot towards advertising will play a key role in bolstering CTV penetration in India by helping manufacturers to offer lower-priced devices that a wider base of consumers can afford
- ◆ By 2027, Omdia expects CTV advertising revenues in India to be worth US\$300 million, a 4X growth from 2022



5G will enhance M&E for consumers and industry stakeholders

M&E opportunity (US\$ million) for private LTE and 5G networks, 2022-2027

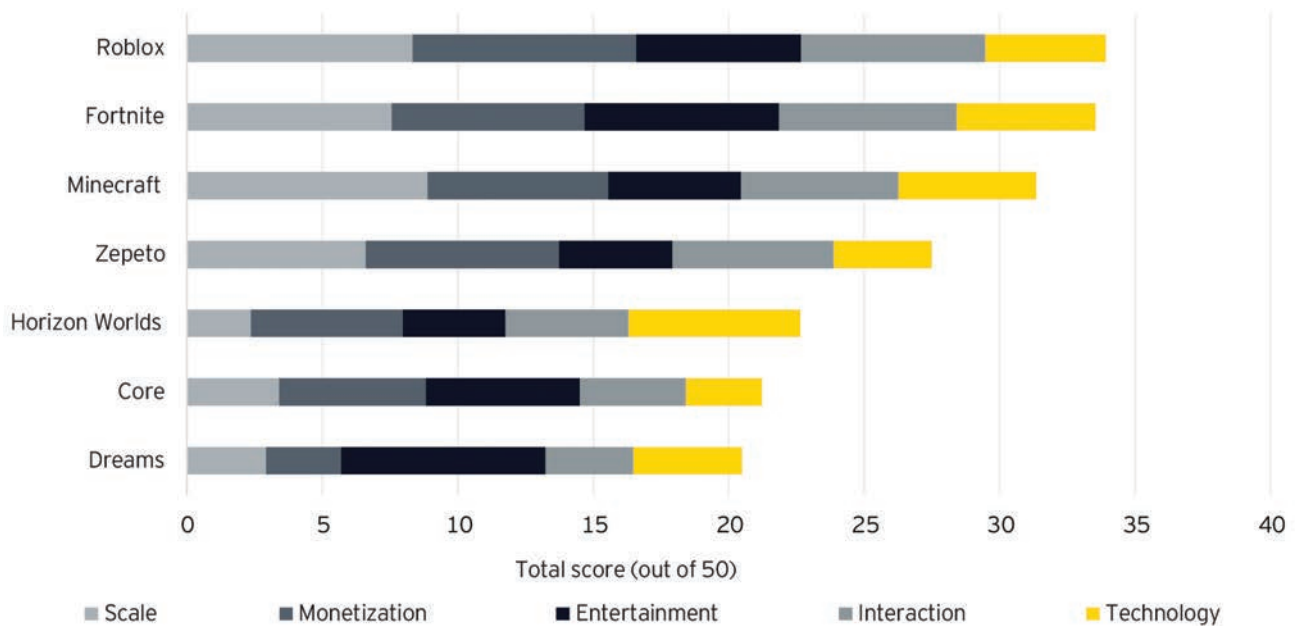


- ◆ Mobile operators are in the middle of deploying 5G across their networks with the latest generation of the 3GPP standard having the potential to make a more far-reaching impact on the M&E landscape than ever before
- ◆ Enhanced mobile broadband (eMBB) will improve the experience of consuming traditional media such as music, video and games over mobile networks by increasing data capacity and coverage, and reducing latency
- ◆ The increased bandwidth along with reduced latency will also improve the delivery of augmented reality (AR) and virtual reality (VR) experiences
- ◆ Network slicing will offer M&E sector stakeholders dedicated localized mobile networks with high capacity and ultra-low latency
- ◆ M&E sector spend on such private mobile networks will increase from US\$113 million in 2022 to \$320 million in 2027
- ◆ Lowering the cost barrier for live production will increase the variety of live content available to consumers, enabling remote production services and streamlining operations
- ◆ 5G release 17 includes multicast and broadcast services (MBS) designed to improve TV and video distribution
- ◆ M&E stakeholders must pay attention to 5G releases to benefit from its potential in India, where mobile Internet is essential for online media consumption



Metaverse: A long-term vision with short-term opportunities

Omdia Games Metaverse Benchmark ratings by game and parameter, July 2022



- ◆ The metaverse is a popular topic, and companies are exploring its potential, with some creating their own metaverse platforms, while others are experimenting with metaverse games to reach consumers
- ◆ The fully immersive vision of the metaverse favoured by companies like Meta is still over a decade away
- ◆ Indian companies are also exploring the metaverse, with Tech Mahindra, Volvo Car India, and Hyundai Motor India among those taking early steps
- ◆ Metaverse games like Roblox and Fortnite are offering opportunities for companies to engage with consumers, drive sales, and reach desirable demographics
- ◆ Brands are increasingly directing marketing budgets towards these games to drive engagement and sales
- ◆ Clothing brands like FabIndia or Mufti could benefit from exploring metaverse games partnerships to sell “skins” and reach a wider audience
- ◆ There is much potential in the metaverse, and companies worldwide are looking to fund or acquire businesses to help them build localised products and improve their position internationally

Contributors:

- ◆ Daniel Simmons, Research Director, Media Delivery
- ◆ David Tett, Principal Analyst, Addressable Consumer Devices
- ◆ Dom Tait, Research Director, Games, Music, Consumer Platforms & AI
- ◆ Eden Zoller, Chief Analyst, Consumer Platforms & AI
- ◆ Maria Rua Aguete, Senior Research Director, Media & Entertainment
- ◆ Matthew Bailey, Principal Analyst, Advertising
- ◆ Rob Gallagher, Research VP, Media & Entertainment
- ◆ Tim Westcott, Senior Principal Analyst, Digital Content & Channels

Source: EY-FICCI Report ME Report

INDIAN M&E EXPERT BYTES

Media & Entertainment Gurus share their insights on the growth of its future technology in India.



Rajat Nigam
Network 18

Technology has empowered creativity for generation and consumption of Content. Pluralism of formats, standards, protocols and platforms have enhanced the spread of content offerings, be it for News, Entertainment or Sports ... you can watch the upcoming IPL in 25 different live content streams!



Raj Mohan Srinivasan
Sony Pictures Networks India

Our moment of truth is here. The consumer is no longer passive - technology is immersing them spatially into content, challenging storytelling itself. Yet, monetisation models continue to remain elusive.



Nitin Mittal
Zee Entertainment Enterprises

We'll soon see two sets of M&E winners. One set will be highly scaled direct-to-consumer services giants that attract and keep hundreds of millions of subscribers, and operate profitably. The other set will be the super aggregators that solve the content discovery and pricing problems by bundling services around common platforms that provide unified subscription and billing, as well as cross-channel content recommendations.



Rajeev Batra
Times Group

The pandemic democratized digital transformation at an unimaginable pace, and barriers around technology adoption were obliterated overnight. We are in the throes of the next wave of technology evolution - generative and conversational AI, which promises to transform the way we work - be it creating content, doing customer services, or innovating in any domain!

Source: EY-FICCI Report ME Report



INDEPENDENT FEATURE FIRST SHOT & FINISHED WITH BLACKMAGIC DESIGN

Blackmagic Design announced that the independent feature film “FIRST” was shot with Blackmagic Design cameras, and edited, completed visual effects and graded using DaVinci Resolve Studio editing, grading, visual effects (VFX) and audio post production software. The film, codirected and coproduced by Jahmela Yarbrough and Brandon Yarbrough, was shot by Cinematographer Will Novy. The film recently premiered at the Academy Awards® qualifying Pan African Film Festival.

“FIRST” follows Charles (Will Catlett), an aspiring documentarian who has let go of his dream of being a filmmaker. However, when Charles reconnects with his childhood friend Robin (Jahmela B. Yarbrough), sparks fly, and they both find themselves entering territory that they longed for but always feared. Charles documents the journey as these childhood friends fall in love, one first at a time.

The concept of “FIRST” began as a digital series on Issa Rae’s YouTube channel, HOORAE Media. “I wrote ‘FIRST’ simply because I had an affinity for love stories and longed to see one told where the characters looked like me. After two seasons I quickly realized there are so many others just like me from all over the world craving to see and experience the same thing,” said Jahmela.

The series quickly garnered more than 7 million views and the team realized it had struck a chord. “‘FIRST’ answered the deep call for Black people to see themselves represented on the small screen,” said Producer Lynneise Joseph. “It was one of the first web series to represent Black people in a positive way. ‘FIRST’ remains one of the top web series on Issa Rae’s YouTube channel and was in high demand from fans to be made into a movie.”

For Brandon, the choice of using Blackmagic Design cameras was a simple one. “I’ve always loved Blackmagic cameras. I remember long ago borrowing a friend’s camera to shoot a few projects and that’s when I was hooked. I purchased the Blackmagic Pocket Cinema Camera 6K when it first came out and when it was time to shoot this



film, our decision to use Blackmagic cameras was easy,” he said. “Our schedule and budget were very tight, so we decided to shoot multi cam. I knew the size and weight of the Pocket 6K and Pocket 6K Pro would help us move quickly, and the quality you can achieve is amazing.”

Having also worked with Blackmagic cameras before, Novy was happy with the choice. “Having past experience with Blackmagic, I knew they would keep up with the fast paced environment on set,” said Novy. “We used one Pocket Cinema 6K, one Pocket Cinema 6K Pro, and an URSA Mini Pro 12K. The Pocket cameras were used for 90% of the shoot, with the 12K used in stunt scenes and when we needed extra coverage. For example, there was a scene where the two lead actors jumped into a swimming pool. We were racing against the sun to shoot that scene,



CASE STUDY

but with our three cameras we were able to make our day before losing light.”

Brandon enjoyed the versatility of the cameras, while still feeling confident the quality would be consistent despite which camera was used. “All these cameras are workhorses. When working on projects, I make sure the tools we use aren’t a hindrance, especially when we have to move quickly. The Blackmagic cameras beautifully handled whatever we threw at them and allowed us the freedom to create.”

The team chose Blackmagic RAW as their codec, looking for a balance between high quality and reasonable storage needs. “As a DP, I love having as much quality and resolution recorded as I can, but there’s a give and take when you’re shooting with three cameras and limited hard drive space,” added Novy. “We ended up deciding to shoot



other packages in the past, he had transitioned to editing in DaVinci Resolve Studio in 2020. “This was by far the smoothest and the most stress free post experience I have had in my 20 years of editing,” he said. “With other software I’ve used in the past, stability was a big problem. I would have projects crash all the time, and I’ve even lost projects entirely. Moving over to DaVinci Resolve when I did has saved me so much time and headache. It is so smooth and stable, and I never had any issues while working on this project.”

The multiple toolsets available in DaVinci Resolve Studio came in handy, both for color grading as well as the ability to create VFX in Fusion, rather than taking them to an outside vendor. “When I first started on this project, I didn’t know Fusion well,” Brandon continued. “Coming from a layer based compositing system, the nodes didn’t make sense. But when I took a minute to learn nodes, the door of possibilities opened wide! To have such a powerful tool right within Resolve is truly a gift. To whoever reads this, do yourself a favor and take the time to learn Fusion. It’s not as scary or confusing as it may seem.”

The film was graded in DaVinci Resolve Studio by Colorist Sarah Sebring. The key elements for Jahmela were the transitions between eras, as the film follows the characters over time. “We follow the characters in different time periods from childhood to adulthood,” said Jahmela. “Sarah was able to subtly give us a ’90s look, an early 2000s look and a present day look all while keeping a cohesive overall quality. She did a marvelous job bringing the entire film together.”

Considering the process of grading, Brandon had little to criticize. “We really didn’t have any challenges during the grade. I think this is a testament to the entire Blackmagic Design ecosystem we used on this film, from cameras through finishing. It not only works but works well. We couldn’t ask for more,” he concluded.



Blackmagic RAW in constant bitrate at 5:1 so we could maximize quality and still save some hard drive space.”

Novy was pleased the choice had no effect on the quality of the image. “We had a party scene in the film with a lot of low light and saturated colors that I thought we would need to do some grain removal and color tweaks for,” continued Novy. “But when it came time to grade, I was pleasantly surprised with how well the multiple colors held up and needed little to no changes other than a small saturation boost.”

With African American leads, Brandon was happy the dynamic range of the sensor represented skin tones accurately. “Every scene shows how wonderful the color science is,” added Brandon. “The cameras captured skin tones, especially darker skin tones absolutely beautifully.”

Brandon took on the task of editing. Having worked in

KC GLOBAL MEDIA COLLABORATES WITH PRIME VIDEO TO BRING ANIMAX + GEM – THE ULTIMATE JAPANESE ENTERTAINMENT TO INDIA

KC Global Media, Asia’s leading entertainment network, and Prime Video, India’s most loved entertainment destination, announced the launch of Japanese entertainment pack, Animax + GEM on Prime Video Channels in India. Animax + GEM offers customers a selection of popular Japanese anime, drama, and variety programmes with English subtitles from KC Global Media’s linear channels Animax and GEM. This ultimate 2-in-1 entertainment pack is now available to Prime members at an add-on subscription of ₹299 per year. With Prime Video Channels, Amazon’s video entertainment marketplace, Prime members get friction-free and convenient access to a wide range of premium content from multiple video streaming services all available with add-on subscriptions at a single destination—Prime Video website and app.



George Chien, Co-Founder, President, and CEO of KC Global Media said, “Fueled by passionate fans and the strong following of Japanese pop culture in India, we are excited to bring the ultimate Japanese entertainment experience in collaboration with one of India’s leading streaming platforms. This partnership with Amazon Prime Video marks another significant milestone for

us, as we continue our efforts to provide fans in India with greater accessibility across multiple genres of premium Japanese hit series and anime content, anytime, anywhere.”

Home to some of the biggest anime titles, Animax offers popular genres for action, romance, horror, supernatural, sci-fi, comedy and slice of life. Anime fans in India can now tune in to enjoy award-winning anime action fiction series like the hit drama romance, Fruits Basket (Seasons 1 to 3) – winner of the Anime of the Year, 8th Anime Trending Awards 2022; the complete box set of popular sports comedy series, Haikyuu! (Season 1 to 4); as well as fantasy action, Yashahime: Half Demon Princess - Nominee for Best Character Design, Anime Awards 2021; and the highly acclaimed action-adventure anime, The Seven Deadly Sins – winner of Behind the Voice Actors Awards 2016, for Best Male Lead Vocal Performance



in an Anime Television Series and adapted from one of the best-selling manga series of the same title; as well as the popular comedy action series, How a Realist Hero Rebuilt the Kingdom and many more!

Asia’s leading Japanese entertainment brand, GEM, makes its debut in India with an unparalleled line-up of hit Japanese dramas and variety shows featuring Japan’s leading celebrities and hosts. India fans can catch popular hit drama series, such as 10 count to the Future starring award-winning actor, Takuya Kimura, including other titles, such as AVALANCHE, Captured Hospital, Outsider Cops, and NICE FLIGHT!. Popular Japanese variety shows include VS ARASHI, featuring Japan’s hottest J-pop male idol group, ARASHI, going through a series of funny and entertaining challenges with other entertainers and celebrity guests. India fans can also explore the unique flavors of Japan as celebrity chef, Mocomichi Hayami takes audiences on a culinary adventure across Japan in Moco’s Travel Kitchen. Other fan-favorite titles include, The Quest, Who is the Real Celebrity, and more. All content from Animax and GEM will be streamed in their original Japanese audio and accompanied with English subtitles.

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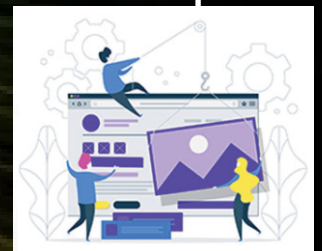
- ❖ Home Page - \$250 per month
- ❖ News & Feature Page - \$150 per month

Emailers

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- ❖ Broadcast & Film e-newsletter banner \$ 200 – 1 insertion

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- ◆ News Page - width 160 pixels x depth 600 pixels



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