

Case Studies & Guesstimates for Entertainment Industries

The entertainment industry is a vital part of the global economy, encompassing film, music, television, gaming, and digital content. Its importance in today's era is underscored by its ability to shape culture, provide escapism, and drive technological innovation. The proliferation of streaming services, social media, and digital platforms has revolutionized content consumption, making entertainment more accessible and personalized than ever.

Data scientists play a crucial role in the growth of the entertainment industry by analyzing consumer preferences and behavior. They leverage big data to optimize content recommendations, enhance user engagement, and predict trends, enabling companies to tailor their offerings to audience demands. By utilizing advanced analytics and machine learning, data scientists help entertainment companies improve decision-making, increase viewership, and drive revenue growth, ensuring the industry remains dynamic and responsive to changing consumer landscapes.

Product Dissection

1. Platform Selection

Question: Choose a leading platform from a domain related to the entertainment industry. Justify your selection by discussing the platform's popularity, impact, and relevance in its industry.

Answer: Netflix

Popularity: Netflix remains the most recognized global streaming platform with over 270 million subscribers worldwide. It leads the market in original content, binge-worthy series, and international productions, with massive fandoms across the globe. In India, it's increasingly popular among premium urban users, students, and professionals.

Impact: Netflix disrupted traditional media with the binge model and became a pioneer of streaming-first originals like *Stranger Things*, *Squid Game*, and *Delhi Crime*. Their recommendation engine and global distribution model redefined viewer expectations and content strategies.



Relevance: In 2025, Netflix is a tech-first entertainment giant, using AI/ML to drive engagement, retention, and personalization. It supports 30+ languages, has premium partnerships with TV brands, and actively invests in local content + global reach. Netflix also leads in cross-platform compatibility and data-driven storytelling.

2. Core Features & Functionalities

Question: Research and list the core features and functionalities of the selected platform. Describe how these features contribute to the platform's success and user engagement.

Answers: Core Features and Functionalities of Netflix

Feature	Description	Contribution to Success
Personalized Home Feed	UI changes based on genre preferences, watch time, and time of day	Keeps users engaged with tailored suggestions
Multiple User Profiles	Up to 5 profiles with separate histories and settings	Enables family sharing while preserving personal experiences
Global Originals	In-house content like <i>The Witcher</i> , <i>Sacred Games</i> , <i>Narcos</i> , etc.	Builds brand loyalty and international acclaim
Smart Downloads	Auto-downloads next episodes on Wi-Fi	Increases watch time on-the-go, especially in mobile-first markets
Language Localization	Subtitles + dubs in 30+ languages	Expands accessibility across cultures and geographies
4K, HDR, Dolby Atmos	Ultra-HD, immersive viewing for premium subscribers	Drives upgrades to higher subscription tiers
Skip Intro & Auto-Play	Convenience-first controls	Encourages binge-watching and session continuation
Recommendation Engine	Collaborative + content-based filtering, bandit algorithms, and personalization	Powers most of the viewing decisions made on Netflix
Parental Controls & Kids Mode	Restrict content by age, create child-friendly profiles	Targets family audiences
Netflix Button on TVs	Pre-installed button on smart TV remotes	Increases accessibility and habitual use

3. Real-World Problems Solved

Question: Identify the real-world problems that the platform aims to solve. Discuss how the platform addresses these problems through its features and functionalities.

Answers: Real-World Problems Addressed by Netflix

Problem	Netflix's Solution
Content Overload & Confusion	AI-based recommendations, trending sections, and curated rows reduce decision fatigue
Lack of Global Stories	Commissioning local-language originals from Korea, India, Spain, and more
High Churn Post-Trial	Personalized content, mobile-only tier, and content drops encourage retention
Internet Bandwidth Challenges	Smart compression and adaptive bitrate streaming
Family Sharing & Security	Multiple profiles, password sharing crackdown, and 2FA introduced
Data-Driven Content Creation	Netflix uses viewership analytics to greenlight scripts and cancel underperformers

Introduction to Netflix Database Schema & ER Diagram

Detailed Schema Discussion — Netflix ER Diagram

This **schema** models the key components of a Netflix-like platform, designed to capture interactions between users, their preferences, the content they view, and the subscription plans they choose. It's **normalized**, **scalable**, and supports analytics, personalization, and monetization strategies.

1. 🧑 USERS & SUBSCRIPTIONS

USERS

- **Primary Key:** `user_id`
- Represents a registered Netflix account.
- Contains **email**, **password**, and **created_on** timestamp.
- Linked to a **subscription_id** which identifies the user's active plan.

SUBSCRIPTION

- **Primary Key:** `subscription_id`
- Contains information about different plans:
 - `plan` (e.g., Basic, Standard, Premium)
 - `price` (monthly cost)
 - `screens` (simultaneous streams)
 - `resolution` (video quality)
 - `renewal_date` (for tracking billing cycles)
- Enables modeling of pricing tiers and helps analyze **ARPU (Average Revenue Per User)** or project **revenue growth**.

Relation: A user *takes* a subscription. This many-to-one relationship supports recurring billing and churn analysis.

2. PROFILES

PROFILES

- **Primary Key:** `profile_id`
- Each `user_id` can create multiple profiles.
- A profile stores:
 - `name`, `password` (optional for profile locking),
 - `age_limit` for parental controls,
 - `language_prefer` for content recommendations.

This enables **personalization** within a household and helps in **targeted content suggestions**, **maturity filtering**, and **multi-user usage tracking**.

3. CONTENT (MOVIES & SHOWS)

CONTENT

- **Primary Key:** `content_id`
- Unified table for both movies and shows using `type` ENUM (Movie or Show).
- Descriptive metadata includes:
 - `title`, `release_year`, `description`, `language`, `duration`
 - Foreign keys for `genre_id` and `credit_id`
- Enables filtering, search, genre-based browsing, and watch-time analytics.

4. 📊 VIEWING HISTORY & RATINGS

VIEWING_HISTORY

- Tracks content viewed by each profile.
- Logs:
 - `watched_at` (timestamp),
 - `progress_percent` (how much was watched).
- Useful for:
 - **Resume playback,**
 - **Content completion rates,**
 - **Recommendation systems** based on watch patterns.

RATING

- Captures ratings and reviews given by each profile.
- Attributes:
 - `rating` (decimal, e.g., 4.5 stars),
 - `review` (optional text).

This fuels **collaborative filtering**, **user satisfaction measurement**, and **feedback loops** for content strategy.

5. 🎭 GENRE & CREDITS

GENRE

- **Primary Key:** `genre_id`
- Classifies content into categories (e.g., Comedy, Drama, Thriller).
- Helps in genre-based filtering and personalization.

CREDITS

- Contains production information:
 - `actors, director, musicians`
- Linked by `credit_id`, associated with a specific content item.

These fields are crucial for:

- **Search filters,**
 - **Actor-based suggestions,**
 - **Highlighting creators,** and
 - Supporting user preferences for specific directors, genres, or cast members.
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ER Diagram Overview

The ER diagram models a comprehensive streaming platform with the following key components:

1. **Users & Subscriptions:**
 - Each user has a unique account linked to a subscription plan.

- Subscription plans include attributes like pricing, resolution, number of screens, and renewal dates.

2. Profiles:

- A user can create multiple profiles (e.g., for family members).
- Each profile stores personalized settings like name, age limit, and language preference.

3. Viewing & Rating Activity:

- Profiles generate a **viewing history** and give **ratings** to content.
- These interactions help track watch behavior, progress, and feedback.

4. Content Metadata:

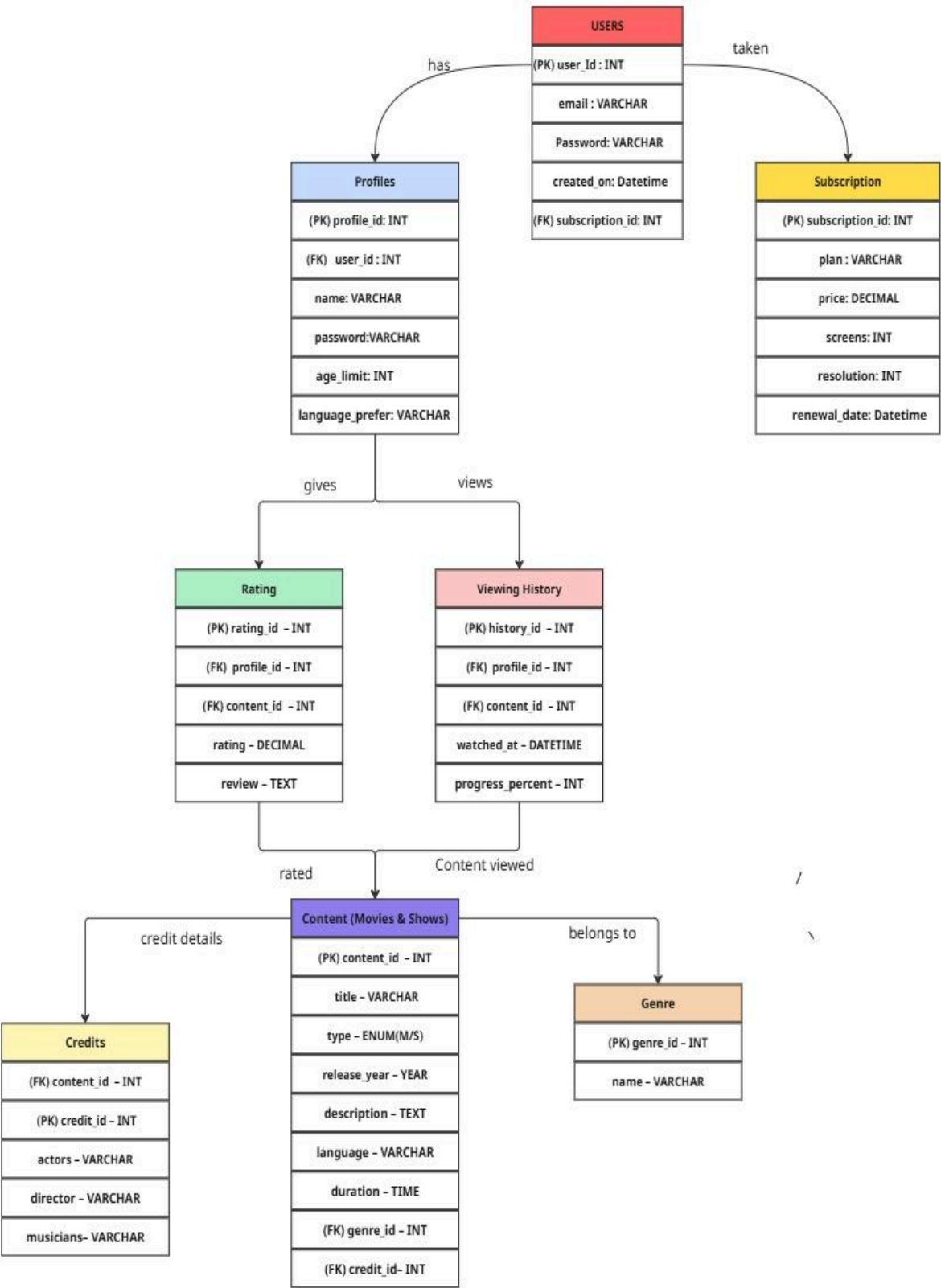
- The platform offers movies and shows, each classified by title, type, language, year, duration, and description.
- Content is linked to a **genre** and **credit details** (actors, directors, musicians).

5. Genre & Credits:

- Genre categorizes content thematically.
- Credit information captures creators behind the content (e.g., actors and directors), enhancing recommendation systems and search filters.

SCHEMA & ENTITY RELATIONSHIP DIAGRAM

SCHEMA & ENTITY RELATIONSHIP DIAGRAM



Revenue and Profit Growth Strategies

Objective:

Increase Netflix's net profit by **at least 25%** over the next 12–18 months.

1. Current Business Snapshot (As of 2025)

- **Revenue:** ~\$37 billion
 - **Net Profit Margin:** ~13%
 - **Subscribers:** 270+ million globally
 - **Key Revenue Streams:**
 - Subscription fees (main)
 - Ad-supported tier (growing)
 - Licensing & merchandise (small)
 - Content partnerships
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2. Strategic Levers to Boost Profit

A. Grow Revenue

i. Tiered Monetization (Dynamic Pricing)

- Introduce **regional pricing** based on affordability and competition.
- Add "**micro bundles**" – cheaper niche packages (e.g., only documentaries, anime, kids).
- Expand the **ad-supported tier** to more markets (especially Asia, Latin America).
 - Target: Convert 10% of current non-subscribers into ad-tier users.
 - Expected lift: \$2–3 billion in incremental revenue.

ii. Content Licensing to Competitors

- **License older Netflix Originals to FAST (Free Ad-Supported TV) platforms.**
 - Example: Lease "Stranger Things" S1–3 to Amazon Freevee or Roku Channel.
 - Benefit: Monetize sunk content cost without cannibalizing new releases.

iii. Merchandising & IP Expansion

- Build a direct-to-consumer store for exclusive merchandise.
 - Develop gaming and AR/VR experiences based on top IPs.
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B. 🗑️ Reduce Costs (Operational Efficiency)

i. AI-Driven Content Production

- Use AI for scriptwriting, dubbing, and production logistics.
- Reduce production budgets by 10–15% on mid-tier content.

ii. Cut Underperforming Originals

- Use stricter ROI metrics.
- Cancel shows that don't reach audience/viewership goals within 3–6 months.

iii. Cloud Optimization

- Review AWS/GCP spend.
 - Shift to hybrid cloud or edge computing in key regions to lower bandwidth costs.
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C. 🌐 Expand Market Penetration

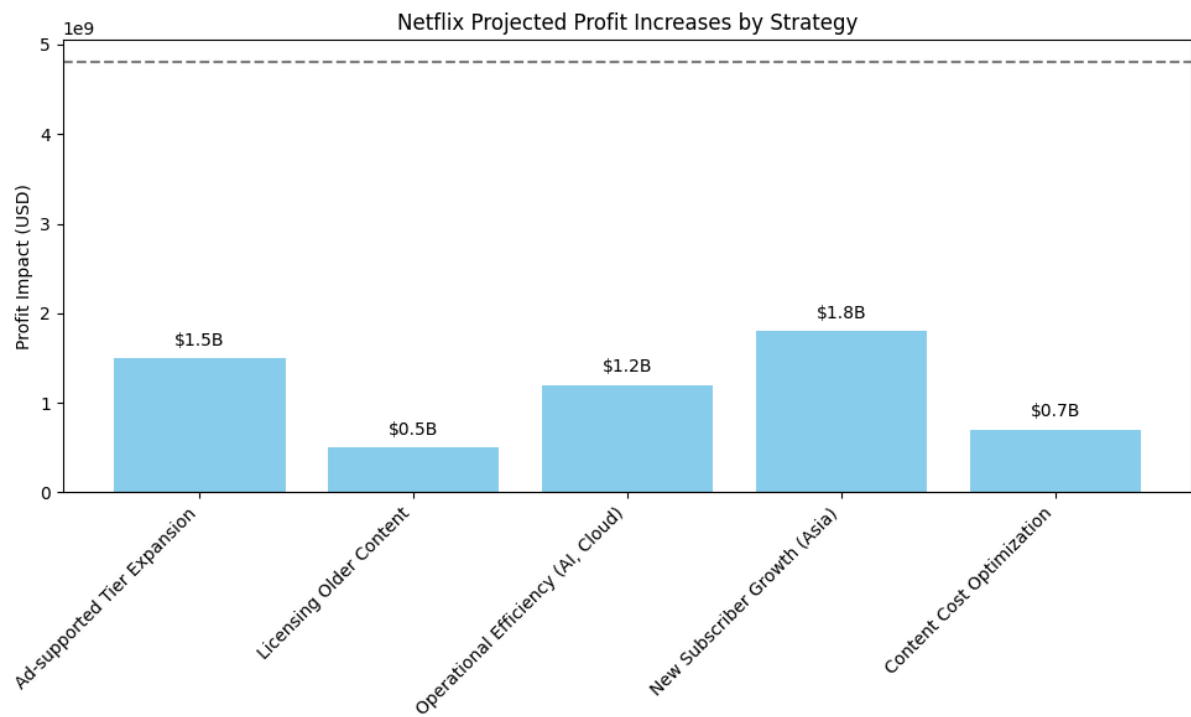
i. India & Southeast Asia

- Local-language originals + mobile-only low-cost plans.
- Partner with local ISPs or telcos (e.g., Reliance Jio, Singtel).
- Target: 25M new subscribers in 2 years → ~\$600M annual revenue

ii. Global Sports Streaming (Carefully)

- Selectively bid for regional sports rights (e.g., women's leagues, regional football).
 - Use this to drive subscriber growth without overspending like ESPN+ or Apple TV.
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3. Financial Projection: Profit Increase Strategy



Strategy	Profit Impact Estimate
Expand ad-supported tier	+\$1.5B
Licensing older content	+\$0.5B
Operational efficiency (AI, cloud)	+\$1.2B
New subscriber growth (Asia)	+\$1.8B
Reduce content bloat	+\$0.7B
Total Estimated Profit Gain	~\$5.7B
Baseline Net Profit	~\$5.0B
Projected Profit	~\$10.7B
% Increase	+114%

Even a conservative scenario with partial success could easily cross +25%.

4. Risks & Mitigations

Risk	Mitigation
Subscriber backlash to price hikes	Regional dynamic pricing
AI misuse or backlash	Maintain human-AI hybrid approach
Competition from Disney+, YouTube	Invest in exclusive, global franchises
Content fatigue	Focus on quality + user-curated discovery

5. Conclusion

By balancing **revenue growth (ad tier, regional expansion)** with **cost reduction (AI, cloud, content ROI)**, Netflix can feasibly increase its net profit by **25–100%** within 12–18 months, while strengthening its position as a global entertainment leader.

PART - II

Guesstimates

1. What will be the percentage increase in global streaming service subscriptions over the next five years?

- This question requires estimating the growth rate of subscriptions to streaming platforms like Netflix, Disney+, and Amazon Prime Video, considering current trends and market expansion.

Solution:

Let us assume that the estimated 2025 Subscriptions for global streaming platforms would be:

Calculate the total estimated global 2025 subscriptions as follows:

Current Subs \approx 300 million + 200 million + 150 million +150 million

Current Subs \approx 800 million

This means that there are approximately 800 million global streaming service subscribers as of now.

Based on industry reports:

- **Pre-2022 compound annual growth rate (CAGR):** $\sim 17\% - 20\%$
- **Post-pandemic CAGR:** $\sim 10\% - 13\%$
- **Emerging markets (Asia, Africa, LATAM)** will continue growing
- Mature markets will saturate

Let's use a conservative CAGR of 12% for the next five years.

Use the **CAGR Formula** to estimate the subscriptions for global streaming

Platform	Estimated 2025 Subscriptions
Netflix	~ 300 million
Amazon Prime Video	~ 200 million
Disney+	~ 150 million
Others (HBO Max, Apple TV+, regional platforms like Viu, Zee5, etc.)	~ 150 million

platforms for next 5 years:

$$\text{Future Subscriptions} = \text{Current Subs} * (1 + r)^n$$

Here:

- Current Subs = 800 M
- $r = 12\% = 0.12$
- $n = 5$ years

$$\text{Future Subscriptions} \approx 800 \text{ M} * (1.12)^5$$

$$\text{Future Subscriptions} \approx 1410 \text{ M}$$

Now, calculate the percentage increase as follows:

Percentage increase $\approx (1410 - 800) / 800 * 100$

Percentage increase $\approx 76.25\%$

So, the percentage increase in global streaming service subscriptions over the next five years will be approximately 76.25%.

2. How many hours of content will the average person consume per week through digital platforms in 2025?

- This question involves predicting the amount of time individuals will spend watching videos, listening to music, or engaging with other digital content, factoring in current consumption patterns and future growth.

Solution:

It is safe to say that as of 2023-2024, an average person spends nearly about **6 hours per day** on internet-connected digital platforms which implies that approximately **42 hours per week** (6 hours * 7 weeks) are being spent on streaming platforms.

Consider the following trends:

- Screen time is **plateauing** in North America and Europe
- Still **increasing** in emerging markets (India, LATAM, Africa)
- Overall **global growth is slowing**, but not stopped

We can assume **+1% annual growth** in average screen time from 2024 to 2025.

Now, let's project weekly hours of content to 2025:

2025 Daily Hours $\approx 6 * (1 + 0.01) \approx 6.06$ hours/day

2025 Weekly Hours $\approx 7 * 6.06 \approx 42.42$ hours/week

The average person will consume approximately 42.42 hours of content per week through digital platforms in 2025.

3. What will be the market share of virtual reality (VR) and augmented reality (AR) entertainment experiences in the next decade?

- This question requires an estimation of the adoption and market penetration of VR and AR technologies in the entertainment sector, including gaming, live events, and interactive content.

Solution:

As of 2024, the estimated size of the Global Entertainment and Media Industry is \$2.6 trillion USD. The estimated size of the Current VR/AR Entertainment Market is \$50 billion USD. This market includes VR games, AR apps, immersive concerts, and virtual social spaces.

VR/AR entertainment is projected to grow at a CAGR of 18–25% over the next decade. Let us use a conservative 20% CAGR.

Estimate the Future VR/AR Market for 2035 as follows:

$$\text{Future VR/AR Market} = \text{Current Market} * (1 + r)^n$$

Here:

- Current Market = \$50 billion USD
- $r = 20\% = 0.20$
- $n = 11$ years (From 2024 to 2035)

$$\text{Future VR/AR Market} \approx 50 * (1 + 0.20)^{11}$$

$$\text{Future VR/AR Market} \approx 50 * 7.4$$

$$\text{Future VR/AR Market} \approx \$371 \text{ billion USD}$$

Assume global entertainment grows slowly, say 3% CAGR, then the future total Entertainment Market will be estimated for 2035 as follows:

$$\text{Future Total Market} \approx 2.6 * (1 + 0.03)^{11}$$

$$\text{Future Total Market} \approx 2.6 * 1.39$$

$$\text{Future Total Market} \approx \$3.6 \text{ trillion USD}$$

$$\text{Future Total Market} \approx \$3600 \text{ billion USD}$$

Now, let's calculate market share of VR/AR as follows:

$$\text{VR/AR share} \approx (370 \text{ billion}) / (3600 \text{ billion}) * 100$$

$$\text{VR/AR share} \approx (370 \text{ billion}) / (3600 \text{ billion}) * 100$$

$$\text{VR/AR share} \approx 0.103 * 100$$

$$\text{VR/AR share} \approx 10.3\%$$

Thus, it can be inferred that by 2035, VR and AR entertainment is projected to hold approximately 10% of the global entertainment market share.

Summary of Reasoning:

Factor	Assumption
VR/AR market size (2024)	\$50B
Total entertainment market (2024)	\$2.6T
VR/AR CAGR (2024–2035)	~20%

4. How many new films and TV shows will be produced globally per year by 2030?

- This question involves estimating the annual production output of the entertainment industry, considering factors like technological advancements, production costs, and consumer demand.

Solution:

It is safe to assume that the estimated number of films that are produced globally per year ranges between 7,000 and 10,000. Platforms like Netflix, Amazon, Disney+ produce hundreds of new shows annually. Adding global cable, streaming, and local production, nearly 3,000 to 5,000 new TV/web shows are produced per year.

Now, let us assume that an average of nearly 8000 movies and 4000 tv shows are produced globally in a year, which estimates the global total of approximately 12000 new productions per year.

Growth Drivers:

- Explosion of OTT platforms in India, SEA, Africa
- AI-assisted production + cheaper tools
- Increased demand for regional + short-form content
- Rise of independent/creator-led content

Let's assume a modest 5% CAGR for production volume.

Applying CAGR formula to 2023 - 2030, we would obtain the following:

$$\text{Future Volume} = \text{Current Volume} * (1 + r)^n$$

Here:

- Current Volume = 12000
- $r = 5\% = 0.05$
- $n = 7$

Future Volume $\approx 12000 * (1 + 0.05)^7$

Future Volume $\approx 12000 * 1.407$

Future Volume ≈ 16884

So, it can be concluded that by 2030, approximately 17,000 new films and TV shows will be produced globally each year.

Summary of Reasoning:

Year	Estimated New Productions (Films + TV)
2023	~12,000
2025	~13,200
2027	~14,600
2030	~17,000

5. What percentage of global box office revenue will be generated by international markets in the next five years?

- This question requires predicting the contribution of non-domestic markets to the overall box office revenue, taking into account trends in international film distribution and audience preferences.

Solution:

Let us begin with understanding the current breakdown for 2023 - 2024. The total global box office revenue for 2023 - 2024 is approximately \$30 billion. The regional split of this revenue is shown below:

- International markets (outside US/Canada): ~70–72%
- U.S./Canada (Domestic): ~28–30%

So, as of now, the international share is approximately 70%.

To make a reasonable projection to 2030, we shall consider the following industry trends:

Growth Drivers in International Markets:

- Growth in **Asia-Pacific** (especially China, India, South Korea)

- Emerging theaters and content demand in **Latin America** and **Africa**
- Hollywood relying more on **overseas markets** for profitability
- Local productions gaining international appeal

Slower Growth in Domestic (U.S./Canada) Market:

- Box office still recovering from COVID-19 slump
- Continued shift to streaming

Let us assume that international markets grow by nearly 2-3% annually and domestic (U.S./Canada) markets stay flat or grow by less than 1%.

By 2030, approximately 75% of global box office revenue will be generated by international markets.

Summary of Reasoning:

Year	International Share	Reasoning
2023	70–72%	Based on MPA/Statista data
2025	~73%	Faster growth in Asia/Latin America
2030	~75%	Continued global expansion, U.S. stagnation

PART - III

Scenario Based Questions