

DISNEY+ AND MACHINE LEARNING IN THE STREAMING AGE

Case Study Report

Introduction

Disney plans to launch its own streaming platform, Disney+, to capture a share of the rapidly growing video streaming market. With a rich 100-year history, Disney has a unique advantage in terms of content and brand recognition. But it must navigate a highly competitive landscape and overcome numerous challenges to succeed. This case study report will analyze how Disney should go about introducing its streaming platform taking into consideration its history, lessons it can learn from its competitors (Netflix and Amazon Prime), and how it can achieve its strategic goals.

Strategic Goals

The following factors should be kept in mind by the stakeholders while designing Disney's long-term strategy and vision,

- **Subscriber acquisition and retention:** Thrive not survive! As a new entrant in the video on demand industry, Disney faces fierce competition from highly innovative and resource rich tech companies already amassing a market share of over 100 million subscribers. Disney's primary objective here is to drive subscriber growth, which involves not only attracting new customers but also enticing existing customers of Netflix and Amazon to switch to their platform.
- **Brand expansion and Integration with other business divisions:** Disney has a strong brand identity and loyal customer base. Disney+ could be used as a vehicle to expand the brand into new markets and customer segments. Disney may aim to leverage its existing intellectual property and create new content to attract a wider audience and strengthen its brand presence. Disney has a diversified business portfolio, and it may aim to integrate Disney+ with other business divisions such as Parks, Experiences and Products.
- **Revenue and profit growth:** Disney should set ambitious revenue and profit targets for Disney+ and allocate sufficient resources to achieve those targets.

The following table shows a SWOT Matrix that was developed by considering the above factors,

Strengths: <ul style="list-style-type: none">• Strong brand recognition and reputation worldwide.• Vast content library from Disney, Marvel, Pixar, Star Wars, and National Geographic.• Exclusive rights to certain franchises, such as Star Wars and Marvel.• Ability to leverage existing customer base and marketing channels.• Established relationships with content producers and distributors.	Weaknesses: <ul style="list-style-type: none">• Late entry into the market, lagging behind established players such as Netflix and Amazon Prime.• High production costs associated with creating original content.• Limited experience in the video-on-demand industry.
Opportunities: <ul style="list-style-type: none">• Increasing demand for online video streaming services.• Growing global market for entertainment content.• Expansion of distribution channels through partnerships and collaborations.• Integration of new technologies such as virtual reality and artificial intelligence.• Rising trend towards cord-cutting and shift away from traditional cable TV.	Threats: <ul style="list-style-type: none">• Intense competition from established players and new entrants.• Fluctuating consumer preferences and behavior.• Regulatory and legal challenges in some regions.• Economic downturns and recessions impacting disposable income of customers.

Machine Learning Use Cases that will help Disney achieve its goals

Disney+ can leverage machine learning in various use-cases to achieve its goals. Here are some of the potential machine learning use-cases:

- **Content recommendation:** Disney+ can use machine learning algorithms to analyze user viewing history, preferences, and behavior to provide personalized content recommendations. By understanding users' viewing habits and interests, Disney+ can offer tailored content suggestions, increasing user engagement and retention.
- **Customer service:** Machine learning chatbots can provide 24/7 customer support to Disney+ users, answering frequently asked questions and troubleshooting common issues. This can improve user satisfaction and reduce customer service costs.
- **Quality of service (QoS) optimization:** They can use machine learning algorithms to analyze streaming data, network conditions, and device capabilities to optimize video quality and reduce buffering, providing a seamless streaming experience for users.
- **Predictive analytics:** Machine learning can help Disney+ predict which shows and movies will be successful and which ones won't, based on factors such as user engagement and social media buzz. This can inform content production and acquisition decisions and help Disney+ stay ahead of its competitors.
- **Content moderation:** They can utilize machine learning algorithms to automatically monitor and moderate user-generated content, such as reviews and comments, for inappropriate or offensive content. This can help maintain a safe and positive user experience on the platform.
- **Fraud detection:** Machine learning algorithms can monitor user accounts for suspicious activity, such as account sharing or fraudulent activity. This can prevent revenue loss and protect Disney+ content.
- **Content categorization and tagging:** They can use machine learning to automatically categorize and tag its vast content library. This can include genre classification, character recognition, and scene detection, allowing users to easily search and discover content based on their interests.
- **Ad targeting:** They can leverage machine learning to analyze user data, including demographics, viewing habits, and interests, to deliver targeted advertisements. This can help optimize advertising campaigns and increase ad revenue.

Machine Learning Use-Cases based on SWOT Analysis

Strengths: <ul style="list-style-type: none">• Brand Recognition: leverage ML to analyze customer behavior and preferences to create personalized recommendations for content, increasing customer satisfaction and loyalty to the brand.• Exclusive Content: use ML to predict which content is likely to perform well, allowing them to focus on creating more content that is tailored to their audience's interests and preferences.• Brand Integration: analyze cross-promotion opportunities with other business divisions, such as offering discounts on theme park tickets to Disney+ subscribers who watch specific content.	Weaknesses: <ul style="list-style-type: none">• New Entrant in the Market: use ML to analyze customer feedback and preferences for competing streaming services and create targeted marketing campaigns to attract potential customers to Disney+.• Limited Content Library: use ML and generate new content ideas that align with their audience's interests, increasing the size and diversity of their content library. Use data from external sources like IMDB and Rotten Tomatoes.
Opportunities: <ul style="list-style-type: none">• Growing Market: Analyze market trends to identify emerging content categories and tailor their content creation strategy.• International Expansion: determine cultural differences and preferences in international markets to create localized content and marketing campaigns that resonate with their audience, increasing their market share.	Threats: <p>Competition: analyze competitor strategies to identify areas where they can differentiate themselves from their competitors.</p> <p>Economic downturns: Determine dynamic pricing model that can offer subscriptions at subsidized rates and find ways to cut cost using ML.</p>

Use of descriptive, prescriptive, and predictive analytics

- **Descriptive Analytics:** Descriptive analytics is used to provide insights into the historical data of Disney+. The primary objective of descriptive analytics is to understand what has happened in the past. For instance, Disney+

can analyze the viewing patterns of its users, such as which movies and shows were popular, how long users watched a particular program, and at what times of the day, how long customers stayed on the platform and which pages were visited more frequently. By analyzing this data, it can identify trends and patterns and make informed decisions to enhance the user experience and offer personalized recommendations.

- **Prescriptive Analytics:** Prescriptive analytics is used to provide recommendations and solutions to the business problems faced by Disney+. The primary objective here is to prescribe the best course of action based on data analysis. For instance, Disney+ can identify the root causes of customer churn and provide suggestions to reduce it and to identify opportunities for cross-selling and upselling based on the user's viewing history. This way, Disney+ can recommend content that the user is likely to watch, increasing user engagement and customer satisfaction.
- **Predictive Analytics:** Predictive analytics is used to predict future events or trends based on historical data. It is used to forecast the likelihood of a particular event occurring. For instance, Disney+ can use predictive analytics to predict the content that will be popular in the future based on historical trends. By analyzing customer behavior, likelihood of customer churn, allowing them to take proactive steps to retain customers.

Overall, Disney+ uses a combination of descriptive, prescriptive, and predictive analytics to optimize its business performance and provide an exceptional user experience.

Lessons from Netflix's use of Machine learning (and other competitors)

Disney needs to learn how to make the user experience feel tailored and specific on an individual level. Netflix uses ML to determine which shows may capture the user's attention and creates visuals specific to the viewer's interest. This sense of personalization increases the time a user spends consuming content on Netflix.

Netflix has also successfully utilized ML for content creation. Popular for its specials, Netflix identifies the type of content that is likely to be popular and invests in the same to create original content that aligns with customer preferences. Disney can follow the same and create original shows that possibly increase customer retention. Netflix also allows users to rate shows which it then uses to recommend new content accordingly. This system is responsible for 80% of the shows that people watched. This means that any individual on Netflix has more content to watch while putting in just as much or lesser effort into browsing as compared to Disney.

Netflix uses its own machine learning models and algorithms to determine a user's viewing recommendations, rather than relying solely on user feedback. This approach has been found to be more effective in engaging users and increasing their viewership. Netflix has invested heavily in developing and refining their ML models over the years, incorporating various data points such as viewing history, time of day, device used, and even the pace of the user's scrolling through titles.

Creating a personalized experience using ML allows Netflix to optimize its content delivery network and increase operational efficiency. They use ML to determine expected hours of viewing for a piece of content, estimate the cost per hour viewed, and later compare it with similar content deals. Disney could utilize a similar procedure if they were to create their specials.

Netflix's success in using machine learning to personalize recommendations highlights the importance of having a highly skilled and collaborative team of data scientists and analysts. Investing in research and development has been a key factor in Netflix's ability to stay ahead of the competition, with nearly 10% of their revenue dedicated to this area. By continually refining and improving their processes, Netflix sets a high standard for the industry to follow.

Kinds of data required for Disney+ to achieve its machine-learning goals

To implement ML models and attain its goals, Disney must comprehend the available data and determine how to utilize it to meet their objectives. The following are some types of data that can be employed for this purpose.

- **Behavioral data** – Analyzing user's engagement on the platform. What thumbnails are visually attractive to a user, what genre interests them more. What time of the day/day of the week they spend more time on the platform.
- **Feedback data** – Allow users to rate what they watched if they liked a particular movie or not. This can be used to understand their preferences and recommend better content that aligns with a specific individual. Understand what they did not like in the movie like climax, or plot etc. and use this data to change the story/ stitch it accordingly.
- **Demographic data** – To better understand popularity among users of similar age groups, countries, or language. More personalization.

- Streaming quality data – Collect streaming logs to improve user experience and minimize lags. Analyze when there is more traffic on the platform and use adaptive technology to stream the content and minimize buffer time.

Potential bias in data

A machine learning algorithm is to be provided with accurate data that is free from bias which would allow for precise predictions and recommendations. Disney+ should avoid the problem of biased data and ensure that the following sources of bias are avoided.

1. **Demographic bias:** The data used for training any algorithm must represent the population. Failing to do so will result in biased recommendations. For example: an algorithm that focuses on a male audience would not be suitable for predicting trends for a female audience.
2. **Sampling bias:** any dataset for the purpose of training should always be sampled at random. This allows for the most accurate recommendations.
3. **Historical bias:** Data used to make predictions should be free from any historical bias. Failing to do so would lead to inaccurate predictions and recommendations.

Recommendation

Considering the overwhelming number of factors and variables involved in decision making, it can be challenging to decide what to prioritize. Designing a prioritization grid that compares business value against cost/complexity can give the management a starting point. Here's a sample scorecard that Disney can use to determine their decision-making focus and priorities.

Use Case	Business Value	Complexity/Cost	Priority
Personalized Recommendations	High	Medium	1
User Churn Prediction	High	High	2
Content Curation & Tagging	Medium	High	3
Dynamic Pricing	High	High	4
Ad Targeting	Medium	High	5
Fraud Detection	Medium	Medium	6
Content Moderation	Low	High	7