

AI-Driven Personalization in Digital Commerce: The Case of Netflix and Its Influence on Consumer Behaviour

Kanchan Balai

HPKV Business School

Central University of Himachal Pradesh

Prof. Surya Rashmi Rawat

HPKV Business School

Central University of Himachal Pradesh

Vishal Singh

HPKV Business School

Central University of Himachal Pradesh

Dr. Ruchi Sharma

HPKV Business School

Central University of Himachal Pradesh

Introduction

The rapid growth of technology combined with the widespread use of the Internet has resulted in an explosive increase in data creation by businesses and the tools available to them. This has created an opportunity to use artificial intelligence (AI) to provide customers with unique experiences on various platforms. In today's digital marketplace, personalisation via AI is revolutionising how organisations use AI to better understand customers on an individual level, anticipate their actions, and dynamically create content to suit them in real time (Huang & Rust, 2018; Wedel & Kannan, 2016). Companies such as Netflix provide examples of how this occurs by using complex algorithms developed through machine learning and analysing large amounts of data on consumer behaviour to develop personalised recommendations for their customers. This has had a major impact on consumer engagement and purchase decisions. Several industry studies have confirmed the importance of personalisation, including what IBM (2023) reports: a significant number of consumers prefer interactions enabled by AI because they enhance their overall digital experience, showing growing confidence in automated personalisation systems. In another instance by McKinsey & Company (2023), approximately 71% of consumers expect organisations to provide a personalised experience, and a significant portion of them become dissatisfied with organisations that fail to provide this level of service. These studies illustrate the development of a new paradigm in consumer expectations, whereby providing a personalised experience has transitioned from a competitive advantage to an essential ingredient of digital ecosystems. Historically, personalisation in digital settings has been limited primarily through simple strategies, such as sending targeted emails or creating rule-based recommendation systems. The research done by MacKenzie et al. (2011) mention that in the past, businesses have typically personalised their customers by focusing on their identity

and previous purchases. With advancements in AI technology and Data Analytics, businesses can now personalise through real-time methods that are constantly evolving based on user behaviour, contextual data signals, and predictive models (Adomavicius & Tuzhilin, 2005). This transition has enabled a shift from mass marketing to hyper-personalisation as a digital experience, thereby offering increased relevance for customers through a more efficient use of their time. Consumers have access to an immense volume of data within the digital economy today, requiring businesses to provide customers with personalised recommendations to simplify the decision-making process. AI-enabled technologies allow customers to alleviate cognitive overload by filtering out unwanted or irrelevant content and presenting only what is most appropriate aligned to each user's preference (Tam & Ho, 2006). Netflix is an excellent example of an organisation that utilises effective AI personalisation. Netflix has developed its own proprietary recommendation engine that uses each viewer's viewing history, including preferences and behavioural patterns, to provide relevant, customised content recommendations. This helps retain the viewer and encourages them to continue using the platform through extended periods of binge watching and exploring new content (Gomez-Uribe & Hunt, 2015). Multiple studies have provided empirical research demonstrating that AI personalised marketing affects customer behaviour. According to Lemon and Verhoef (2016), providing personalised experiences for customers leads to higher overall customer satisfaction, increased engagement with the company, and stronger customer loyalty to the brand. Ultimately, these effects lead customers to continue using a brand's services and being retained as subscribers. While AI personalisation has many advantages, it also raises concerns regarding data privacy and transparency in the way algorithms operate. The continual growth of AI personalisation can result in a personalisation-privacy paradox. Owing to this phenomenon, consumers want to receive relevant or customised experiences through AI personalisation, but they also have concerns about how their personal data are collected and how companies use this data to create these types of customised experiences.

Personalization in AI: Definitions and Goals

AI personalisation is when content, products, and services are made relevant for specific users based on their characteristics (likes, dislikes, activities, etc.) and their previous interactions with the brand. AI's main goal of AI personalisation is to enhance the user experience by delivering meaningful content (Ayemowa et al., 2024). When businesses are aware of what their customers prefer, they can help alleviate information overload and make decisions easier for customers. The definition of personalisation in AI has expanded from static customisation to now also embodying dynamic adaptability. Traditional systems use predetermined rules static filters to determine how a user interacts or views the content offered to them. AI technology uses machine learning to create real-time recommendations based on data analytics. For example, as you use the Netflix system, its ability to recommend movies and shows will continue to change based on how you use the system, ensuring that your recommendations are always relevant and engaging. Another important aspect of personalisation is its role in customer engagement and loyalty. By providing customers with a personal experience, they gain a greater sense of relevance and value, thus forming a stronger bond with the brand.

Businesses using AI technology to provide personalized experiences often see increased customer satisfaction/repeat business and revenue (Jadiga, S. 2025).

AI-Driven Revolution In Streaming Industry

AI-based personalisation is transforming the streaming industry by using advanced technologies to deliver highly tailored user experiences, enhancing engagement, loyalty, and satisfaction, and is expected to play a major role in the future of content consumption (Matuszewska, 2025). With approximately 302 million paying customers, Netflix is one of the largest online video-on-demand rental companies in the world, operating in over 190 countries. There are many types of TV series, movies, and video games available in many different languages. Subscribers can watch shows whenever they want, regardless of their location, and they can modify their accounts for free whenever they feel it is necessary (Netflix, 2025). In 1997, Reed Hastings and Marc Randolph created Netflix to provide online DVD rentals from their office in Scott Valley, California. The name 'Netflix' is simply an abbreviation of two words: 'net' refers to the World Wide Web, while 'flix' refers to the motion picture world (Joonas et al., 2023).

Industry and Company Background

The film retail and marketing businesses are based on an entirely service-oriented model. Blockbuster, an early participant, created a rental-market product that customers around the world flocked to. Because of its successful marketing strategy, Blockbuster had more advantages over others in the same industry. To compete in this newly created market, Netflix patterned itself after Blockbuster and built its entire company on the original mail order business model. By offering no late fees, thousands of movies to choose from, and an exceptionally quick delivery service, Netflix was able to beat Blockbuster in terms of market share. Furthermore, Netflix used different marketing methods than Blockbuster to establish market dominance in the movie rental industry. Netflix was founded in 1997 as an Internet- based DVD rental company by Marc Randolph and Reed Hastings in Scotts Valley, CA, USA. "Netflix" is formed from "Net" for internet, and "Flix" is a slang term for "movies". At its inception, the company had no studio relationship and was utilising traditional methods of conducting business within the rental video marketplace; however, in less than two years, Netflix adopted a subscription model that was superior to its competitors. The rental business model for Netflix was based on a website whereby consumers rented DVDs from Netflix by "snail mail", serving as a competitor for Blockbuster stores that rented physical video tapes (Joonas et al., 2023). The company was the world's first major digital disruptor in the movie industry and ultimately helped close the gap between Hollywood competitors as technology advanced worldwide in terms of information technology. In the wake of the boom in DVD sales, Netflix's rapid growth has caused its competition, including some of the largest media companies such as Disney, HBO, Blockbuster, and Sony, to criticise Netflix's ability to innovate and move quickly to grow its business base using digital technology (Barr, 2011). Netflix's e-commerce-based approach was a disaster for competitors in the movie business, specifically regarding their physical high-definition video formats; internet websites have taken away market share and consumers and fragmented viewership across much of the internet. Owing to increased Internet coverage and the expanding number of subscribers, the traditional movie business model began to ignore the e-commerce methodologies of the digital business models of companies like Netflix to gain a competitive advantage. Competitors, including Blockbuster, attempted to change their physical store locations into e-commerce portals but failed because of their failed e-commerce models and limited resources to support an e-commerce website, which resulted in Blockbuster going out of business in 2014 (Trendowski & Sherman, 2014). Once Netflix was able to provide streaming video content over the Internet in 2007, the company provided consumers with immediate gratification and helped create a new market for consumers who used personal computers and televisions. Along with developing online streaming services, Netflix formed partnerships with many other electronics manufacturers to become compatible with many different devices and platforms, as well as to increase the overall size of their potential user base. Additionally, Netflix originally entered the Australian market in 2015 when it entered into an agreement with two Internet Service Providers (ISPs), Net and Optus. As a result of Netflix's tremendous success in the United States, these two agreements gave Netflix access to a large new market that was also able to provide its service via a 30-day free trial program. To assist with its rollout into Asia, Netflix registered as a Limited Liability Partnership (LLP) in India to produce its own content irrespective of any third-party carriers (Joonas et al., 2023).

Description of Company's Business: Netflix

The video rental industry began to grow with the DVD rental service known as Netflix, which was originally founded in 1997 as a subscription-based video rental business. The original service was limited to providing DVD rentals via mail for a monthly fee to customers in the United States. Over the next 20 years, Netflix expanded into a global provider of movies and television programming by providing video on demand (ViD) in more than 190 countries around the world and accumulating more than 221 million paid subscribers as of October 2023 (Feuerverger et al., 2012). Netflix offers a vast library of content, including feature films, documentaries, and various types of television series. In addition to a large collection of third-party content, Netflix produces original television programming ranging from drama and comedy to foreign-language programming. One major advancement for Netflix was when it began offering an "over-the-top" (OTT) service and introduced streaming to its customers, which Netflix branded as "Watch Now." The ability to watch movies and television programs in real time on a personal computer was a major development for Netflix and a clear indication that streaming would ultimately be the most popular method of accessing entertainment. In 2008, Netflix established partnerships with many manufacturers

of consumer electronics, allowing its subscribers to stream Netflix's content on devices such as Blu-ray disc players, Xbox gaming consoles, and television set-top boxes. By 2010, Netflix was available on multiple Internet-connected devices, such as the iPhone, iPad, and iPod Touch, and had approximately 20 million subscribers. As the volume of shows streamed by Netflix subscribers surpassed the number of DVDs rented, Netflix's chief executive, Reed Hastings, publicly stated that Netflix now operates primarily as a streaming service and offers DVD rentals only as a small percentage of its total business. Netflix commenced the development of original television shows in 2013 while still providing both original films and documentaries to consumers through a licencing agreement. As of December 2022, Netflix had 221 million subscribers and charged subscriptions between \$15.99 and \$99.00 per month (Stoll, 2023). In 2013, the company had an approximate market value (2012). The company also faced several other challenges, including sensitivity to pricing, differing regional languages, cultural differences, and intense competition from numerous domestic and international OTT-based competitors. In 2007, Netflix adopted an online streaming platform that provided viewers with an instant enjoyment experience via their computers and TVs. In addition, they developed partnerships with other manufacturers of consumer electronics to enhance compatibility and provide customers with a global customer base. In 2015, Netflix registered its business with the Australian Partnership with iiNet and Optus Internet Service Providers in an attempt to expand into Australia; this was partially attributed to their rapid success within the U.S. market as well as Netflix's free month trial of its services. As part of its Asia penetration rollout strategy, Netflix registered as a limited liability partnership in India to begin commissioning its content (Joonas et al., 2023). In addition, in January 2016, Reed Hastings (the founder and CEO of Netflix) announced the global expansion plans for Netflix when he spoke on the stage of the Consumer Electronics Show (CES) in Las Vegas, USA, that he planned to offer Netflix streaming service in more than 130 countries by the end of 2016, including Indonesia.

2. Literature of Review

Advanced technologies such as Machine Learning (ML), Blockchain, and Sustainable IT solutions are transforming many areas of healthcare, corporate intelligence, and environmental sustainability. These technologies can work together to increase operational efficiency and address critical issues such as data security, compliance with ethical standards, and solution scalability. Machine Learning is now an essential component of healthcare because it uses data from electronic health records (EHRs), wearable devices, and genetic data to create accurate predictive analytics for individuals and personalized treatment plans. Supervised learning models may achieve a level of success ranging from 85% to over 90% in predicting future illnesses and assisting in the management of health care resources. The transition from conventional statistical methods to modern machine learning techniques (e.g. Neural Networks, Random Forests) in business analytics show that using advanced algorithms provides improved prediction accuracy and valuable operational insights (Rahaman et al., 2023; Islam et al., 2024). However, despite the enormous potential of machine learning in both healthcare and business, there are barriers to its use, such as data quality, algorithm understanding, and related ethical issues. Many machine learning datasets are extremely large and complex and require extensive data preprocessing before they can be used for analysis. Data preparation can take up to 40% of the total effort devoted to creating machine learning solutions in a healthcare environment. Data cleansing and de-identification are necessary for some of these actions to be performed. Many of the algorithms used in machine learning, especially deep learning algorithms, are difficult to interpret and do not provide clear reasoning for their results. Therefore, deep learning algorithms typically pose issues in heavily regulated industries such as healthcare (Islam et al., 2024). AI/Machine Learning has provided value like other AI technologies, including the delivery of personalised content recommendations, supporting content discovery, and creating integrated user experiences, all contributing to the realisation of more meaningful and long-lasting customer engagements. With the ability to use sophisticated algorithms to analyse user data, Netflix can create customised recommendations that align with each member's unique viewing preferences, ultimately increasing the time they spend watching content and their overall satisfaction with Netflix (Abishek & Judi, 2025). AI personalisation utilises components of ML algorithms, such as collaborative filtering and deep learning, to create tailored user experiences. Collaborative filtering utilises user/item similarity to recommend items based on what other similar users prefer or recommend items based on user interactions with similar featured content. Additionally, all models continue to update recommendations with each new data point received, allowing for real-time adjustments to reflect changes in user preferences (Koren et al., 2009). AI increases customer engagement, satisfaction, and loyalty through specific interests, behaviours, and needs.

Customers in e-commerce use AI to help them find and purchase recommended items. Customers may also be offered price points that will assist in retaining them. Only by using AI will platforms recommend appropriate social media content or feeds, thus creating loyal social media user. AI adds value by assisting in recommending more relevant content to SaaS users. This will enable service platforms to deliver more user-centric and efficient software functions that adhere to the custom requirements of their end users (Cherukuri, 2024). The recommendation model (previously known as "the recommendation rule") has been improved by implementing more dynamically changed AI opinions. For example, in e-commerce, an AI recommendation system can predict which products can be recommended to customers based on their previous shopping behaviour, purchasing history, and popular trends. Similarly, social media AI algorithms can recommend more relevant content to users through their content feeds, which can provide a better user experience and create a more engaged user base (Ricci et al., 2021). AI-driven personalised recommendations will utilise the analysis of vast amounts of data—comprising user behaviour (both past and present), user preferences, and user location—to provide actionable insights to e-commerce and social media platforms to enhance the platforms' ability to deliver extremely relevant content. Each user is provided with a customised and engaging experience through the e-commerce platform, giving them a personal connection to the platform itself. The principles behind AI-powered personalisation are an ongoing process of continuous learning and adaptation, as AI algorithms continue to collect information about individual users over time and continue to adapt their understanding of each user's individual preferences based on how they interact with the e-commerce platform, as well as modify their recommendations accordingly (Venkatachalam & Ray, 2022). AI-powered enhanced personalisation strategies can create differentiated and unique customer experiences while driving repeat business and promoting brand loyalty. Another key element of an effective e-commerce platform is providing customers with highly integrated and seamless omnichannel experiences. The integration of AI will provide a consistent and personalised customer experience across multiple channels, including websites, mobile applications, and social media. Businesses can differentiate themselves from their competitors by utilising innovative and new technologies such as visual search or AR applications (Raji et al., 2024). The implementation of AI-powered personalisation will provide businesses with highly valuable data insights that can be used to support overall business strategies. Analysing customers' individual preferences and behaviours can help businesses identify trends, improve their inventory management processes, and enhance their marketing strategies to better align with the needs of their customers (Agoro et al., 2021).

3. Research Methodology

This research paper utilises a foundational/case-based approach to analyse the use of AI-driven personalisation in improving customer experiences and how that affects consumer buying behaviours at Netflix, an industry leader in providing digital content. For the most part, the findings and conclusions presented in this paper are based on the evaluation of secondary data collected from peer-reviewed sources, including but not limited to a large number of research papers from academia, a comprehensive review of the business literature, and a comprehensive analysis of empirical studies conducted on previous research regarding the application of artificial intelligence to develop personalised digital environments (Huang & Rust, 2018; Wedel & Kannan, 2016). The data utilised to conduct this research were collected from a multitude of peer-reviewed journals, market research reports, corporate publications, and reputable web-based sources with the goal of developing an accurate understanding of personalisation through artificial intelligence and its related behavioural consequences. This approach is aligned with past case-based approaches related to technology-enhanced buyer behaviour, as described by Adomavicius and Tuzhilin (2005) and Tam and Ho (2006). A case-based review was used to evaluate how AI can impact consumer behaviour through the use of different digital media tools and techniques that Netflix employs (such as algorithmic recommendations, predictive analytics, and content recommendations). Each of these tools/techniques has a large impact on consumer engagement, content discovery, and user retention (Ricci et al., 2021). A conceptual evaluation was created that focused on these three areas:

- **AI-driven personalisation techniques:** Examining how recommendation systems, machine learning algorithms, and content ranking mechanisms influence user choices and viewing behaviour.
- **User engagement metrics:** Analysing indicators such as watch time, click-through rates, session duration,

and binge-watching tendencies under the influence of personalised recommendations.

- **Satisfaction and loyalty indicators:** Evaluating how personalised experiences contribute to user satisfaction, reduce churn rates, and increase subscription retention.

This study is limited in its ability to capture real-time behavioural data, as it predominantly depends on secondary sources and conceptual interpretation. Additionally, the absence of primary data collection, such as user surveys or interviews, restricts the analysis to theoretical and industry-level insights rather than individual-level behavioural validation. Furthermore, issues related to personalisation and privacy concerns are acknowledged as critical factors influencing consumer responses (Awad and Krishnan, 2006).

AI-Driven Efficiency in Netflix

Integrating Artificial Intelligence (AI) within digital platforms improves operational efficiency and drives growth in content-focused business models such as Netflix. Many of the efficiencies created by AI result from means that can optimise user experiences and company performance via advanced recommendation systems, real-time data processing, and predictive analytics. For example, the recommendation engine implemented by Netflix provides a substantial amount of automation, allowing users to discover content, and the resulting efficiencies give users a significantly higher level of engagement when using Netflix (Gomez-Uribe & Hunt, 2015). A significant factor in Netflix's ability to create these operational efficiencies is its advanced recommendation engine, which uses machine learning techniques (including collaborative filtering and deep learning) to exploit and analyse millions of data points on millions of users' interactions to anticipate their content preferences so that the platform can deliver personalised content recommendations. Since nearly 80% of the content that users consume on the platform occurs via recommendations from the platform, these types of AI tools are highly effective in streamlining the decision-making process for users (Amatriain, 2013). As users are presented with more relevant content to choose from, the user experience improves and consumption efficiency increases, resulting in better user retention and decreased churn rates. Huang and Rust (2018) note that firms leverage AI technologies to deliver timely and relevant content to strengthen customer relationships and loyalty through ongoing personalisation of their interactions with customers. For example, Netflix personalises its recommendations based on each user's interactions with the platform, allowing the company to maintain its customers' engagement for longer periods of time. These measurable benefits from dynamic personalisation are estimated to save the company over \$1 billion per year by reducing customer churn and increasing the lifetime value of subscribers. Another way Netflix leverages AI for increased operational efficiency is by processing and analysing vast amounts of user data in real time. Each user's activity creates a continuous stream of interactions that generate millions of individual data points, which Netflix then uses to create a scalable AI model that classifies each user into a unique user group. By grouping users based on their behaviour, Netflix can provide experiences at scale within the framework of extremely high levels of personalisation, often referred to as "taste clusters. While Netflix leverages AI recommendations to create operational efficiency, it also utilises artificial intelligence algorithms to optimise both the user interface layout and the overall content offered on the site for all users. For example, Netflix leverages an AI algorithm to personalise the design of the images or thumbnails used to represent content on their platform, tailoring the design of the images based on a user's viewing history and preferences. According to Agrawal et al. (2018), AI technology lowers the costs associated with decision-making and improves user engagement and efficiency by providing users with relevant choices. Reducing the cognitive load on the user is accomplished through optimised content selection, which increases the click-through rate as well as the user experience overall. Therefore, AI efficiency benefits both strategic decision-making and content generation processes. One example of how Netflix utilises predictive analytics is to evaluate whether their upcoming content will be successful prior to creating or acquiring it. By collecting data on past viewership habits and audience preferences, Netflix will utilise this analytic tool to guide investment decisions, thus minimising any uncertainty or financial risk associated with its decisions. Myers, Abell, and Sani (2020) emphasised the role of predictive technologies as a means of aligning an organisation's offerings with consumer needs in terms of efficiency and effectiveness. This allows Netflix to maintain its competitive edge in one of the most rapidly evolving segments of the digital media industry. While there are many positive aspects of AI efficiencies, there are several challenges with them as well. Some of these challenges are algorithmic bias, lack of transparency within algorithms, and concerns regarding consumer privacy, which may prevent users from developing trust in the AI systems being used and reduce

the effectiveness of those systems in improving overall user experience. According to Dawar (2013), there is also a risk of creating unintended consequences of being overly reliant on automated systems, which may take away consumer autonomy or create ethical dilemmas. In addition, ongoing investments in technology are required to ensure the accuracy and scalability of AI models.

Impact of AI Personalisation on Customer Engagement

Creating customised consumer experiences is a major focus for businesses today because of the need to reach today's consumers. Using analytics, AI-based tools can be used by organisations to create customised communications, recommendations, and other content by analysing behavioural and user preference data (Davenport, R.; Huang, R.; Rust, R.; 2020). The result of this is that there is a higher degree of relevance in marketing activities, an increase in trust by consumers, and an enhanced consumer journey for all (Kietzmann, J. et al.; 2018). In addition, using dynamic personalisation methods may be the solution to bridging the gap between traditional and generic marketing approaches with the unique demands presented by new digital consumers (Lemon and Rust, R.; 2016). Ahmed, H. et al. (2025) state that once an organization incorporates artificial intelligence, organisations will be able to provide consumers with personalised experiences in order to increase engagement with the brand. Therefore, AI is one of the most revolutionary technologies, as it will change the way marketers operate in the new landscape, from improving personalisation to increasing engagement, loyalty, and marketing performance (Sherly Steffi, A.; et al.; 2024). Finally, AI-driven marketing will change the way marketers connect with consumers by providing them with a new level of insight into customisation, efficiency, and personalisation (William, N.; 2024). As a leader in the streaming industry, Netflix utilises AI technologies to analyse vast amounts of user data to predict preferences, recommend shows and movies, and create original content tailored to specific audience segments. Although there is a strong consensus among most people that artificial intelligence has unprecedented technological capabilities, how it will directly affect the engagement and behaviour of consumers in this regard is still being explored. One of the primary uses of AI at Netflix is through its recommendation engine, which runs on machine-learning algorithms. Netflix uses its recommendation engine to process large amounts of data about a viewer, such as their viewing history, how they have rated movies, and the pages they have visited, and generates recommendations based on those metrics for the user to view. The algorithms behind Netflix's recommendation engine use collaborative filtering, content-based filtering, and deep learning to continuously adjust to the ever-evolving preferences of their users and become more accurate over time. Therefore, personalised recommendations significantly contribute to the level of engagement an individual has with Netflix. Maintaining and growing consumer engagement is not without its challenges; Netflix has to address several obstacles associated with privacy, algorithms that create bias, and the diversity of the content available on the platform. Netflix needs to provide an environment in which its users trust them and therefore trust that their data are used transparently, their algorithms are free of bias, and content is recommended without regard for race, ethnicity, sexual orientation, or disability. Continuous improvements to Netflix's algorithms through AI ensure that the recommendations received by users remain useful and relevant (Abishek & Judi, 2025).

AI for Personalized User Experiences User Experience

Schrepp et al. (2017) analysed user experience as a group of six variables, including

attractiveness, perspicuity, efficiency, reliability, stimulation, and novelty which are the basis for evaluating user experience for any interactive product. An evaluation of user experience provides an understanding of how to measure business in terms of service offerings for the applications that they cover. The user experience to provide users with needs is to deliver that value to the correct user without creating distractions or disturbances from their other activities. The next area of creating a user experience is a simple and elegant design that creates an enjoyable product to own and an enjoyable product to use. A true user experience exceeds what the customer desires based on what they have requested or providing them with a basic list to complete. To develop a high-quality user experience model offered to customers by a business, the model should include a collaboration of services from separate areas, such as the design of the product (engineering, marketing, graphic, and industrial) and the design of the interface (Rezaldy & Telkom, 2019). Users make decisions based on what feels comfortable as well as their requirements (Muhammad et al., 2016). User Experience can demonstrate the perceived ease of use and efficiency of the user experience engaged with the system (Kusuma et al., 2016). User Experience influences user behaviour if it matches user expectations when using streaming video content through a company such as Netflix. A higher quality of Netflix service will

provide a better overall experience for people using the service.

Personalized Recommendations

Machine learning, or AI, is one of the most important uses of AI at Netflix, specifically in their recommendation engine. The recommendation engine is powered by machine learning algorithms that look at user data, such as how much they have watched of a show or movie, ratings, and how they browse through the site to recommend movies and TV shows that are a good fit for someone's preferences. The recommendation system can do this by utilising collaborative filtering and content-based filtering, as well as using deep learning methods to adapt to a user's preferences as they change and become more accurate over time. Because of the recommendations from the recommendation engine, users can find movies and/or TV shows that they would like to watch, increasing both the amount of time they spend watching content and their likelihood of returning to watch more content in the future.

Netflix's recommendation system

Netflix uses a recommendation system that interprets user data (including their viewing history, rate of their shows, and how they interact with the website) to deliver tailored recommendations for content to watch based on individual users' viewing patterns and lists of watched shows. Thus, the primary way in which this is achieved is through a hybrid of collaborative-rated and content-based filtering. (Matuszewska, 2025).

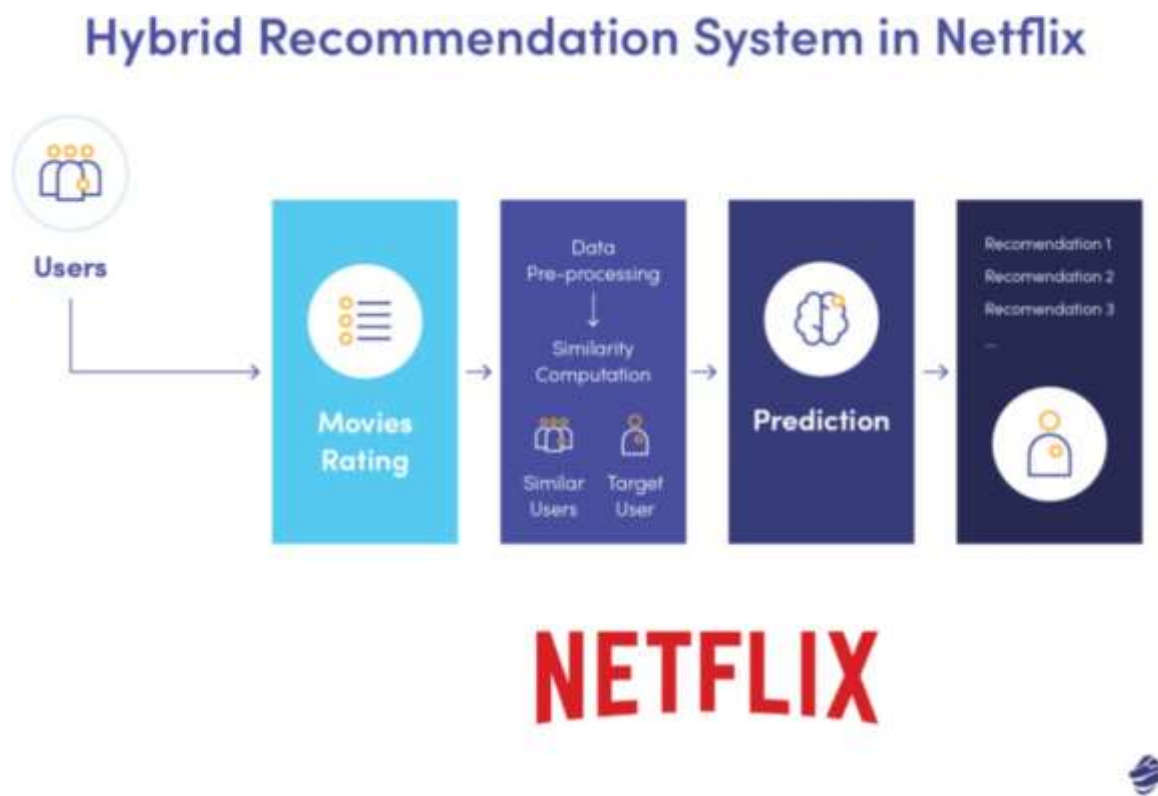


Figure 1: Netflix Recommendation System

Source: Matuszewska (2025)

Content Curation and Discovery

AI is significantly responsible for content curation in the media. An example of this is Netflix which uses AI to automatically classify and label its library content. With this feature, Netflix can group comparable titles according to many factors, including the content theme, genre, or feel of each title in question, thereby creating a simpler process for a user to discover new content to watch based on their interests. AI systems will also create "collections" of prebuilt binge-worthy lists tailored to a viewer's past viewing habits so that viewers can browse through custom

playlists specific to their preferences and viewing behaviours.

Search Functionality and Natural Language Processing

The use of AI in search functions has greatly improved the experience of users on streaming platforms such as Netflix through the application of Natural Language Processing (NLP) technologies to better understand user intent and deliver better contextually relevant search results. Unlike keyword-only searches, Netflix's search integrates recommendation algorithms to better understand complex queries and correlate them with user preferences. For example, users that enter descriptive queries like "comedy", "romantic", or "action" or provide some other type of contextual description (e.g. "pieces set in the 1850s ", "scares me to death", or "very funny") will receive recommended results not only based on accurate match(es), but also based on relevance and user preference. Therefore, combining both the search and recommendations allows users to locate content easier and with greater satisfaction (Gómez- Uribe & Hunt, 2015; Lamkhede & Kofler, 2021)

Predictive Analytics for Content Creation

Beyond content recommendation and discovery, Netflix strategically leverages artificial intelligence and data analytics in its content creation and acquisition decisions. By analysing vast amounts of user data, including viewing patterns, demographic insights, engagement metrics, and regional consumption trends, Netflix can predict audience preferences and identify high-potential genres or themes. This data-driven approach enables platforms to make informed decisions regarding the original content to produce or invest in. Machine learning models and predictive analytics are also used to forecast content performance and optimise production strategies, thereby reducing the uncertainty traditionally associated with creative industries. Consequently, Netflix's reliance on data-driven insights has contributed to the development of highly successful original productions and strengthened its competitive advantage in the global streaming market (Ali et al., 2025; Sahoo & Dutta, 2024).

AI-Driven Optimization of Streaming Quality

Netflix relies heavily on AI technology to provide a better streaming experience by enhancing the quality of streamed videos on a variety of devices and under different networking environments. The adaptive streaming technology that Netflix uses is powered by machine learning algorithms that enable real-time adjustments in the quality of streamed video content based on different factors related to the user's bandwidth, their device's capabilities, and the stability of their network connection. Rather than sending out a single fixed quality stream to all users, Netflix instead uses an adaptive bitrate streaming (ABR) system along with predictive algorithms to determine the appropriate bitrate and video resolution to play at the time of playback. Thus, the machine learning models used by Netflix continually monitor fluctuations in the user's network connection and proactively adjust the video quality to prevent buffering or interruption of playback. Other techniques, including advanced encoding (such as "per-title" encoding) and machine learning-based quality metrics (such as VMAF), are also leveraged by Netflix to ensure that the video quality remains high while maximising the user's bandwidth efficiency. Overall, this intelligent optimisation provides users with a seamless viewing experience and ensures a high level of user satisfaction (Ekanadham, 2018; Netflix Tech Blog; Butts, 2023).

Enhanced User Interface and Personalization

Netflix's personalisation of its user interface (UI) through AI is an important part of its strategy for optimising the overall experience. This allows them to dynamically adjust the UI based on user data, including viewing history, interactions, and preferences, to display content that is most relevant to the user. Beyond recommending content, personalisation includes the way content rows are organised, how genres are highlighted, and how titles are visually represented. One technique that Netflix uses for this purpose is personalised artwork selection, which allows different users to see different artworks for the same piece of content based on what they have chosen in the past. Personalised artwork selection has been shown to engage users and create relevance in their minds. Adapting the UI in this way makes it easier for users to discover content and creates a more intuitive and immersive way for users to watch (Amat et al., 2018; Amatriain & Basilico, 2015; Zielnicki et al., 2025).

Conclusion

Research has indicated that personalisation using artificial intelligence (AI) leads to many benefits for consumers in e-commerce activities by enhancing engagement and loyalty through personalised experiences (Iqbal et al., 2025). Several websites (including Netflix) provide personalisation through AI-based predictive algorithms which analyse individual user preferences to provide greater personalisation and help deliver the best experience possible for the consumer by providing them with recommendations based on their previous browsing history (Raji et al., 2024). AI systems have an adaptive structure which allows them to continually revise their recommendations based on past user interaction data, causing increased viewing times and increased satisfaction from total viewing time (Babatunde, et al., 2024). As such, AI-powered product/collaborative consumption recommendations will create a more satisfactory experience for consumers (because of a higher level of match between what a consumer wants and a recommended product), and therefore will enhance the likelihood that a purchase will occur and will increase the chances of a consumer being loyal to the company by increasing the perceived benefit associated with the customised recommendations provided through the use of AI systems to create an aesthetically pleasing and formalised profile of the consumer (BAŞER and Akıncı, 2020). Considering that investing in high-quality AI personalisation engines will provide organisations with increased customer retention through a better understanding of the relationship between AI personalisation and customer engagement (i.e. higher levels of retention will result from using AI personalisation; see Leghemo et al. 2024; Mishra et al. 2026), based on this success, major e-commerce sites (for example, Airbnb, Spotify) have seen significant increases in conversion rates, resulting in; additionally, the use of AI has allowed both to enhance their respective search algorithms and provide users with personalised content that meets their specific requirements (i.e. search parameters). The data reveal that AI plays a major role in changing consumer interactions in digital environments. In addition, organisations are leveraging AI to enhance customer experience through brand loyalty across multiple digital ecosystems (Ahmed et al., 2025; Kamkankaew et al., 2024; Sipos, 2025). For organisations to effectively leverage AI for personalisation, it is critical that they develop a sufficient data infrastructure and advanced tools for analysing the data complexities associated with integrating multiple data sources through sophisticated statistical methodologies to eliminate any potential biases associated with the algorithms used to develop the AI applications and cultivate an ethical corporate culture that establishes trust with the customer base (Babatunde et al., 2024; Iqbal et al., 2025).

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