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Netflix, Inc.: The Mouse Strikes Back

Mickey Mouse had plans to join the streaming game.

In 2017, the Walt Disney Company announced it would launch a competitor to online video purveyors like Netflix in the next several years.[1]

Disney Plus would be a paid subscription service offering access to all Disney and Fox Corporation content, along with new shows and movies and including 100% of the Marvel, Lucasfilm, Pixar, and *National Geographic* catalogues. Disney would also house its latest acquisitions, Hulu and ESPN Plus, on its new, web-based streaming platform.

Disney Plus was slated for launch in late 2019, and consumers and investors alike were squeaking with excitement. Did Netflix, the dominant player in the streaming-video market in early 2019, have what it took to keep up with its newest competitor? And which of its existing and emerging strategic areas—its recommendation system, global expansion, original content, and so on—would be most critical in delivering value in the short and long term?

A Technological History

The traditional retail rental store

With the advent of videotape, acceptance of the VHS cassette standard, and subsequent affordability of home videocassette players in the 1980s, the movie-rental business exploded. By the 1990s, the majority of market share had consolidated to a few participants with similar business models competing on selection, price, and location. National chains, such as Blockbuster and Hollywood Video, grew by staking claims in strategically located, population-dense areas. By 1990, Blockbuster professed to have a store within a 10-minute drive of 70% of the US population.

Movie rental required customers to leave their homes with the intention of renting, then make a spontaneous decision based on what was available at the video-rental store. The cost of a video rental ranged from $3.00 per week for older movies to $6.00 per three days for new releases. Small mom-and-pop stores typically had a collection of a few hundred videos for rent; a Blockbuster store had about 2,500. Videos paid for themselves after 13 rentals, so films with mass appeal were the norm; nearly 70% of all films rented at

[1] Mike Sorrentino and Joan E. Solsman, "Disney Plus Streaming Service: Release Date, Price, Shows, and Movies to Expect," CNET, July 22, 2019, https://www.cnet.com/news/disney-plus-shows-movies-price-release-date-avengers-marvel-star-wars-black-panther-130-million/ (accessed Jul. 30, 2019).

Blockbuster were new releases. Limited selection and stock-outs were common concerns, as was the relative convenience of store hours.

Late returns were a thorny problem: a movie could not be rented to a new customer until it was back on the shelf, and a scarcity of titles might deter customers from returning. So video stores charged late fees, which monetized the delay and encouraged prompt returns. In reality, as one commentator noted, late fees called attention to customer failure, in the manner of "a disapproving librarian tallying up 35 cents in overdue fines while floating the unspoken accusation you were irresponsible on top of everything else."[2] When Blockbuster eventually dropped many forms of late fees, the move resulted in a boost to revenue of $400 million. The brick-and-mortar value proposition was eroding.

DVD by mail

DVD mail service started to gain popularity in the early 2000s. A subscribing customer selected a movie on a website, and a DVD would arrive at their home in about one business day. The customer could keep the DVD as long as they liked, then mail it back to the provider in a prepaid envelope. By selecting multiple movies and arranging them in order of priority in an online queue, the customer could ensure prompt delivery of subsequent selections and always have something on hand to watch. Subscription tiers were based on how many movies a customer could receive simultaneously and were priced accordingly, starting at $7.99 per month for one movie at a time from Netflix.

Kiosk rentals

Movie rental kiosks, freestanding dispensers of DVDs, began emerging in the early 2000s. They were located in high-traffic areas such as convenience stores, grocery stores, and fast-food restaurants, and they offered extended—sometimes 24-hour—access. Redbox, the dominant player, was founded in 2003 and was originally funded by McDonald's. As of 2012, Redbox claimed to have already rented 1.5 billion movies from 30,000 kiosks nationwide and to operate a kiosk within a five-minute drive of two-thirds of the US population. Its only significant competitor at the time was a much smaller player, Blockbuster's "Blockbuster Express" kiosks. Kiosks revolutionized the rental price point (about $1.00 per night per movie) and changed consumer renting behavior by eliminating the planning ahead required by DVD-by-mail services as well as the need to go to another location as required by rental stores. Plus, 24-hour access freed customers from time constraints. Selection, however, was limited by two major shortfalls: the physical space inside the kiosk and delayed releases to kiosks by movie studios wary of cannibalizing DVD sales.

Video on demand

The next major technological advancement was video on demand, content distribution via internet-connected television, computer, or mobile device. The customer selected a movie from an online menu and, within seconds, the movie began streaming to their device. The customer could view the content as it was downloaded, rather than waiting for the complete file. No exchange of a data-storage medium was required, so stock-outs and late fees were avoided, and a significantly larger and more eclectic catalog could be offered.

[2] Tara Lemmey, "Push the Positive for Customers," Bloomberg Business online, September 12, 2005, http://www.bloomberg.com/bw/stories/2005-09-12/push-the-positive-for-customers (accessed Jul. 21, 2015).

A Dominant Player

Netflix, which began as a web-based direct mail video-rental service, joined the online streaming business in 2010 and soon came to sit at the top of the market. By 2016, it had captured about a third of the worldwide streaming market share, operated in more than 190 countries, and had produced more original series and films than any other media outlet.[3]

Netflix's journey to streaming dominance, however, was not without its failures. When the company announced a plan to split its on-demand video streaming and DVD mail delivery into two businesses and increase the price of its most popular service in 2012, it faced near-universal criticism. Netflix abandoned the plan within a month, having lost 800,000 subscribers and half its stock value (see **Exhibit 1**).[4] Netflix faced another steep decline in the third quarter of 2018 when it reported greater losses compared to third-quarter losses in 2017. Some in the popular press speculated that the announcement of Disney's upcoming streaming service also contributed to the decline in stock price.[5]

Reed Hastings had founded Netflix in 1997 in Los Gatos, California, after paying $40 in late fees to the local video store for *Apollo 13*, and later asking, "How come movie rentals don't work like a health club, where, whether you use it a lot or a little, you get the same charge?"[6] The key was to let people watch movies whenever they wanted. The Netflix DVD-by-mail model was simple, fast, and convenient: the company claimed it could ship videos to most customers in less than 24 hours. And within two years, Netflix had eliminated late fees. Customers paid a fixed monthly fee of about $16, rented as many as four movies in a single order, and kept films as long as they wanted. Longer rental periods, in fact, lowered Netflix's shipping costs. Customer retention, however, depended on more rentals per month: the more rentals per month, the more value customers placed on the service. As Hastings stated, "If [the customers] rent just two movies a month, they may decide it is not worth it."[7]

The link between number of rentals and customer retention made Netflix's movie recommendation system critical: good recommendations increased queue length, which increased retention and customer lifetime value (CLV).[8]

Netflix invested significantly in data-mining technology to expand its customer base and reduce reliance on popular films. The firm developed a simple but effective recommendation algorithm, which compared each user's purchases to those of customers with similar tastes, in order to suggest highly rated films and shows the user had not yet seen from a catalog of over 5,500 titles (in 2018). Netflix typically picked up revenue from a broad distribution of preferences.

As the Netflix catalog grew, its recommendation system grew more robust.[9] In January 2000, Netflix introduced CineMatch, an algorithmic recommendation system. Each customer was prompted to rate movie genres and specific movies on a scale of one to five stars. The program found other customers in the Netflix database with similar preferences and offered a predicted star value for each movie. As customers rated more films, accuracy improved substantially. "Over 50% of our traffic comes via the recommendation system,"

[3] Rani Molla, "Netflix Makes Up Nearly 30 Percent of Global Streaming Video Subscriptions," Vox, April 16, 2019, https://www.vox.com/2019/4/16/18410556/netflix-30-percent-global-streaming-video-subscriptions-q1-2019 (accessed Jul. 30, 2019).

[4] "Netflix, Inc.: Summary," Yahoo! Finance, https://finance.yahoo.com/quote/NFLX (accessed Jul. 30, 2019).

[5] Daniel B. Kline, "Why Did Netflix, Inc. Shares Drop 19% in October?," *Motley Fool* (blog), Yahoo! Finance, November 11, 2018, https://finance.yahoo.com/news/why-did-netflix-inc-shares-004900338.html (accessed Aug. 13, 2019).

[6] Chris Taylor, "The Movie Is in the Mail," *Time*, March 18, 2002, 67.

[7] Alan Cohen, "Netflix: DVDs at Your Door," PC, February 19, 2003.

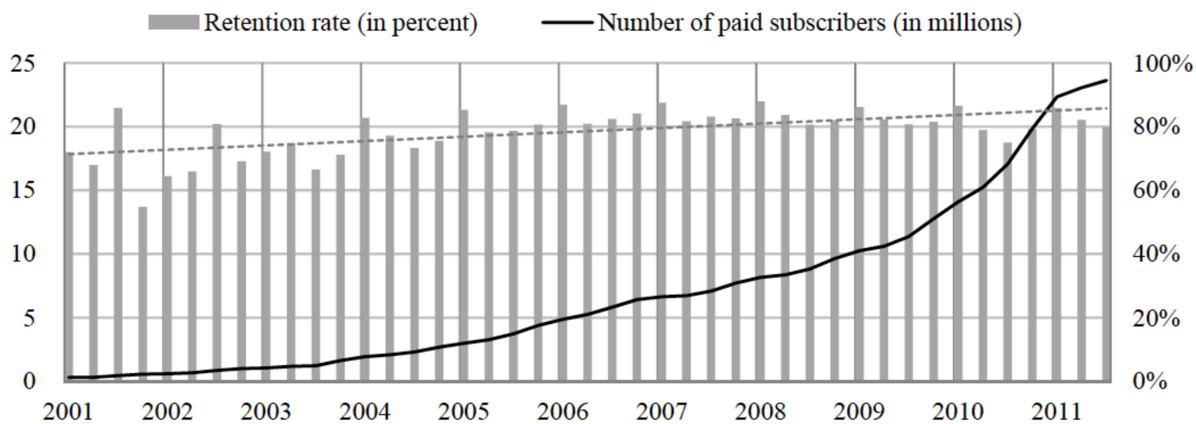
[8] For more on CLV, see Phillip E. Pfeifer, Paul W. Farris, and Neil Bendle, "Customer Lifetime Value," UVA-M-0800 (Charlottesville, VA: Darden Business Publishing, 2011).

[9] For more on recommendation systems, see Rajkumar Venkatesan and Shea Gibbs, "Highly Recommended: Collaborative Filtering Gives Customers What They Want," UVA-M-0974 (Charlottesville, VA: Darden Business Publishing, 2019).

Hastings said in 2003. "It requires a lot of database work done in real-time."[10] By 2007, Netflix had close to 1 billion movie reviews, with customers reviewing an average of 200 movies each.

During its mail-order DVD-focused period, Netflix's CLV depended on the extent to which the firm could leverage its large catalog by encouraging customers to rent more. Its target for per-customer monthly orders was five, the Netflix corporate average. Special promotions encouraged current customers to refer the service to friends and family; efforts resulted in an upward trend in customer retention. See **Figure 2** for a graph of retention and customer numbers, based on Netflix annual reports for each quarter; the graph ends in 2011, before Netflix began expanding globally and focusing on creating new content.

Figure 2. Paid subscribers and retention from 2001 until 2011.



Source: Netflix Q1 earnings report, 2012.

Netflix, Part II

After 2010, Netflix began to shift from being a mail-order company that also offered a streaming option to a firm focused mainly on online content delivery. By 2019, the firm would have only 2.7 million mail-order subscribers, as compared to 58.5 million US subscribers in total.[11] That meant its recommendation system, original content, and international customer base had become far larger parts of its value proposition than ever before.

Driven by its increasingly robust collaborative filtering algorithms, Netflix's CineMatch generated more than 50% of the firm's traffic by 2003.[12] The system was so valuable, Netflix wanted to find a way to make it even better at predicting how much customers would like movies. The company offered a $1 million prize in 2006 to any group developing an engine that could beat CineMatch's accuracy by 10%. Netflix anonymized its database and made it publicly available, so anyone could use it to develop new algorithms and compete with CineMatch. After many years of failed attempts, a team across multiple continents came together to beat CineMatch by more than 10% and win Netflix's $1 million prize.[13] In truth, the price was minimal for a collaborative filtering algorithm expected to drive Netflix profitability for years to come.

[10] Cohen.

[11] Neil Monahan and Brandon Griggs, "Why 2.7 Million Americans Still Get Netflix DVDs in the Mail," CNN, April 4, 2019, https://www.cnn.com/2019/04/04/media/netflix-dvd-subscription-mail-trnd/index.html (accessed Jul. 30, 2019).

[12] Cohen.

[13] "Netflix Prize: Congratulations!," Netflix, https://www.netflixprize.com/index.html (accessed Jul. 30, 2019).

As Netflix moved into its online streaming phase after 2010, its recommendation system continued to increase in value. Users were offered movies aligned with their preferences directly on their computer screens; all they had to do was click on a new title to continue streaming Netflix, further increasing the value of the service. Perhaps more importantly, the recommendation system and user preference data that it had built up became critical for Netflix's original content generation. Netflix no longer had to guess which new shows might be hits. The company could draw on the millions of reviews in its database to make informed decisions about what types of shows viewers would like, which actors they preferred, which directors to hire, and so on.[14]

In 2012, Netflix had four shows to its name. Only four years later, the company's original content had increased 3,050%. And Netflix was investing more in original content than ever before—an estimated $6.3 billion in 2017. Its next closest competitor that year was Amazon, which spent $4.5 billion. Hulu, which Disney would acquire in 2019, spent $2.5 billion on original content.[15]

Netflix's international expansion took off along with its focus on streaming services. No longer tethered to mail orders, the company surpassed 50 million global subscribers by 2014. At least 14 million of its customers were located outside the United States. Netflix moved into 150 new countries in 2016.[16]

In March 2018, Netflix's stock value surpassed $300, and the firm boasted a market capitalization of $130 billion (see **Exhibit 1**). The Walt Disney Company's market cap at the time, just months after it had announced it would roll out Disney Plus in the next several years, was $155 billion.

A New Range of Business Models

As movie-rental content delivery methods emerged in the late 1990s and early 2000s, an industry participant could employ different pricing heuristics across different channels and different end-user content licenses. As such, revenue model, delivery method, and content licensing were dimensions by which each participant might be assessed (**Figure 3**).

[14] David Carr, "Giving Viewers What They Want," *New York Times*, February 24, 2013, https://www.nytimes.com/2013/02/25/business/media/for-house-of-cards-using-big-data-to-guarantee-its-popularity.html (accessed Jul. 30, 2019).

[15] Rani Molla, "Netflix Spends More on Content Than Anyone Else on the Internet—And Many TV Networks, Too," *Recode* (blog), VoxMedia, February 26, 2018, https://www.vox.com/2018/2/26/17053936/how-much-netflix-billion-original-content-programs-tv-movies-hulu-disney-chart (accessed Aug. 8, 2019).

[16] https://www.vox.com/2019/4/16/18410556/netflix-30-percent-global-streaming-video-subscriptions-q1-2019.

Figure 3. Perceptual market map for the VHS and digital eras.

	Revenue model		**Delivery method**		**Content licensing**	
Before 2000 (VHS)	A la carte	Subscription	Streaming	VHS	Rent	Buy
Blockbuster	•			•	•	
Hollywood Video	•			•	•	
Video Update	•			•	•	
Local Video Store	•			•	•	
After 2000 (digital)				DVD		
Amazon Prime		•	•		•	
Amazon Instant Video	•		•		•	•
Blockbuster	•	•	•	•	•	•
Cinema Now	•		•		•	•
DVD Café	•	•		•	•	•
Greencine		•		•	•	
Hulu	free	free	•		•	
Hulu Plus		•	•		•	
iTunes	•		•		•	•
Netflix		•	•	•	•	
Redbox	•			•	•	
Vudu	•		•		•	

Data source: Company websites.

In terms of revenue, a business was either pay-per-view or monthly subscription. The one-time fee of the pay-per-view model entitled the customer to rent one DVD by mail or online streaming access for a finite period of time. In the case of purchase, a one-time fee entitled the buyers to indefinite ownership of content.

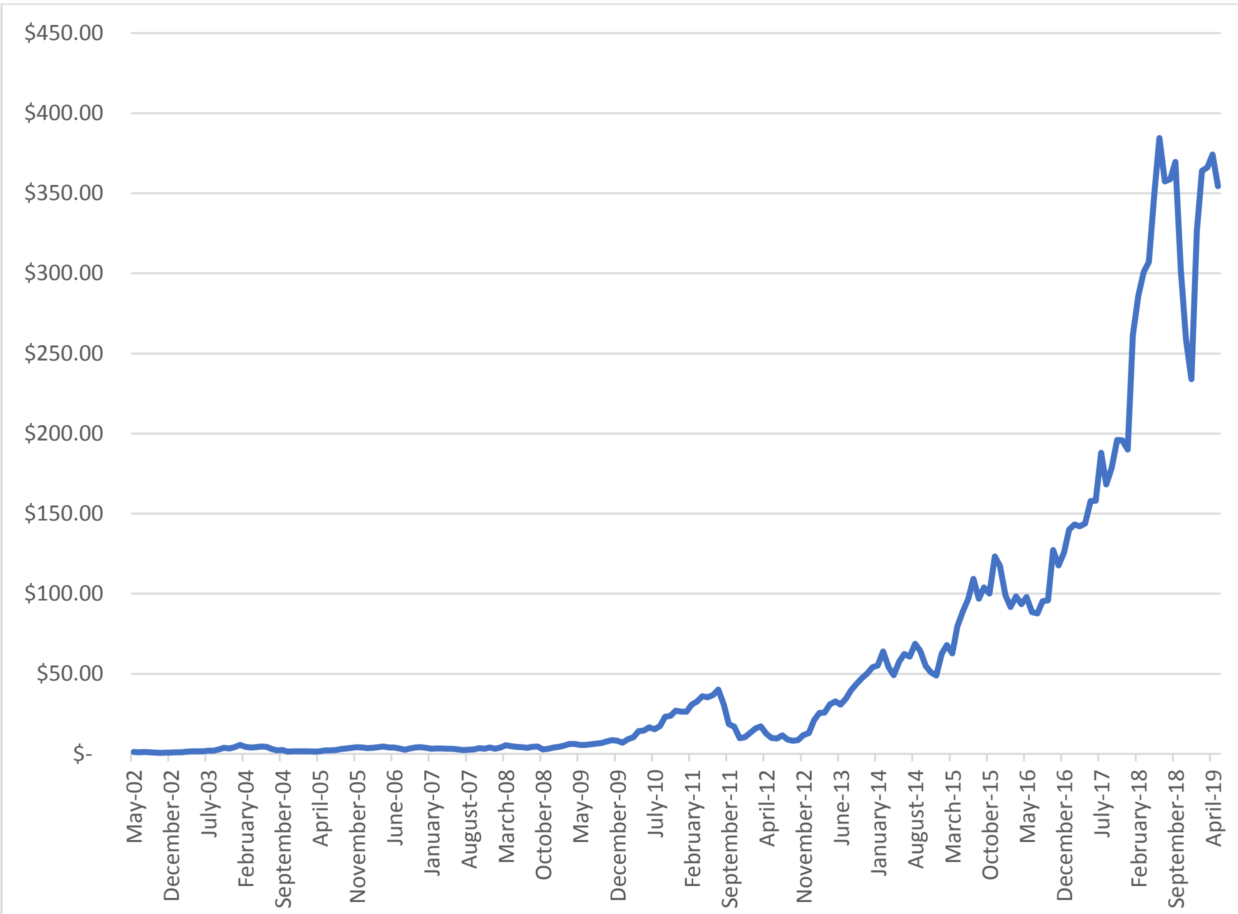
Content was either delivered by physical DVD or streamed over the internet from the service's website to the user's computer or ancillary television device; as of 2012, the dominant content-delivery system was streaming and the dominant business model utilized recommendation systems. A user's right to content varied by service provider and plan but generally fell into one of three categories: rental for a finite period of time, outright purchase for unlimited personal use, or access to an entire online library from which content could be streamed.

With streaming increasingly accounting for the majority of Netflix's revenues, how would the company withstand another strong market competitor like Disney? Recommendation systems had helped Netflix dominate so far, but how would the story unfold, now that Disney was poised to compete directly? What would be an appropriate measure of relative strength for a streaming service? Could original content be a clue? What about CLV, market capitalization, discounted cash flows, and other traditional firm valuation techniques? How sensitive was CLV to various operational and strategic changes, and what role might be played by changes in technology?

Exhibit 1

Netflix, Inc.: The Mouse Strikes Back

Netflix Stock Price and Volume from May 2002 to April 2019



Note: In August 2017, Disney announced its plan to launch Disney Plus.

Data source: Yahoo! Finance.