CHAPTER 4

Netflix in Two Acts: The Making of an E-commerce Giant and the Uncertain Future of Atoms to Bits

1. INTRODUCTION

LEARNING OBJECTIVES

1. Understand the basics of the two services operating under the Netflix business model.
2. Recognize the downside the firm may have experienced from an early IPO.
3. Appreciate why other firms found Netflix's market attractive, and why many analysts incorrectly suspected Netflix was doomed.
4. Understand the factors that led to customer exodus and stock market collapse, and identify mistakes Netflix made in rebranding the firm and splitting its offerings.

In 2011 Netflix co-founder and CEO Reed Hastings went from tech industry pinnacle to business press punching bag. For years, Netflix was known for best-in-class service, regularly and repeatedly ranking atop multiple customer satisfaction surveys. Hastings had been appointed to the Board of Directors of two of the tech industry's most influential firms—Microsoft and Facebook. The prior year closed with *Fortune* featuring Hastings on its cover as the "Businessperson of the Year." By July 2011, Netflix's profits, customer base, and stock had each hit an all time high. But a poorly-communicated repricing scheme, followed by a failed attempt to split the firm into two websites, led to an exodus of nearly a million customers in three months, a collapse of the firm's share price, and calls for Hastings' resignation.[1]

The problems in the second half of 2011 were particularly shocking since Netflix had spent several years defying the predictions of naysayers. Analysts had spent years underestimating Netflix, assuming it would be vanquished by larger, deep-pocketed rivals. One analyst referred to the firm's impending competition as "The Last Picture Show" for Netflix,[2] another called the firm a "worthless piece of crap," setting a $3 target on a stock then trading at $11 a share.[3]

Doubters were concerned because Netflix was a dot-com, an Internet pure play without a storefront and with a miniscule customer base when compared with its new competition—Blockbuster and Wal-Mart. Hastings told *Fortune* that if he could change one strategic decision, it would have been to delay the firm's initial public stock offering (IPO), claiming that the financial disclosure required by public companies tipped off others that the firm was on a money-making growth tear. "If we had stayed private for another two to four years, not as many people would have understood how big a business this could be."[4] Once the secret was out, Blockbuster showed up, bringing with it 40 million card-carrying customers, and a promise to link DVD-by-mail with the nation's largest network of video stores. Following close behind was Wal-Mart—not just *a* big *Fortune* 500 company but *the* largest firm in the United States ranked by sales. A price war ensued, Netflix was forced to increase advertising, and the outlook for Hastings' baby seemed bleak.

Fast-forward and we see that the stellar rise of Netflix throughly trounced the doomsday predictions of the naysayers. Within a year of launch Wal-Mart had cut and run, dumping their experiment

in DVD-by-mail. Blockbuster spent the next several years hemorrhaging billions of dollars, eventually declaring bankruptcy and selling out to satelite pay-TV provider, Dish Network. And that stock that was predicted to drop to $3 a share? It had instead skyrocketed past $300. Like the triumphant final scene in the movies, the dot-com did it. David knocked off not one, but two Goliaths.

Victory, right? Not so fast. At a time when Hastings seems to have achieved the pinnacle of success, Netflix was sent reeling from a sequence of gaffes that caused a customer exodus and share price collapse. The damage started when the single fee for the $10 base Netflix service was unbundled into two separate $8 plans for DVD-by-mail and streaming over the Internet. The move amounted to a 60 percent price hike for subscribers wanting to continue with both offerings, and customers rebelled. The firm's Facebook page quickly amassed over 44,000 negative comments, "Dear Netflix" complaints became a trending topic on Twitter, and customers began referring to the firm's CEO as "Greed Hastings."[5] Despite the outcry Netflix doubled-down in September 2011, announcing it would further split into two distinct services with two separate websites. The switch reads as a primer on what *not* to do when transitioning a business. The unpopular price hikes were followed by changes that actually made the firm's products harder to use by forcing customers to access two different websites, each with a separate database of offerings. Adding to the pain was the embarrassment of a botched rebranding of the DVD-by-mail service under the new name Qwikster. At the time of the rebranding announcement, Netflix had secured the domain Qwikster.com, but not the Twitter handle @Qwikster. The latter was owned by a guy whose drug referencing, foul-mouthed tweets were accompanied by a profile picture of a pot smoking Elmo from *Sesame Street.* Hastings, who stood at the peak of industry just a few weeks earlier, had become both a target of customer vitriol and an industry laughing stock, the subject of *Saturday Night Live* skits and comedian punch lines. Netflix quickly dropped plans for the Qwikster split, but it chose to hold firm with the price increase that started the slide. Over the course of 90 nightmarish days, Netflix lost over 800,000 customers, its stock tumbled from $304 a share to below $75, and its market value shed over $12 billion, including $2.3 billion in a single day.

When announcing Qwikster, Hastings wrote in a blog post that "…my greatest fear at Netflix has been that we wouldn't make the leap from success in DVDs to success in streaming. Most companies that are great at something—like AOL dialup or Borders bookstores—do not become great at new things people want (streaming for us) because they are afraid to hurt their initial business... Companies rarely die from moving too fast, and they frequently die from moving too slowly." But in this case, the poorly handled transition might just have been too much, too soon. It is true that while the DVD business built Netflix into a sector-dominating powerhouse, digital streaming is where the industry is headed. But this business is radically different from DVD-by-mail in several key ways, including content costs, content availability, revenue opportunities, rivals and their motivation, and more. If, and how, Netflix makes the transition from the certain-to-wither DVD-by-mail business to a profitable and dominant future in streaming remains to be seen.

1.1 Why Study Netflix?

Studying Netflix gives us a chance to examine how technology helps firms craft and reinforce a competitive advantage. In the next section we'll pick apart the components of the firm's DVD-by-mail strategy and learn how technology played a starring role in developing assets such as scale, brand, and switching costs that combined to place the firm atop its industry. This will also give us a chance to introduce concepts such as the long tail, collaborative filtering, crowdsourcing, and the value of the data asset. In the second part of this case, we recognize that while Netflix emerged the victorious underdog at the end of the first show, there will be at least one sequel, with the final scene yet to be determined. Act II looks at the very significant challenges the firm faces as its primary business shifts from competing in shipping the atoms of DVDs to one focused on sending bits over the Internet. We'll see that a highly successful firm can still be challenged by technical shifts, giving us an oportunity to examine issues that include digital goods, licensing, platform competition, and supplier power.

How Netflix Works: A Model in Transition

Here's how it started out: Reed Hastings, a former Peace Corps volunteer with a master's in computer science, got the idea for Netflix when he was late in returning the movie *Apollo 13* to his local video store. The forty-dollar late fee was enough to have bought the video outright with money left over. Hastings felt ripped off, and out of this outrage, Netflix was born. The firm's initial model for success was a DVD-by-mail service that charged a flat-rate monthly subscription rather than a per-disc rental fee. Under this model, customers don't pay a cent in mailing expenses, and there are no late fees. Videos arrive in red Mylar envelopes that are addressed and postage-paid for reuse in disc returns. When done watching videos, consumers just slip the DVD

back into the envelope, reseal it with a peel-back sticky strip, and drop the disc in the mail. Users make their video choices in their "request queue" at Netflix.com. If a title isn't available, Netflix simply moves to the next title in the queue. Consumers use the Web site to rate videos they've seen, specify their viewing preferences, get video recommendations, check out title details, and even share their viewing habits and reviews.

The Netflix DVD-by-Mail Model

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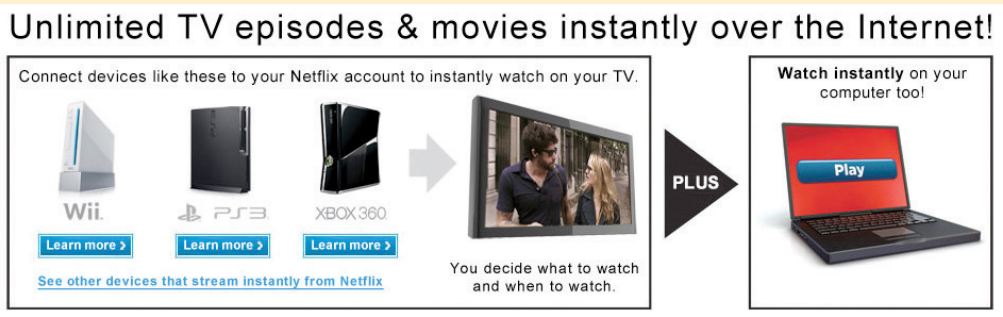
This model helped Netflix grow into a giant, but technology continues to radically change the firm. Hastings knew that if his firm was successful it would one day transition from reliance on mailed DVDs and introduce streaming video. Says Hastings, "We named the company Netflix for a reason; we didn't name it DVDs-by-mail."[6] In 2007, the firm added a "Watch Now" button next to those videos that could be automatically streamed over the Internet, and offered unlimited streaming as part of the firm's base subscription price. By 2011, the firm was so focused on digital distribution that it made a streaming-only plan the default option for consumers (the first page at Netflix.com didn't even mention DVDs or discs). The still-popular DVD-by-Mail was no longer offered in the firm's base-price product—the disc subscription service that Netflix built its user-base with had become 'an optional add-on'.

The Netflix Streaming Model



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KEY TAKEAWAYS

- Analysts and managers have struggled to realize that dot-com start-up Netflix could actually create sustainable competitive advantage, beating back challenges from Wal-Mart and Blockbuster, among others.
- Data disclosure required by public companies may have attracted these larger rivals to the firm's market.
- Netflix operates via a DVD subscription and video-streaming model. These started as a single subscription, but are now viewed as two separate services. Although sometimes referred to as "rental," the model is really a substitute good for conventional use-based media rental.
- Fear of clinging to a sure-to-shrink DVD-by-mail business model prompted Netflix management to split and reprice its services. However, the price increase, a poorly handled rebranding effort, and a process that would have made the firm's services more difficult to use all contributed to the firm's first major customer contraction and satisfaction decrease.

QUESTIONS AND EXERCISES

1. Describe the two separate Netflix offerings.
2. Which firms are or have been Netflix's most significant competitors in the DVD-by-mail business? How do their financial results or performance of their efforts compare to Netflix's efforts?
3. What appointments have Reed Hastings accepted in addition to his job as Netflix CEO? Why are these appointments potentially important for Netflix?
4. Why did Wal-Mart and Blockbuster managers, as well as Wall Street analysts, underestimate Netflix? What issues might you advise analysts and managers to consider so that they avoid making these sorts of mistakes in the future?
5. Why did Netflix split its business into two separately billed services, and why did it attempt to split the business in two? What did the firm do wrong?
6. Do you think Netflix is right to try to hasten the transition to streaming? Why or why not? What are the risks in waiting? What are the risks in moving too quickly?

2. ACT I: NETFLIX LEVERAGES TECH AND TIMING TO CREATE KILLER ASSETS IN DVD-BY-MAIL

LEARNING OBJECTIVES

1. **Understand how many firms have confused brand and advertising, why branding is particularly important for online firms, and the factors behind Netflix's exceptional brand strength.**
2. **Understand the *long tail* concept, and how it relates to Netflix's ability to offer the customer a huge (the industry's largest) selection of movies.**
3. **Know what *collaborative filtering* is, how Netflix uses collaborative filtering software to match movie titles with the customer's taste, and in what ways this software helps Netflix garner sustainable competitive advantage.**
4. **List and discuss the several technologies Netflix uses in its operations to reduce costs and deliver customer satisfaction and enhance brand value.**
5. **Understand the role that scale economies play in Netflix's strategies, and how these scale economies pose an entry barrier to potential competitors.**
6. **Understand the role that market entry timing has played in the firm's success.**

To understand Netflix's strengths, it's important to view the firm as its customers see it. And for the most part, up until the summer of 2011 what they saw they liked—a lot! The firm has repeatedly ranked at the top of customer satisfaction surveys. Ratings agency ForeSee has named Netflix the number one e-commerce site in terms of customer satisfaction in eleven out of twelve surveys conducted since 2005 (placing it ahead of Apple and Amazon, among others). Netflix has also been cited as the best at satisfying customers by the American Customer Satisfaction Index (ACSI), Nielsen, and *Fast Company* and was also named the Retail Innovator of the Year by the National Retail Federation.

Building a great brand, especially one online, starts with offering exceptional value to the customer. Don't confuse branding with advertising. During the dot-com era, firms thought brands could be built through Super Bowl ads and expensive television promotion. Advertising can build awareness, but *brands are built through customer experience*. This is a particularly important lesson for online firms. Have a bad experience at a burger joint and you might avoid that location but try another of the firm's outlets a few blocks away. Have a bad experience online and you're turned off by the firm's one and only virtual storefront. If you click over to an online rival, the offending firm may have lost you forever. But if a firm can get you to stay through quality experience, switching costs and data-driven value might keep you there for a long, long time, even when new entrants try to court you away.

If brand is built through customer experience, consider what this means for the Netflix DVD-by-mail subscriber. They expect the firm to offer a huge selection, to be able to find what they want, for it to arrive on time, for all of this to occur with no-brainer ease of use and convenience, and at a fair price. Technology drives all of these capabilities, so tech has been at the very center of the firm's brand-building efforts.

2.1 Selection: The Long Tail in Action

Customers flocked to Netflix in part because of the firm's staggering selection. A traditional video store (and Blockbuster had some 7,800 of them) stocks roughly three thousand DVD titles on its shelves. For comparison, Netflix offers its customers a selection of over 125,000 DVD titles, and rising! At traditional brick-and-mortar retailers, shelf space is the biggest constraint limiting a firm's ability to offer customers what they want when they want it. Just which films, documentaries, concerts, cartoons, TV shows, and other fare make it inside the four walls of a Blockbuster store is dictated by what the average consumer is most likely to be interested in. To put it simply, Blockbuster stocked blockbusters.

Finding the right product mix and store size can be tricky. Offer too many titles in a bigger storefront and there may not be enough paying customers to justify stocking less popular titles (remember, it's not just the cost of the DVD—firms also pay for the real estate of a larger store, the workers, the energy to power the facility, etc.). For a profitable business there should be a breakeven point arrived at by considering the number of customers that can reach a location, along with factors such as store size, store inventory, the payback from that inventory, and the cost to own and operate the store. Anyone who has visited a video store only to find a title out of stock has run up against the limits of the physical store model.

But many online businesses are able to run around these limits of geography and shelf space. Internet firms that ship products can get away with having just a few highly automated warehouses, each stocking just about all the products in a particular category. And for firms that distribute products digitally, the efficiencies are even greater because there's no warehouse or physical product at all (more on that later).

Offer a nearly limitless selection and something interesting happens: there's actually *more money* to be made selling the obscure stuff than the hits. At Amazon.com, roughly 60 percent of books sold are titles that aren't available in even the biggest Borders or Barnes & Noble Superstores.[7] And at Netflix, roughly 75 percent of DVD titles shipped are from back-catalog titles, not new releases (at Blockbuster outlets the equation is nearly flipped, with some 70 percent of business coming from new releases).[8] Consider that Netflix sends out forty-five thousand different titles each day. That's *fifteen times* the selection available at your average video store! Each quarter, roughly 95 percent of titles are viewed—that means that every few weeks Netflix is able to find a customer for nearly *every* DVD title that has *ever* been commercially released.

This phenomenon whereby firms can make money by selling a near-limitless selection of less-popular products is known as the **long tail**. The term was coined by Chris Anderson, an editor at *Wired* magazine, who also wrote a best-selling business book by the same name. The "tail" (see Figure 4.3) refers to the demand for less popular items that aren't offered by traditional brick-and-mortar shops. While most stores make money from the area under the curve from the vertical axis to the dotted line, long tail firms can also sell the less popular stuff. Each item under the right part of the curve may experience less demand than the most popular products, but someone somewhere likely wants it. And as demonstrated from the examples above, the total demand for the obscure stuff is often much larger than what can be profitably sold through traditional stores alone. While some debate the size of the tail (e.g., whether obscure titles collectively are more profitable for most firms), two facts are critical to keep above this debate: (1) selection attracts customers, and (2) the Internet allows large-selection inventory efficiencies that offline firms can't match.

long tail

In this context, refers to an extremely large selection of content or products. The long tail is a phenomenon whereby firms can make money by offering a near-limitless selection.

FIGURE 4.3 The Long Tail

The long tail works because the cost of production and distribution drop to a point where it becomes economically viable to offer a huge selection. For Netflix, the cost to stock and ship an obscure foreign film is the same as sending out the latest Will Smith blockbuster. The long tail gives the firm a selection advantage (or one based on scale) that traditional stores simply cannot match.

For more evidence that there is demand for the obscure stuff, consider Bollywood cinema—a term referring to films produced in India. When ranked by the number of movies produced each year, Bollywood is actually bigger than Hollywood, but in terms of U.S. demand, even the top-grossing Hindi film might open in only one or two American theaters, and few video stores carry many Bollywood DVDs. Again, we see the limits that geography and shelf space impose on traditional stores. As Anderson puts it, when it comes to traditional methods of distribution, "an audience too thinly spread is the same as no audience at all."[9] While there are roughly 1.7 million South Asians living in the United States, Bollywood fans are geographically disbursed, making it difficult to offer content at a physical storefront. Fans of foreign films would often find the biggest selection at an ethnic grocery store, but even then, that wouldn't be much. Enter Netflix. The firm has found the U.S. fans of South Asian cinema, sending out roughly one hundred thousand Bollywood DVDs a month. As geographic constraints go away, untapped markets open up!

For evidence on Netflix's power to make lucrative markets from nonblockbusters, visit the firm's "Top 100 page."[10] You'll see a list loaded with films that were notable for their *lack* of box office success. In one six-year period during Netflix's hyper-growth, the top spot was held not by a first-run megahit but by the independent film *Crash* (an Oscar winner, but box office weakling).[11]

fixed costs

A cost that does not vary according to production volume.

Netflix has used the long tail to its advantage, crafting a business model that creates close ties with film studios. In most cases, studios earn a percentage of the subscription revenue for every disk sent out to a Netflix customer. In exchange, Netflix gets DVDs at a very low cost. The movie business is characterized by large **fixed costs** up front. Studio marketing budgets are concentrated on films when they first appear in theaters and when they're first offered on DVD. After that, studios are done promoting a film, focusing instead on their most current titles. But Netflix is able to find an audience for a film without the studios spending a dime on additional marketing. Since so many of the titles viewed on Netflix are in the long tail, revenue sharing is all gravy for the studios—additional income they would otherwise be unlikely to get. It's a win-win for both ends of the supply chain. These supplier partnerships grant Netflix a sort of soft bargaining power that's distinctly opposite the strong-arm price bullying that giants like Wal-Mart are often accused of.

The VCR, the Real "Killer App"?

Netflix's coziness with movie studios grateful to generate revenue from back-catalog movie titles is particularly noteworthy, given that the film industry has often viewed new technologies with a suspicion bordering on paranoia. In one of the most notorious incidents, Jack Valenti, the former head of the Motion Picture Association of America (MPAA) once lobbied the U.S. Congress to limit the sale of home video recorders, claiming, "the VCR is to the American film producer and the American public as the Boston strangler is to the woman home alone."[12]

Not only was the statement over the top, Jack couldn't have been more wrong. Revenue from the sale of VCR tapes would eventually surpass the take from theater box offices, and today, home video brings in about two times box office earnings.

2.2 Cinematch: Technology Creates a Data Asset That Delivers Profits

Netflix proves there's both demand and money to be made from the vast back catalog of film and TV show content. But for the model to work best, the firm needed to address the biggest inefficiency in the movie industry—"audience finding," that is, matching content with customers. To do this, Netflix leverages some of the industry's most sophisticated technology, a proprietary recommendation system that the firm calls Cinematch.

Each time a customer visits Netflix after sending back a DVD, the service essentially asks "So, how did you like the movie?" With a single click, each film can be rated on a scale of one to five stars. If you're new to Netflix, the service can prompt you with a list of movies (or you can search out and rate titles on your own). Love *Rushmore* but hate *The Life Aquatic*? Netflix wants to know.

The magic of Cinematch happens not by offering a gross average user rating—user tastes are too varied and that data's too coarse to be of significant value. Instead, Cinematch develops a map of user ratings and steers you toward titles preferred by people with tastes that are most like yours. Techies and marketers call this trick **collaborative filtering**. The term refers to a classification of software that monitors trends among customers and uses this data to personalize an individual customer's experience. Input from collaborative filtering software can be used to customize the display of a Web page for each user so that an individual is greeted only with those items the software predicts they'll want most. The kind of data mining done by collaborative filtering isn't just used by Netflix; other sites use similar systems to recommend music, books, even news stories. While other firms also employ collaborative filtering, Netflix has been at this game for years, and is constantly tweaking its efforts. The results are considered the industry gold standard.

collaborative filtering

A classification of software that monitors trends among customers and uses this data to personalize an individual customer's experience.

Collaborative filtering software is powerful stuff, but is it a source of competitive advantage? Ultimately it's just math. Difficult math, to be sure, but nothing prevents other firms from working hard in the lab, running and refining tests, and coming up with software that's as good, or perhaps one day even better than Netflix's offering. But what the software has created for the early-moving Netflix is an enormous data advantage that is valuable, results yielding, and impossible for newcomers to match. Even if Netflix gave Cinematch to its competitors, they'd be without the over five billion ratings that the firm has amassed (according to the firm, users add about a million new ratings to the system each day). More ratings make the system seem smarter, and with more info to go on, Cinematch can make more accurate recommendations than rivals.

FIGURE 4.4 Netflix and Recommendations

Source: Netflix Investor Day presentation, May 2008. Reproduced by permission of Netflix, Inc. Copyright © 2009, Netflix, Inc. All rights reserved.

Evidence suggests that users trust and value Cinematch. Recommended titles make up over 60 percent of the content users place in their queues—an astonishing penetration rate. Compare that to how often you've received a great recommendation from the sullen teen behind the video store counter. While data and algorithms improve the service and further strengthen the firm's brand, this data is also a switching cost. Drop Netflix for a rival and the average user abandons the two hundred or more films they've rated. Even if one is willing to invest the time in recreating their ratings on another site, the rival will still make less accurate recommendations because there are fewer users and less data to narrow in on similarities across customers.

One way to see how strong these switching costs are is to examine the Netflix **churn rate**. Churn is a marketing term referring to the rate at which customers leave a product or service, and up until the customer rebellion following the 2011 re-pricing and Qwikster debacle, Netflix did a good job at keeping customers. A low churn is usually key to profitability because it costs more to acquire a customer than to keep one. And the longer a customer stays with the firm, the more profitable they become and the less likely they are to leave. If customers weren't completely satisfied with the Netflix experience, many would be willing to churn out and experiment with rivals offering cheaper service. However, the year after Blockbuster and Wal-Mart launched with copycat efforts, the rate at which customers left Netflix actually *fell* below 4 percent. Up until summer 2011, churn rates had remained stable, despite a challenging recession.[13]

churn rate

The rate at which customers leave a product or service.

All of this impacts marketing costs, too. Happy customers refer friends (free marketing from a source consumers trust). During the high growth period for the DVD-by-mail business, 94 percent of Netflix subscribers say they have recommended the service to someone else, and 71 percent of new subscribers say an existing subscriber has encouraged them to sign up.

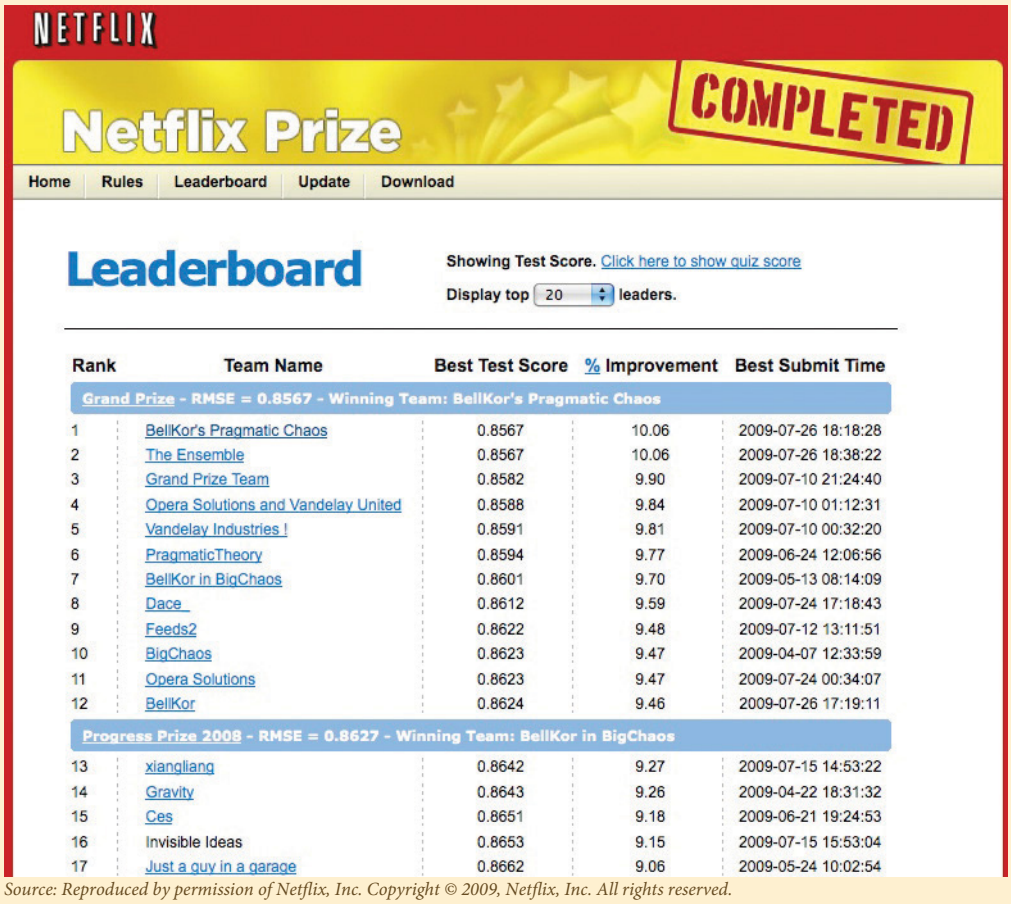
The Netflix Prize

Netflix isn't content to stand still with its recommendation engine. Recognizing that there may be useful expertise outside its Los Gatos, California headquarters, the firm launched a **crowdsourcing** effort known as The Netflix Prize (for more on crowdsourcing, see Chapter 7).

crowdsourcing

The act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined generally large group of people in the form of an open call.

The Netflix Prize Leader Board



Rank	Team Name	Best Test Score	% Improvement	Best Submit Time
Grand Prize - RMSE = 0.8567 - Winning Team: BellKor's Pragmatic Chaos				
1	BellKor's Pragmatic Chaos	0.8567	10.06	2009-07-26 18:18:28
2	The Ensemble	0.8567	10.06	2009-07-26 18:38:22
3	Grand Prize Team	0.8582	9.90	2009-07-10 21:24:40
4	Opera Solutions and Vandelay United	0.8588	9.84	2009-07-10 01:12:31
5	Vandelay Industries !	0.8591	9.81	2009-07-10 00:32:20
6	PragmaticTheory	0.8594	9.77	2009-06-24 12:06:56
7	BellKor in BigChaos	0.8601	9.70	2009-05-13 08:14:09
8	Dace	0.8612	9.59	2009-07-24 17:18:43
9	Feeds2	0.8622	9.48	2009-07-12 13:11:51
10	BigChaos	0.8623	9.47	2009-04-07 12:33:59
11	Opera Solutions	0.8623	9.47	2009-07-24 00:34:07
12	BellKor	0.8624	9.46	2009-07-26 17:19:11
Progress Prize 2008 - RMSE = 0.8627 - Winning Team: BellKor in BigChaos				
13	xiangliang	0.8642	9.27	2009-07-15 14:53:22
14	Gravity	0.8643	9.26	2009-04-22 18:31:32
15	Ces	0.8651	9.18	2009-06-21 19:24:53
16	Invisible Ideas	0.8653	9.15	2009-07-15 15:53:04
17	Just a guy in a garage	0.8662	9.06	2009-05-24 10:02:54

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The goal was simple: Offer $1 million to the first group or individual who can improve Cinematch's ratings accuracy by 10 percent. In order to give developers something to work with, the firm turned over a large ratings database (with customer-identifying information masked, of course). The effort attracted over 30,000 teams from 170 countries. Not bad when you consider that $1 million would otherwise fund just four senior Silicon Valley engineers for about a year. And the effort earned Netflix a huge amount of PR, as newspapers, magazines, and bloggers chatted up the effort.

While Netflix gains access to any of the code submitted as part of the prize, it isn't exclusive access. The Prize underscores the value of the data asset. Even if others incorporate the same technology as Netflix, the firm still has user data (and attendant customer switching costs) that prevent rivals with equal technology from posing any real threat. Results incorporating many innovations offered by contest participants were incorporated into Cinematch, even before the prize was won.

As the contest dragged on, many participants wondered if the 10 percent threshold could ever be reached. While many teams grew within striking distance, a handful of particularly vexing titles thwarted all algorithms, including the notorious *Napoleon Dynamite*. The film is so quirky, and Netflix customers so polarized, that there's little prior indicator to suggest if you're in the "love it" or "hate it" camp. One contestant claimed that single film was responsible for 15 percent of the gap between his team's effort and the million dollars.[14]

The eventual winner turned out to be a coalition of four teams from four countries—prior rivals who sought to pool their noggins and grab fame and glory (even if their individual prize split was less). BellKor's Pragmatic Chaos, the first team to cross the 10 percent threshold, included a pair of coders from Montreal; two U.S. researchers from AT&T Labs; a scientist from Yahoo! Research, Israel; and a couple of Austrian college students turned consultants.[15] It's safe to say that without the Netflix Prize, these folks would likely never have met, let alone collaborated.

Patron Saint of the Independent Film Crowd

Many critically acclaimed films that failed to be box office hits have gained a second life on Netflix, netting significant revenue for the studios, with no additional studio marketing. *Babel*, *The Queen*, and *The Last King of Scotland* are among the films that failed to crack the top twenty in the box office, but ranked among the most requested titles on Netflix during the year after their release. Netflix actually delivered more revenue to Fox from *The Last King of Scotland* than it did from the final X-Men film.[16]

In the true spirit of the long tail, Netflix has occasionally acquired small market titles for exclusive distribution. One of its first efforts involved the Oscar-nominated PBS documentary, *Daughters from Danang*. PBS hadn't planned to distribute the disc after the Academy Awards; it was simply too costly to justify producing a run of DVDs that almost no retailer would carry. But in a deal with PBS, Netflix assumed all production costs in exchange for exclusive distribution rights. For months after, the film repeatedly ranked in the Top 15 most requested titles in the documentary category. Cost to PBS—nothing.[17]

2.3 A Look at Operations

Tech also lies at the heart of the warehouse operations that deliver customer satisfaction and enhance brand value. As mentioned earlier, brand is built through customer experience, and a critical component of customer experience is for subscribers to get their DVDs as quickly as possible. In order to do this, Netflix has blanketed the country with a network of fifty-eight ultra high-tech distribution centers that collectively handle in excess of 1.8 million DVDs a day. These distribution centers are purposely located within driving distance of over 100 U.S. Postal Service (USPS) processing and distribution facilities.

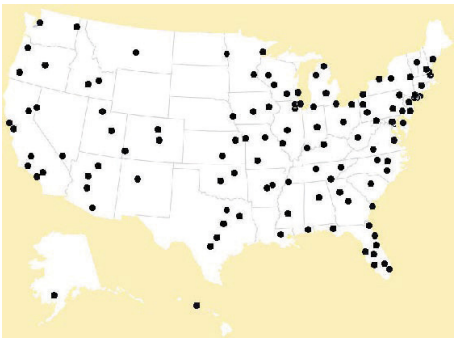
By 4:00 a.m. each weekday, Netflix trucks collect the day's DVD shipments from these USPS hubs and returns the DVDs to the nearest Netflix center. DVDs are fed into custom-built sorters that handle disc volume on the way in and the way out. That same machine fires off an e-mail as soon as it detects your DVD was safely returned (now rate it via Cinematch). Most DVDs never hit the restocking shelves. Scanners pick out incoming titles that are destined for other users and place these titles into a sorted outbound pile with a new, appropriately addressed red envelope. Netflix not only helps out the postal service by picking up and dropping off the DVDs at its hubs, it presorts all outgoing mail for faster delivery. This extra effort has a payoff—Netflix gets the lowest possible postal rates for first-class mail delivery. And despite the high level of automation, 100 percent of all discs are inspected by hand so that cracked ones can be replaced, and dirty ones can be given a wipe down.[18] Total in and out turnaround time for a typical Netflix DVD is just eight hours![19]

First-class mail takes only one day to be delivered within a fifty-mile radius, so the warehouse network allows Netflix to service over 97 percent of its customer base within a two-day window—one day is allotted for receipt; early the next morning the next item in their queue is processed; and the new title arrives at the customer's address by that afternoon.

FIGURE 4.6 A Proprietary Netflix Sorting Machine

Source: Netflix Investor Day presentation, May 2008. Reproduced by permission of Netflix, Inc. Copyright © 2009, Netflix, Inc. All rights reserved.

FIGURE 4.7 USPS Hubs Serviced by the Netflix Distribution Center Network



Source: Netflix Investor Day presentation, May 2008. Reproduced by permission of Netflix, Inc. Copyright © 2009, Netflix, Inc. All rights reserved.

Warehouse processes don't exist in a vacuum; they are linked to Cinematch to offer the firm additional operational advantages. The software recommends movies that are likely to be in stock so users aren't frustrated by a wait.

Everyone on staff is expected to have an eye on improving the firm's processes. Every warehouse worker gets a Netflix subscription so that they understand the service from the customer's perspective and can provide suggestions for improvement. Quality management features are built into systems supporting nearly every process at the firm, allowing Netflix to monitor and record the circumstances surrounding any failures. When an error occurs, a tiger team of quality improvement personnel swoops in to figure out how to prevent any problems from recurring. Each customer complaint that the firm must field is a cost, not a revenue enhancement, and each error increases the chance that a dissatisfied customer will bolt for a rival.

By paying attention to process improvements and designing technology to smooth operations, Netflix has slashed the number of customer representatives even as subscriptions ballooned. In the early days, when the firm had one hundred and fifteen thousand customers, Netflix had one-hundred phone support reps. By the time the customer base had grown thirtyfold, errors had been reduced to the point where only forty-three reps were needed.[20] Even more impressive, because of the firm's effective use of technology to drive the firm's operations, fulfillment costs as a percentage of revenue have actually dropped even though postal rates have increased and Netflix has cut prices.

2.4 Killer Asset Recap: Understanding Scale

Netflix executives are quite frank that the technology and procedures that make up their model can be copied, but they also realize the challenges that any copycat rival faces. Says the firm's VP of Operations, "Anyone can replicate the Netflix operations if they wish. It's not going to be easy. It's going to take a lot of time and a lot of money."[21]

While Netflix might have seemed like David battling the Goliaths of Wal-Mart and Blockbuster, within the DVD-by-mail segment Netflix is now the biggest player by far, and this size gives the firm significant scale advantages. The yearly cost to run a Netflix-comparable nationwide delivery infrastructure is about $300 million.[22] Think about how this relates to economies of scale. In Chapter 2, we said that firms enjoy *scale economies* when they are able to leverage the cost of an investment across increasing units of production. Even if rivals have identical infrastructures, the more profitable firm will be the one with more customers (see Figure 4.8). And the firm with better scale economies is in a position to lower prices, as well as to spend more on customer acquisition, new features, or other efforts. Smaller rivals have an uphill fight, while established firms that try to challenge Netflix with a copycat effort are in a position where they're straddling markets, unable to gain full efficiencies from their efforts.

FIGURE 4.8

Running a nationwide sales network costs an estimated $400 million a year. But Netflix has several times more subscribers than Blockbuster. Which firm has economies of scale?[23]

For Blockbuster, the arrival of Netflix plays out like a horror film where it is the victim. Netflix pressure forced Blockbuster to drop late fees, costing the firm about $400 million a year.[24] The Blockbuster store network once had the advantage of scale, but eventually its many locations were seen as an inefficient and bloated liability. During a three-year period that included the launch of its Total Access DVD-by-mail effort, Blockbuster lost over $4 billion and closed hundreds of stores.[25] The firm tried to outspend Netflix on advertising—even running Super Bowl ads for Total Access—but a money loser can't outspend its more profitable rival for long, and Blockbuster was eventually forced to cut back on promotion. Blockbuster also couldn't sustain subscription rates below Netflix's, so it has given up its price advantage. A Viacom executive said about the firm, "Blockbuster will certainly not survive and it will not be missed."[26] This assessment had to sting, given that Viacom was once Blockbuster's parent

(the firm was spun off in 2004). In September 2010, Blockbuster declared bankruptcy, and in April 2011 the firm was purchased by Dish Network at a bankruptcy auction.[27]

For Netflix, what delivered the triple scale advantage of the largest selection, the largest network of distribution centers, and the largest customer base and the firm's industry-leading strength in brand and data assets? Moving first. Timing and technology don't always yield sustainable competitive advantage, but in this case, Netflix leveraged both to craft an extraordinarily valuable pool of assets.

But as we'll see in the next section, while technology shifts helped Netflix attack Blockbuster's once-dominant position, even newer technology shifts may threaten Netflix. As they like to say in the mutual fund industry "Past results aren't a guarantee of future returns."

KEY TAKEAWAYS

- Durable brands are built through customer experience, and technology lies at the center of the Netflix top satisfaction ratings and hence the firm's best-in-class brand strength.
- Physical retailers are limited by shelf space and geography. This limitation means that expansion requires building, stocking, and staffing operations in a new location.
- Internet retailers serve a larger geographic area with comparably smaller infrastructure and staff. This fact suggests that Internet businesses are more scalable. Firms providing digital products and services are potentially far more scalable, since physical inventory costs go away.
- The ability to serve large geographic areas through lower-cost inventory means Internet firms can provide access to the long tail of products, potentially earning profits from less popular titles that are unprofitable for physical retailers to offer.
- Netflix technology revitalizes latent studio assets. Revenue sharing allows Netflix to provide studios with a costless opportunity to earn money from back catalog titles: content that would otherwise not justify further marketing expense or retailer shelf space.
- The strategically aligned use of technology by this early mover has allowed Netflix to gain competitive advantage through the powerful resources of brand, data and switching costs, and scale.
- Collaborative filtering technology has been continually refined, but even if this technology is copied, the true exploitable resource created and leveraged through this technology is the data asset.
- Technology leveraged across the firm's extensive distribution network offers an operational advantage that allows the firm to reach nearly all of its customers with one-day turnaround.

QUESTIONS AND EXERCISES

1. What are Netflix's sources of competitive advantage?
2. Does Netflix have a strong brand? Offer evidence demonstrating why the firm's brand is or isn't strong. How is a strong brand built?
3. Scale advantages are advantages related to size. In what key ways is Netflix "bigger" than the two major competitors who tried to enter the DVD-by-mail market?
4. What is the long tail? How "long" is the Netflix tail compared to traditional video stores?
5. What "class" of software does Netflix use to make movie recommendations? Think about Chapter 2: Which key competitive resource does this software "create"? What kinds of benefits does this provide to the firm? What benefits does it provide to Netflix's suppliers?
6. Could a new competitor match Netflix's recommendation software? If it did, would this create a threat to Netflix? Why or why not?
7. What is the Netflix churn rate and what are the reasons behind this rate?
8. Netflix uses technology to coordinate the process of sorting and dropping off DVDs for the U.S. Postal Service. This application of technology speeds delivery. What other advantage does it give the firm?
9. How has Netflix improved its customer service operation? Describe the results and impact of this improvement.

3. ACT II: NETFLIX AND THE SHIFT FROM MAILING ATOMS TO STREAMING BITS

LEARNING OBJECTIVES

1. Understand the shift from atoms to bits, and how this is impacting a wide range of industries.
2. Recognize the various key issues holding back streaming video models.
3. Know the methods that Netflix is using to attempt to counteract these challenges.

atoms to bits

The idea that many media products are sold in containers (physical products, or atoms) for bits (the ones and zeros that make up a video file, song, or layout of a book). As the Internet offers fast wireless delivery to TVs, music players, book readers, and other devices, the "atoms" of the container aren't necessary. Physical inventory is eliminated, offering great cost savings.

Nicholas Negroponte, the former head of MIT's Media Lab and founder of the One Laptop per Child effort, wrote a now-classic essay on the shift from **atoms to bits**. Negroponte pointed out that most media products are created as bits—digital files of ones and zeros that begin their life on a computer. Music, movies, books, and newspapers are all created using digital technology. When we buy a CD, DVD, or even a "dead tree" book or newspaper, we're buying physical atoms that are simply a container for the bits that were created in software—a sound mixer, a video editor, or a word processor.

The shift from atoms to bits is realigning nearly every media industry. Newspapers struggle as readership migrates online and once-lucrative classified ads and job listings shift to the bits-based businesses of Craigslist, Monster.com, and LinkedIn. Apple dominates music sales, selling not a single "atom" of physical CDs, while most of the atom-selling "record store" chains of a decade ago are bankrupt. Amazon jumped into the atoms-to-bits shift when it developed the Kindle digital reader. Who needs to kill a tree, spill ink, fill a warehouse, and roll a gas-guzzling truck to get you a book? Kindle can slurp your purchases through the air and display them on a device lighter than any college textbook. When the Kindle was released, many thought it to be an expensive, niche product for gadget lovers, but in less than four years, the firm was selling more electronic books than print titles,[28] and in both unit sales and total revenue, the Kindle had become the best-selling product ever sold on Amazon.com.[29]

There's a clear potential upside to the Netflix model as it shifts from mailing atoms to streaming bits: it will eliminate a huge chunk of costs associated with shipping and handling. Postage represents about one-third of the firm's expenses. A round-trip DVD mailing, even at the deep discounts Netflix receives from the U.S. Postal Service, runs about eighty cents, while the bandwidth and handling costs to send bits to a TV set are around a nickel.[30] Netflix is such a large customer of the U.S. postal service that it represents some 20 percent of first-class "flats."[31] The U.S. Postal Service is also a potentially troubling long-term partner; with the agency's budget woes threatening price hikes, service slowdowns, and the cancellation of Saturday delivery.

Netflix built a profit-machine finely tuned to get DVDs to consumers within a day. But when the DVD dies, the high-tech shipping and handling infrastructure that Netflix has relentlessly built will be rendered worthless. Just about everything in the streaming business is different: content availability, content acquisition costs, potential opportunities for revenue and expansion, potential partners, competitors and their motivation. The question is, can Hastings pull off yet another victory and recast Netflix for the day that DVDs disappear, or will the atoms-to-bits shift decimate his firm's hard-earned competitive advantage and render his firm as irrelevant as Blockbuster?

fixed costs

Costs that do not vary according to production volume.

marginal costs

The costs associated with each additional unit produced.

Digital Products and Marginal Costs

Imagine you're an auto manufacturer. Before you can begin producing any vehicles you'll need to make some investments to get started. These **fixed costs** might include buying land and building a manufacturing plant. There are also costs associated with each individual unit produced. These are the **marginal costs** and would include things like the parts, materials, labor, and energy used to produce each additional car.

It's often argued that the marginal cost of digital goods is effectively zero. That's because computers can make limitless duplicates of digital content—no material required—and the Internet can be used to almost instantly distribute content to customers. In practice there are some costs associated with digital distribution. These might include the costs that a firm must pay to telecommunications providers that connect them to the Internet (the more a firm transmits, the more it typically has to pay), or the cost of running programs on the servers of other companies (see the cloud computing discussion in the chapter "Software in Flux"). For example, to deliver streaming video, Netflix actually uses computers provided by the cloud computing services of Amazon

(making Amazon and Netflix both partners and competitors, a phenomenon often referred to as coopetition, or *frenemies*[32]). License fees can also add to the marginal costs of Netflix streaming. While computing costs might total just a nickel for each video streamed, if content providers charge Netflix a per-unit basis for streamed content, then this also gets added to marginal costs.

3.1 Access to Content

First the content. Three years after the launch of Netflix streaming option (enabled via a "Watch Now" button next to movies that can be viewed online), only about 17 percent of the firm's DVD catalog was available via streaming, and it wasn't the best 17 percent. While the number of titles available for streaming by Netflix has steadily increased, acquiring content has been a significant challenge. The DVD side of the business benefits from a Supreme Court ruling known as the "First Sale Doctrine." The ruling allows a firm to loan out physical copies of purchased products, so if studios sell their DVDs retail, they can't prevent Netflix, or anyone else, from buying DVDs at full price and sending purchased discs to subscribers. But "First Sale Doctrine" applies to the physical disc, not to streaming, so Netflix can't offer Internet streaming without separate licenses for this content.[33] It's not just studio reluctance or fear of piracy. There are often complicated legal issues involved in securing the digital distribution rights for all of the content that makes up a movie. Music, archival footage, and performer rights may all hold up a title from being available under "Watch Now." The 2007 Writers Guild strike occurred largely due to negotiations over digital distribution, showing just how troublesome these issues can be.

Add to that the exclusivity contracts negotiated by key channels, in particular the so-called *premium* television networks. Film studios release their work in a system called **windowing**. Content is available to a given distribution channel (in theaters, through hospitality channels like hotels and airlines, on DVD, via pay-per-view, via pay cable, then broadcast commercial TV) for a specified time window, usually under a different revenue model (ticket sales, disc sales, license fees for broadcast). Windows controlled by pay television channels can be particularly challenging, since many have negotiated exclusive access to content as they strive to differentiate themselves from one another. This exclusivity means that even when a title becomes available for streaming by Netflix, it may disappear when a pay TV window opens up. If HBO or Showtime has exclusive rights to broadcast a film, it's pulled from the Netflix streaming service until the exclusive pay TV time window closes. Partnerships with cable networks Starz and Epix initially helped provide access to some content locked up inside pay television windows, and deals with individual networks and studios allow for streaming of current-season shows.[34] However even these can get caught up in licensing details. For example, Sony titles were pulled from Netflix when a contract cap specifying the maximum number of subscribers that can stream Sony content was exceeded.[35] Netflix still has a long way to go before its streaming offerings catch up to the long tail of the firm's disc inventory.

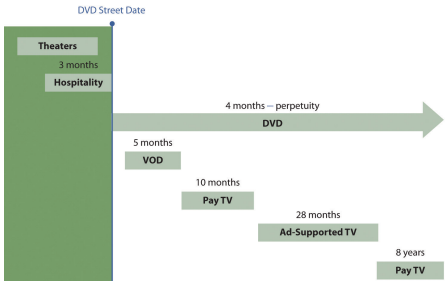
windowing

Industry practice whereby content (usually a motion picture) is available to a given distribution channel for a specified time period or "window," usually under a different revenue model (e.g., ticket sale, purchase, license fee).

Even those studios that embrace the audience-finding and revenue-sharing advantages of Netflix don't want to undercut higher-revenue early windows. Fox, Universal, and Warner have all demanded that Netflix delay sending DVDs to customers until twenty-eight days after titles go on sale. In exchange, Netflix has received guarantees that these studios will offer more content for digital streaming.

There's also the influence of the king of DVD sales: Wal-Mart. The firm accounts for about 40 percent of DVD sales—a scale that delivers a lot of the bargaining power it has used to "encourage" studios to hold content from competing windows or to limit offering digital titles at competitive pricing during the peak new release period.[36] Apparently, Wal-Mart isn't ready to yield ground in the shifts from atoms to bits, either. The retail giant spent an estimated $100 million to buy the little-known video streaming outfit VUDU.[37] Wal-Mart's negotiating power with studios may help it gain special treatment for VUDU. As an example, VUDU was granted exclusive high-definition streaming rights for the hit movie *Avatar*, offering the title online the same day the DVD appeared for sale.[38]

FIGURE 4.9 Film Release Windows



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Studios may also be wary of the increasing power Netflix has over product distribution, and as such, they may be motivated to keep rivals around. Studios have granted Blockbuster more favorable distribution terms than Netflix. While the bankrupt firm was bought out by Dish Network and remains a shadow of its former self, in many cases, Blockbuster can now distribute DVDs the day of release instead of waiting nearly a month, as Netflix does.[39] Studios are likely concerned that Netflix may be getting so big that it will one day have Wal-Mart-like negotiating leverage.

Controlling rising licensing costs presents a further challenge. Unlike DVD costs, which largely remain fixed (buy a DVD and you own it for life), streaming costs are usually licensed for a limited time

period and costs often rise when licenses are renewed. Netflix financials indicate the firm's cost of acquiring streaming content has steadily risen, from $48 million in 2008 to $64 million in 2009, then to a whopping $406 million in 2010.

Streaming licensing deals also complicate a firm's cost estimates because rates vary widely even when titles are available. Studios might offer titles via a flat rate for unlimited streams, a rate according to a service's overall subscribers, a per-stream rate, a rate for a given number of streams, a premium for exclusive content, and various permutations in between. Some vendors have been asking as much as four dollars per stream for more valuable content—a fee that would quickly erase subscriber profits, making any such titles too costly to add to the firm's library. And some firms may require separate licenses to stream to international markets.

Another problem—some firms steadfastly refuse to offer Netflix streaming rights. Time Warner's HBO has thus far tried to keep streaming a perk limited to its own paying subscribers. It offers video-on-demand and *HBO Go* app access for its cable customers, but refuses to offer current content for streaming via Netflix. And while the Starz network initially licensed its content to Netflix for $30 million, it turned down ten times that amount to renew the deal in 2011.[40] HBO and Starz fear that a Netflix with broad content offerings might prompt cable subscribers to become *cord cutters* (eliminating cable all together) or *cord shavers* (who drop premium cable channels). Why pay $15 for a package of premium cable channels if Netflix could offer the same content and more for just $8.

One way Netflix can counter rivals with exclusive content is to offer exclusive content of its own. The firm has secured exclusive streaming rights for several popular shows, including the AMC series *Mad Men*. Netflix also paid $100 million for the initial twenty-six-episode exclusive for the series *House of Cards*, beating out HBO and AMC in a bidding war for a brand-new series featuring Oscar-winner Kevin Spacey and which will be produced by David Fincher (director of *The Social Network*). It's a risky move—unlike most of Netflix's other content, *House of Cards* hasn't been produced, so no one knows if it'll be a hit. And it's unknown if the prospect of exclusive content bidding wars will prompt more firms to share their content instead of fighting over it. But Netflix's growing audience size is now comparable to that of the largest cable firms, with some suggesting Netflix is a quasi-network (Netflix now has more subscribers than Showtime and Comcast and is closing in on HBO[41]). Hastings says he anticipates that Netflix will do more exclusive deals for new content, stating, "We're willing to do that if we have to, but we think it makes more economic sense for us and pay television [providers like HBO] to share windows."[42]

Supplier Power and Atoms to Bits

The winner-take-all, winner-take-most dynamics of digital distribution can put suppliers at a disadvantage. If firms rely on one channel partner for a large portion of sales, that partner has an upper hand in negotiations. For years, record labels and movie studios complained that Apple's dominance of iTunes allowed them little negotiating room in price setting. A boycott where NBC temporarily lifted TV shows from iTunes is credited with loosening Apple's pricing policies. Similarly, when Amazon's Kindle dominated the e-book reader market, Amazon enforced a $9.99 price on electronic editions, even as publishers lobbied for higher rates. It wasn't until Apple arrived with a creditable e-book rival in the iPad that Amazon's leverage was weakened to the point where publishers were allowed to set their own e-book prices.[43]

Taken together, all these content acquisition factors make it clear that attempts to profitably shift the long tail from atoms to bits will be significantly more difficult than buying DVDs and stacking them in a remote warehouse. Netflix has to be selective in the deals it'll cut because licensing costs could crater earnings. Unlike the DVD business, streaming content acquisition can't be about acquiring nearly every available title. Instead it's about having *enough* compelling content to attract paying subscribers, all while controlling costs to ensure profitability.

3.2 But How Does It Get to the TV?

The other major problem lies in getting content to the place where most consumers want to watch it: the living room TV. Netflix's "Watch Now" button first worked only on Windows PCs. The months before Netflix launced streaming were fueled with speculation that the firm would partner with TiVo, but when the settop box firm announced its first streaming partner it was Amazon. At that point Netflix found itself up against a host of rivals that all had a path to the television: Apple had its own hardware solution in Apple TV (not to mention the iPod and iPhone for portable viewing), the cable companies delivered OnDemand through their set-top boxes, and now Amazon had TiVo.

An internal team at Netflix developed a prototype set-top box that Hastings himself supported offering. But most customers aren't enthusiastic about purchasing yet another box for their set top, the

consumer electronics business is brutally competitive, and selling hardware would introduce an entirely new set of inventory, engineering, marketing, distribution, and competitive complexities.

The solution Netflix eventually settled on was to think beyond one hardware alternative and instead recruit others to provide a wealth of choice. The firm developed a software platform and makes this available to manufacturers seeking to include Netflix access in their devices. Today, Netflix streaming is baked into over two hundred consumer electronics products, including televisions and DVD players from LG, Panasonic, Samsung, Sony, Toshiba, and Vizio. The migration to Blu-ray has also helped the firm piggyback its way into the living room. Buy one of the increasing number of Blu-ray players that has partnered with Hastings's firm and for just eight bucks a month you can get a ticket to the all-you-can-eat Netflix buffet. Netflix streaming is also available on all major video game consoles, the iOS and Android mobile platforms, and on the Kindle Fire and Barnes & Noble Nook. Even TiVo now streams Netflix. And that internally developed Netflix set-top box? The group was spun out to form Roku, an independent firm that launched their own $99 Netflix streamer. By developing an ecosystem of streaming providers, Netflix has expanded from a network of over 50 warehouses that distribute DVDs to one that can also enlist millions of devices to instantly deliver its content.

By working with consumer electronics firms, offering Netflix streaming as a feature or an app, Hastings's firm has ended up with more television access than either Amazon or Apple, despite the fact that both of these firms got their digital content to the TV set first. Partnerships have helped create distribution breadth, giving Hastings an enviable base through which to grow the video streaming business.

Disintermediation and Digital Distribution

The purchase of NBC/Universal by Comcast, the largest cable television provider in the United States, has consolidated content and distribution in a single firm. The move can be described as both vertical integration (when an organization owns more than one layer of its value chain) and **disintermediation** (removing an organization from a firm's distribution channel).[44] Disintermediation in the video industry offers two potentially big benefits. First, studios don't need to share revenue with third parties; they can keep all the money generated through new windows. Also critically important, studios keep the interface with their customers. Remember, in the digital age data is valuable; if another firm sits between a supplier and its customers, the supplier loses out on a key resource for competitive advantage. For more on the value of the data asset in maintaining and strengthening customer relationships, see Chapter 11.

disintermediation

Removing an organization from a firm's distribution channel. Disintermediation collapses the path between supplier and customer.

Who's going to win the race for delivering bits to the television is still very much an uncertain bet. The models all vary significantly. Netflix pioneered unlimited subscription streaming, but Dish Network's Blockbuster and Wal-Mart's VUDU also offer Netflix-like subscriptions and have copied Hastings's lead, partnering with consumer electronics makers to bring their services to TV sets. Apple's iTunes offers video purchases and "rentals" that can also play across PCs and Macs, as well as the firm's iPod, iPhone, iPad, and Apple TV products. Microsoft also offers an online rental and purchase service via Xbox. Amazon has expanded its Internet video purchase and rental business with the addition of free streaming for thousands of titles as a perk to those customers paying for its Amazon Prime shipping service. Amazon's consumer electronics partnerships have also expanded (those vendors are quite promiscuous) and many of the same firms partnering with Netflix also stream Amazon content. And Amazon is getting into the disc-by-mail act, too, acquiring LoveFilm (often described as the "Netflix of Europe"), for some $200 million in early 2011.[45] YouTube now offers thousands of television shows and movies via both ad-supported and rental models, and the firm's parent has launched Google TV to make television access easier. Facebook has begun to experiment with video streaming, working with Warner Brothers to stream *The Dark Knight* for a fee of thirty Facebook credits. With Netflix offering apps on so many of these competing platforms, the firm's frenemies list is a long one.

Networks and content providers also have their own offerings: many stream content on their own Web sites; Comcast and Verizon have apps that stream content to phones, PCs, and tablets; and Hulu is a joint venture backed by NBC, Fox, and other networks. Hulu offers a basic ad-supported PC streaming service as well as Hulu Plus, a subscription service that offers more content as well as streaming to certain consumer electronics devices. Whether all these efforts are individually sustainable remains to be seen. Many are efforts offered by deep-pocketed rivals that can subsidize experimentation through profits from their primary businesses, so even if efforts are slow to gain traction, a shakeout may take time.

A bits-based business can also be risky if the infrastructure is unreliable. If a store or warehouse has a problem, a firm can try to service customers from another location. But if the technology that supports your services breaks, then your entire business is brought to its knees. Netflix has suffered a series of such outages in the past, and any repeated reliability concerns risks prompting customers to seek alternatives.[46]

bandwidth caps

A limit, imposed by the Internet service provider (e.g., a cable or telephone company) on the total amount of traffic that a given subscriber can consume (usually per each billing period).

Then there's the issue of unhappy consumer Internet service providers. Netflix streaming has become the single largest source of North American Internet traffic, making up nearly 30 percent of data flowing into homes (a figure that grew 44 percent in just six months).[47] Many Internet service providers aren't pleased by the growth of Netflix streaming, viewing Netflix as a rapidly-expanding, network-clogging traffic hog. Netflix pays its own Internet service providers to connect the firm to the Internet and to support its heavy volume of outbound traffic. But Netflix offers no such payment to the ISPs used by consumers (e.g., your local cable and telephone companies). Several ISPs, including Comcast (which also owns content through its purchase of NBC/Universal), AT&T, and Charter, have experimented with **bandwidth caps** that place a ceiling on a customer's total monthly consumption (users can usually bump up the ceiling, but they have to pay to do it). Today few U.S. users are running into the ceiling, but that may change as more family members sport tablets, smartphones, and other streaming devices and as new, traffic-heavy technologies like Apple's FaceTime and Microsoft's Skype become more widely used. In Canada, Netflix has already lowered stream quality to deal with that nation's more restrictive traffic consumption limits. Netflix hasn't been shy about sharing its concern on bandwidth caps with the FCC, arguing that caps are really a much higher markup than the incremental cost of Internet transmission and claiming that if caps restrict users then this could stifle innovation.[48] If U.S. bandwidth caps start to limit consumer access to streaming, Netflix could suffer.

3.3 No Turning Back

While one day the firm will lose the investment in its warehouse infrastructure, nearly all assets have a limited lifespan. That's why corporations depreciate assets, writing their value down over time. The reality is that the shift from atoms to bits isn't flicking on like a light switch; it is a hybrid transition taking place over several years. Try to make the transition to streaming-only too quickly, and as the Qwikster debacle showed, customers may leave. But move too slowly and rivals can gain ground. If the firm can grab compelling content at manageable costs, broaden distribution options, grow its customer base, and lock them in with the switching costs created by Cinematch (all big "ifs"), it just might cement its position as a key player in a bits-only world. Even with the controversy over the price increase, *PC World* pointed out that Netflix still represented a far greater value than any of the available alternatives.[49]

Yes, streaming has challenges, but it also presents Netflix with a wide array of opportunities. Building out warehouse networks worldwide is impractical, but streaming will be the only option offered as Netflix rapidly expands, rolling its service out to an additional 43 countries worldwide.[50] Also remember that while Netflix built its business on a single monthly subscription fee, there's nothing that says this is the only model the firm will adhere to in the future. Netflix could also offer services such as pay-per-view content, higher-priced plans for premium offerings, and more. The firm's rich experience in matching content to customer preference might also provide the foundation for an ad-supported offering. Imagine getting content for lower prices, or even for free, if you allow Netflix to profile your viewing habits and serve up ads that it thinks you'll like. Streaming on-demand content with targeted ads could be a goldmine combination that radically undercuts the one-commercial-for-all model of current broadcast television.

Is the hybrid atoms and bits strategy a dangerous straddling gambit or a clever expansion that will keep the firm dominant? Netflix really doesn't have a choice but to try. Hastings already has a long history as one of the savviest strategic thinkers in tech. As the networks say, stay tuned!

TABLE 4.1 Netflix DVD-by-Mail versus Streaming

	Netflix DVD-by-Mail	Netflix Streaming	Notes
Content Acquistion Costs	Fixed.	Variable and increasing. No consistency in licensing parameters (variants include per subscriber, per use, per stream, duration of deal, exclusivity).	Starz turned down a Netflix 10x offer to renew licensing just 3 years after first pact. U.S. "first sale doctrine" means Netflix can buy and send out DVDs, but this ruling doesn't apply to streaming/broadcast.
Competitors	Mostly vanquished (bankrupt, inefficient Blockbuster bought by Dish). Indirect competition from Redbox kiosks but rival selection is small without delivery convenience.	Numerous with different models.	Digital video content available from Amazon, Apple, Dish/Blockbuster, Google/YouTube, Hulu, Walmart/Vudu, Cable providers (OnDemand), Pay channels (e.g. HBO Go).
Competitor Motivation	Market has little appeal for new entrants.	Maturing tech firms see streaming as a growth market, and revenue models/goals vary (subscription/PPV/Download-to-own, advertising, to fuel hardware purchases). Cable channels and cable providers fear subscriber loss.	Many rivals are highly profitable in other industries/have resources for expansion and to sustain prolonged competition. Pay channels fear their content will be devalued if Netflix is both cheaper and has a greater selection. Cable providers/channels fear chord cutting/shaving customers.
Plans	Fixed price per month based on number of DVDs at a time. High volume customers that frequently return DVDs are unprofitable.	Unlimited monthly subscription to all content.	Rival plans vary and include: subscription, free/commercial-supported, rental, pay-per-view, download to own.
Innovation	Very limited since DVD content is fixed by the studios and burned onto a disc.	Opportunities for new content and revenue models.	Streaming offers Netflix and rivals a chance to experiment with mixed revenue streams (premium priced 'windows,' ad-supported offerings with ability to gather/leverage high-value customer data), and the ability to launch new content/services DVDs can't match (social, interactive premium content).
Availability	Any DVD that can be purchased (125,000 title long tail).	Limited to what studios will license (20,000 title shorter tail, fewer new/hit titles).	Content is licensed from studios (content owners) or cable channels (if channels have the right to re-license broadcast/streaming rights to others). HBO and others won't share. Pay channels get exclusives in 'window' that may require content to be pulled from streaming.
Delivery Infrastructure	Tough to duplicate (58 warehouses). Staffed and maintained—require steady/increasing subscribers to keep margins high.	Currently uses public cloud (Amazon), but with proprietary technology.	Postal costs to increase while service may decrease (Saturday eliminated, delivery speed slowed). Public cloud use means rivals have access to similar delivery infrastructure assets. ISPs threaten end-user bandwidth caps that may lower streaming appeal.
Delivery To	Any device with a DVD player. Selected on web, delivery in about a day.	Any network-connected screen (TV, PC, mobile) w/a Netflix client. Instantly browse, preview, watch, and rate content.	Blu-ray likely the last physical standard. The future is streaming and Netflix has the largest partner platform, integrating in game consoles, TVs, DVD players, mobile devices, and more. Device partnerships are not exclusive to Netflix and rivals are expanding streaming reach w/similar integration.

	Netflix DVD-by-Mail	Netflix Streaming	Notes
Global Expansion	Expensive to replicate infrastructure regionally.	Can be served from the cloud, but reliant on local backbone and last-mile broadband.	DVD-by-mail needs cheap/fast local postal networks. Streaming costs are mostly dropping worldwide, but availability limited in some areas, quality varies, and bandwidth caps may limit appeal.
Market Outlook/ Challenges	U.S. DVD-by-mail is mature and likely to decrease. Profit margins associated with running a nationwide warehouse network will go down if subscribers drop/ shift to streaming.	A growing but highly unpredictable business in terms of future costs, content availability, rival intensity, appeal vs. alternatives, and more. Key is in creating strategic assets that others can't match, but what are they? Brand, scale advantages, and data drove DVD-by-mail dominance.	Uncertain if Netflix will gain streaming subscribers ahead of rivals. Wildcard: Netflix CEO Reed Hastings sits on the board of both Microsoft and Facebook—allies with potential for even stronger partnerships, but which are also potential competitors.

KEY TAKEAWAYS

- The shift from atoms to bits is impacting all media industries, particularly those relying on print, video, and music content. Content creators, middlemen, retailers, consumers, and consumer electronics firms are all impacted.
- Netflix's shift to a streaming model (from atoms to bits) is limited by access to content and in methods to get this content to televisions.
- While the "First Sale Doctrine" allows Netflix to send out physical DVDs to subscribers, this law doesn't apply to streaming.
- Windowing, exclusives, and other licensing issues limit available content, and inconsistencies in licensing rates make profitable content acquisitions a challenge. Although the marginal cost for digital goods is zero, this benefit doesn't apply to licensees.
- Netflix makes its streaming technology available to hardware firms, and it has developed streaming apps for a host of consumer electronics devices. As a result, Netflix streaming is available on more devices than any competing rival service.
- Netflix competitors in streaming are large, deep pocketed, and may have different motivations for offering streaming content (such as generating ad revenue, pay-per-view content sales, or as an incentive to make existing hardware platforms more attractive).
- The streaming business also offers Netflix opportunities to explore new revenue models, and it allows for rapid expansion into international markets.

QUESTIONS AND EXERCISES

1. Contrast Netflix's two businesses: DVD-by-mail and streaming. How do costs differ? How are these costs likely to change over time? How is subscriber interest in these services likely to change over time? What factors influence the reliability of each service? What threats are each of these businesses likely to face?
2. Who are the rivals to Netflix's "Watch Now" effort? Do any of these firms have advantages that Netflix lacks? What are these advantages?
3. Why would a manufacturer of DVD players be motivated to offer the Netflix "Watch Now" feature in its products?
4. Describe various revenue models available as video content shifts from atoms to bits. What are the advantages and disadvantages to each—for consumers, for studios, for middlemen like television networks and Netflix?
5. Make a chart of the various firms offering video-streaming services. List the pros and cons of each, along with its revenue model. Which efforts do you think will survive a shakeout? Why?
6. Wal-Mart backed out of the DVD-by-mail industry. Why does the firm continue to have so much influence with the major film studios? What strategic asset is Wal-Mart leveraging?
7. Investigate the firm Red Box. Do you think they are a legitimate threat to Netflix? Why or why not?
8. Is Netflix a friend or foe to the studios? Make a list of reasons why they would "like" Netflix, and why studios might be fearful of the firm. What is disintermediation, and what incentives do studios have to try to disintermediate Netflix?
9. Why didn't Netflix vertically integrate and offer its own set-top box for content distribution?
10. What has been the impact of Netflix summer 2011 move from single plan pricing to separate pricing for streaming and DVD-by-mail? What factors motivated this move? Do you think splitting the service into separate plans was a wise move? Why or why not?
11. Investigate the current status of bandwidth caps. Do you think bandwidth caps are fair? Why or why not?
12. Investigate Netflix stock price. One of the measures of whether a stock is "expensive" or not is the price-earnings ratio (share price divided by earnings per share). P/Es vary widely, but historic P/Es are about fifteen. What is the current P/E of Netflix? Do you think the stock is fairly valued based on prospects for future growth, earnings, and market dominance? Why or why not? How does the P/E of Netflix compare with that of other well-known firms, both in and out of the technology sector? Arrive in class with examples you are ready to discuss.
13. Netflix has begun to invest in securing the rights to original, previously unaired programming. What are the benefits and risks of such efforts?

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