

# Netflix Case Study: David Becomes Goliath

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*Last modified: Sept. 13, 2008*

*Note: this is an earlier version of the chapter. All chapters updated after July 2009 are now hosted (and still free) at <http://www.flatworldknowledge.com>. For details see the 'Courseware' section of <http://gallaugher.com>*

## INTRODUCTION

Entrepreneurs are supposed to want to go public. When a firm sells stock for the first time, the company gains a ton of cash to fuel expansion and its founders get rich. Going public is the dream in the back of the mind of every tech entrepreneur. But in 2007, Netflix founder and CEO Reed Hastings told Fortune Magazine that if he could change one strategic decision, it would have been to delay the firm's initial public stock offering (IPO)<sup>1</sup>. "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". Once Netflix was a public company, disclosure rules forced the firm to reveal just how profitable the firm was. Unfortunately for Hastings, others got wind that Netflix was on a money-minting growth tear, and these guys wanted in.

Hollywood's best couldn't have scripted a more menacing group of rivals for Hastings to face. First in line with its own DVD-by-mail offering was Blockbuster, a name synonymous with video rental. Some 40 million US families were already card-carrying Blockbuster customers, and the firm's efforts promised to link DVD-by-mail with the nation's largest network of video stores. Alongside them was Wal-Mart. Not just a big Fortune 500 company, the biggest Fortune 1. The largest firm in the United States ranked by sales. In Netflix, Hastings had built a great firm, but let's face it, his was a dot-com, an internet pure-play without a storefront and with an overall customer base that seemed microscopic compared to these behemoths.

Before all this, Netflix was feeling so confident that it had actually raised prices. Customers loved the service, the company was dominating its niche, and it seemed like the firm could take advantage of its position through a modest price hike, pull in more revenue, and use this to improve and expand the business. But the firm was surprised by how quickly the newcomers mimicked Netflix with cheaper rival efforts. This new competition forced Netflix to cut prices even lower than they had been before the price increase. To keep pace, Netflix also upped advertising at a time when online ad rates were increasing. Big competitors, a price war, spending on the rise: how could Netflix possibly withstand this onslaught? Some Wall Street analysts had even taken to referring to Netflix's survival prospects as "The Last Picture Show"<sup>2</sup>.

Fast forward a year later and Wal-Mart had cut and run, dumping their experiment in DVD-by-mail. Blockbuster had been mortally wounded, hemorrhaging billions of dollars in a string of quarterly losses. And Netflix? Not only had the firm held customers, it grew bigger, recording record profits. The dot-com did it. Hastings, a man who prior to Netflix had already built and sold one of the 50 largest public software firms in the US, had clearly established himself as one of America's most capable and innovative technology leaders. In fact, at roughly the same time

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<sup>1</sup> Boyle, 2007

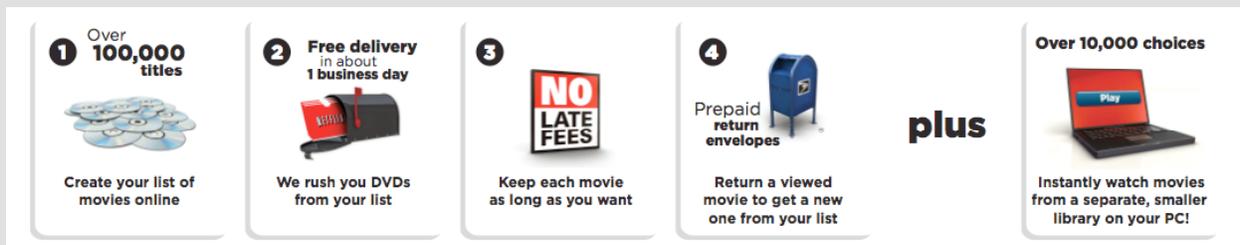
<sup>2</sup> Conlin, 2007

that Blockbuster CEO John Antioco resigned, Reed Hastings accepted an appointment to the Board of Directors of none other than the world's largest software firm, Microsoft. Like the final scene in so many movies where the hero's face is splashed across the news, Time magazine named Hastings as one of the "100 most influential global citizens".

## WHY STUDY NETFLIX?

Studying Netflix gives us a chance to examine how technology helps firms craft and reinforce a competitive advantage. We'll pick apart the components of the firm's strategy and learn how technology played a starring role in placing the firm atop its industry. We also realize 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. We'll finish the case with a look at the very significant challenges the firm faces as new technology continues to shift the competitive landscape.

### How Netflix Works<sup>3</sup>



Reed Hastings, a former Peace Corp 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 \$40 late fee was enough to have bought the disc outright with money left over. Hastings felt ripped off, and out of this initial outrage, Netflix was born. The model the firm eventually settled on was a DVD-by-mail service that charged a flat-rate monthly subscription rather than a per-disc rental fee. Customers don't pay a cent in mailing expenses, and there are no late fees.

Netflix offers nine different subscription plans, starting at less than \$5. The most popular is a \$16.99 option that offers customers three movies at a time, and unlimited returns each month. Videos arrive in red Mylar envelopes. After tearing off the cover to remove the DVD, customers reveal a pre-paid return address. 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 website to rate videos they've seen, specify their movie preferences, get video recommendations, check out DVD details, and even share their viewing habits and reviews. In 2007, the firm added a "Watch Now" button next to those videos that could be automatically streamed to a PC. Any customer paying at least \$8.99 for a DVD-by-mail subscription plan can stream an unlimited number of videos each month at no extra cost.

## TECH AND TIMING: CREATING KILLER ASSETS

<sup>3</sup> Graphic from the NetFlix PR Kit, online at [www.netflix.com](http://www.netflix.com)

To understand Netflix strengths, it's important to view the firm as its customers see it. And for the most part, what they see they like – a lot! Netflix customers are rabidly loyal and rave about the service. The firm repeatedly ranks at the top of customer satisfaction surveys. Ratings agency Forsee has, for seven times in a row, named Netflix the number one e-commerce site in terms of customer satisfaction (placing it ahead of Apple and Amazon, among others). Netflix has also been cited as the best at satisfying customers by Nielsen and FastCompany, and in January 2007 the firm was 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, through quality experience, get you to stay, 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 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 it's at the center of brand building efforts. Let's look at how the firm does it.

### **Selection: The Long Tail in Action**

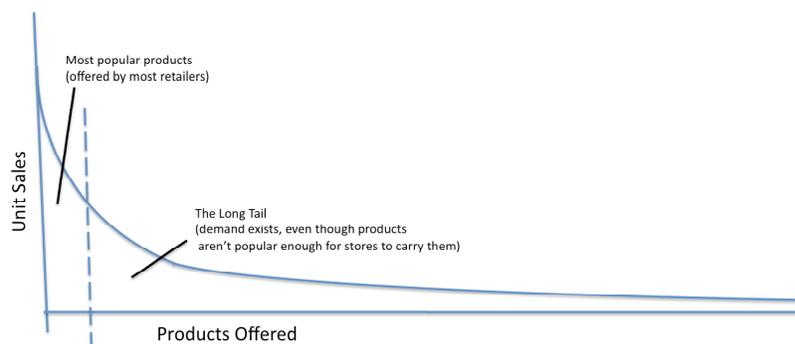
Customers have flocked to Netflix in part because of the firm's staggering selection. A traditional video store (and Blockbuster has some 7,800 of them) stocks roughly 3,000 DVD titles on its shelves. For comparison, Netflix is able to offer its customers a selection of over 100,000 DVDs, and rising! 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 stocks 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.). You get the picture – there's a breakeven point that is arrived at by considering the geographic constraint of the number of customers that can reach a location, factored in with 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 (think songs on iTunes), 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. Music service Rhapsody makes more from songs outside of the top 10,000 than it does from songs ranked 10,000 and above. At Amazon.com, roughly 60 percent of books sold are titles that aren't available in even the biggest Borders or Barnes & Noble Superstores<sup>4</sup>. And at Netflix, over two-thirds of DVDs shipped are from back-catalog titles, not new releases (Blockbuster outlets do about 70 percent of their business in new releases). Consider that Netflix sends out 45,000 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 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 below) 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 left 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 sold through traditional stores alone.



**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 mega-hit. The long tail gives the firm a selection advantage (read one based on scale), that traditional stores simply cannot match.

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<sup>4</sup> Anderson, 2004

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”<sup>5</sup>. While there are roughly 1.7 million South Asians living in the US, 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 100,000 Bollywood DVDs a month. As geographic constraints go away, untapped markets open up!

The power of Netflix can revive even well-regarded work by some of Hollywood’s biggest names. In between the *Godfather* and *Godfather Part II*, director Francis Ford Coppola made “*The Conversation*”, a film starring Gene Hackman that, in 1975, was nominated for a Best Picture Academy Award. Coppola has called *The Conversation* the finest film he has ever made<sup>6</sup>, but it was headed for obscurity as the ever-growing pipeline of new releases pushed the film off of video store shelves. Netflix was happy to pick up *The Conversation* and put it in the long tail. Since then, the number of customers viewing the film has tripled, and on Netflix, this once under-appreciated gem became the 13<sup>th</sup> most watched film from its time period.

Netflix has used the long tail to its advantage, crafting a business model that creates close ties with film studios. Studios love Netflix because they earn a percentage of the subscription revenue for every disk sent out to a Netflix customer. In exchange, Netflix gets to buy the studio’s DVDs at 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 its 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’d otherwise likely never 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 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 American (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”<sup>7</sup>. 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.

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<sup>5</sup> Anderson, 2004

<sup>6</sup> Leonhardt, 2006

<sup>7</sup> Bates, 2007



gave Cinematch to its competitors, they'd be without the over-two-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.

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 Blockbuster and the average user abandons the 200-plus films they've rated. Even if one is willing to invest the time in recreating their ratings on Blockbuster's 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 Netflix *churn* rate. Churn is a marketing term referring to the rate at which customers leave a product or service. 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 four percent, an all-time low. And the firm's churn rates have continued to fall over time. By mid 2008, rates for customers in Netflix most active regions of the country were below three percent, meaning fewer than three in one hundred Netflix customers canceled their subscriptions each year<sup>9</sup>. To get an idea of how enviable the Netflix churn rates are, consider that in 2007 the mobile phone industry had a churn rate of 38.6%, while roughly one in four U.S. banking customers defected that year<sup>10</sup>.

All of this impacts marketing costs, too. Happy customers refer friends (read free marketing from a source consumers trust more than a TV commercial). 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. It's no wonder subscriber acquisition costs have been steadily falling, further contributing to the firm's overall profitability.

#### **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 4, "Web 2.0, Social Media and Peer Production").

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<sup>9</sup> Netflix Analyst Day, May 2008

<sup>10</sup> GeoConnexion, 2008

Rank	Team Name	Best Score	% Improvement	Last Submit Time
No Grand Prize candidates yet				
<b>Grand Prize - RMSE &lt;= 0.8563</b>				
No Progress Prize candidates yet				
<b>Progress Prize - RMSE &lt;= 0.8625</b>				
1	BellKor	0.8643	9.15	2008-08-28 15:12:06
2	BigChaos	0.8658	9.00	2008-08-20 20:13:21
3	PragmaticTheory	0.8662	8.96	2008-08-29 20:11:17
4	When Gravity and Dinosaurs Unite	0.8676	8.80	2008-08-09 13:26:30
5	My Brain and His Chain	0.8678	8.79	2008-08-29 22:09:08
6	Grindly	0.8686	8.70	2008-08-21 14:37:55
7	Just a guy in a garage	0.8687	8.69	2008-08-28 09:04:32
8	acmebill	0.8705	8.50	2008-07-28 19:33:48
9	Cas	0.8711	8.44	2008-08-25 05:00:23
<b>Progress Prize 2007 - RMSE = 0.8713 - Winning Team: KorBell</b>				
10	KorBell	0.8712	8.43	2007-10-01 23:25:23
11	bashtc	0.8714	8.41	2008-05-21 22:06:00
12	Opera Solutions	0.8718	8.37	2008-08-28 22:44:17
13	pengpengzhou	0.8718	8.37	2008-08-27 00:18:41
14	Dan Tilberg	0.8723	8.31	2008-03-28 20:58:05

**The Netflix Prize Leaderboard**

The goal was simple: Offer \$1 million to the first group or individual who can improve Cinematch's ratings accuracy by 10%. 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 has attracted over 20,000 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 chat 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 scheduled for Fall 2008 incorporation into Cinematch.

### 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 20 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<sup>11</sup>.

In the true spirit of the long tail, Netflix has begun acquiring 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? \$0<sup>12</sup>.

Netflix has since begun trawling film festivals for gems to add to its long tail. Eighty-five percent of films screened at Sundance don't get distribution deals, so Netflix may be the only chance for budding directors to get their work in front of a wider audience. Netflix even uses data mined from its Cinematch ratings and viewer request patterns to determine what to pay for distribution rights. The offer price for *Favela Rising*, a documentary about Brazilian musicians, was determined after examining customer requests for documentaries and movies set in Brazil<sup>13</sup>.

## A Look at Operations

<sup>11</sup> Netflix Analyst Day, May 2008

<sup>12</sup> Anderson, 2004.

<sup>13</sup> Mullaney, 2006.

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 over 50 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 119 U.S. Postal Service processing & distribution facilities.

By 4 a.m. each weekday, Netflix trucks collect the day's DVD shipments from these U.S.P.S. hubs and returns the discs to the nearest Netflix center. DVDs are fed into custom-built sorters that handle disc volume on the way in and the way out. Most DVDs never hit the re-stocking shelves - scanners pick out incoming titles that are destined for other users, placing 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 pre-sorts all outgoing mail for faster delivery. This extra effort has a payoff – Netflix gets the lowest possible postal rates for first-class mail delivery.

First-class mail takes only one day to be delivered within a 50-mile radius, so the warehouse network allows Netflix to service over 97 percent of its customer base within a two-day window – one day to get in, early the next morning to process the next item in their queue, with arrival of that new title at the customer's address by that afternoon. That means a customer with the firm's most popular 'three disk at a time' plan could watch a movie a day and never be without a fresh title.



**A Proprietary Netflix Sorting Machine & USPS Hubs Served by the Netflix Distribution Center network<sup>14</sup>**

Warehouse processes don't exist in a vacuum; they're 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. If a customer's local fulfillment center looks like it won't have enough DVDs of a particular title to meet demand, Cinematch will recommend another title that it should have in stock.

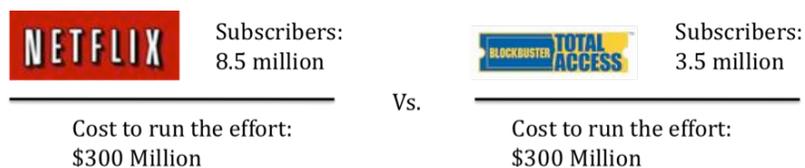
<sup>14</sup> Images from Netflix Analyst Day, May 2008

Everyone on staff is expected to have an eye on improving the firm's processes. Every warehouse worker gets a free DVD player and 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 phone call 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 115,000 customers, Netflix had 100 phone support reps. By the time the customer base had grown thirty-fold, errors had been reduced to so that only 43 reps were needed<sup>15</sup>. 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.

### **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 Andy Rendich, "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"<sup>16</sup>. While we referred to Netflix as David to 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<sup>17</sup>. Think about how this relates to economies of scale. In the previous chapter 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 below). And the firm with better scale economies is in a position to lower prices, 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.



**Running a nationwide sales network costs an estimated \$300 million a year. But Netflix has over 3.5 times more subscribers than Blockbuster. Which firm has economies of scale?**

<sup>15</sup> McGregor, 2005.

<sup>16</sup> Netflix Analyst Day, 2008

<sup>17</sup> Reda and Schulz, 2008

For Blockbuster, the arrival of Netflix plays out like a horror film where they're the victim. For several years now, the in-store rental business has been a money loser. Things got worse when, in 2005, Netflix pressure forced Blockbuster to drop late fees, costing it about \$400 million<sup>18</sup>. The Blockbuster store network once had the advantage of scale, but then its many locations were seen as an inefficient and bloated liability. Between 2006 and 2007, the firm shuttered over 570 stores<sup>19</sup>. By 2008, Blockbuster had been in the red for ten of the prior eleven years. During a three-year period that included the launch of its Total Access DVD-by-mail effort, Blockbuster lost over \$4 billion<sup>20</sup>. The firm tried to outspend Netflix on advertising, even running Super Bowl ads for Total Access in 2007, but a money loser can't outspend its more profitable rival for long, and it has since significantly cut back on promotion. Blockbuster also couldn't sustain subscription rates below Netflix's, so it has given up its price advantage. In early 2008, Blockbuster even pursued a merger with another struggling giant, Circuit City, a strategy that has left industry experts scratching their heads. A Viacom executive said about the firm, "Blockbuster will certainly not survive and it will not be missed"<sup>21</sup>. This has gotta hurt, given that at one point, Viacom was once Blockbuster's parent (the firm was spun off in 2004). No love from Papa.

For Netflix, what delivered the triple scale advantage of the largest selection, the largest network of distribution centers, and the largest customer base, plus 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 what seems to be an extraordinarily valuable pool of assets that continue to grow and strengthen over time. To be certain, competing against a wounded giant like Blockbuster will remain difficult. The latter firm has few options and may spend itself into oblivion, harming Netflix in its collapsing gasp. And 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".

## **FROM ATOMS TO BITS: OPPORTUNITY OR THREAT?**

Nicholas Negroponte, the former head of MIT's Media Lab, wrote an essay in 1995 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 and Monster.com. Apple dominates music sales, selling not a single 'atom' of physical CDs, while most of the atoms-selling 'record store' chains of a decade ago are bankrupt. Amazon has even begun delivering digital books, developing 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

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<sup>18</sup> Mullaney, 2006

<sup>19</sup> Farrell, 2007

<sup>20</sup> MacDonald, 2008

<sup>21</sup> Epstein, 2006

book? Kindle can slurp your purchases through the air and display them on a device lighter than most college textbooks.

Video is already going digital, but Netflix, as it's conceived today is focused on handling the atoms of DVDs. The question is, will the atoms to bits shift crush Netflix and render it as irrelevant as Hastings did Blockbuster? Or can Reed pull off yet another victory and recast his firm for the day that DVDs disappear?

Concerns over the death of the DVD and the relentless arrival of new competitors are probably the main cause for Netflix's stock volatility these past few years. Through 2008, the firm's growth, revenue, and profit graphs all go up and to the right, but the stock has experienced wild swings as pundits have mostly guessed wrong about the firm's imminent demise (one well-known Silicon Valley venture capitalist even referred to the firm as 'an ice cube in the sun'<sup>22</sup>, a statement Netflix countered with three years of record-breaking growth and profits). The troughs on the Netflix stock graph have proven great investment opportunities for the savvy. NFLX was up more than 70 percent in early 2008, a time when the sub-prime crisis hammered the major exchanges. But even the most bullish investor knows there's no stopping the inevitable shift from atoms to bits, and the firm's share price swings continue. When the DVD dies, the high-tech shipping and handling infrastructure that Netflix has relentlessly built will be rendered worthless.

Reed Hastings clearly knows this, and he has a plan. "We named the company Netflix for a reason; we didn't name it DVDs-by-mail"<sup>23</sup>. But he also prepared the public for a first-cut service that was something less than we'd expect from the long-tail poster child. When speaking about the launch of the firm's Internet video streaming offering in January 2007, Hastings said "it will be underwhelming". The two biggest limitations of this initial service? As we'll see below, not enough content, and figuring out how to squirt the bits to a television.

### **Access to Content**

First the content. A year after the launch of Netflix streaming option (enabled via a "Watch Now" button next to movies that can be viewed online), only 10,000 videos were offered, just 10 percent of the firm's long tail. And not the best 10 percent. Why so few movies? 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 pay 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

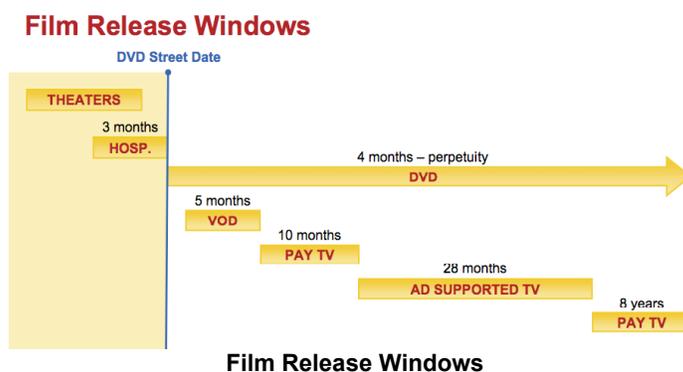
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<sup>22</sup> Copeland, 2008

<sup>23</sup> Boyle, 2007

broadcast). Pay television channels, in particular, have negotiated exclusive access to content as they strive to differentiate themselves from one another. This means that even when a title becomes available for streaming by Netflix, it may disappear when a pay TV window opens up. If HBO, Showtime, or Starz has an exclusive for a film, it's pulled from the Netflix streaming service until the exclusive pay TV time window closes.

Add to all this 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 titles at competitive pricing during the peak new release DVD period<sup>24</sup>. Taken together it's clear that shifting the long tail from atoms to bits will be significantly more difficult than buying DVDs and stacking them in a remote warehouse.



### 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 “Watch Now” button first worked only on Windows PCs. Although the service was introduced in January 2007, the months before were fueled with speculation that the firm would partner with Tivo. Just one month later, Tivo announced its partner – Amazon.com. 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), the cable companies delivered OnDemand through their set-top boxes, and now Amazon had Tivo.

The Netflix solution was to think beyond one hardware partner and recruit many. The firm has developed a software platform and made this available to consumer electronic firms seeking to build Netflix access into their devices. LG Electronics announced the first device at the 2008 Consumer Electronics Show. By mid-year there were four manufacturers committed to building devices with Netflix streaming capability. These included Roku, a startup that offered a tiny box for just \$99.

While the first generation Roku device has received positive reviews, Netflix hopes access to its service will eventually be built into all sorts of devices, including DVD players, televisions, and

<sup>24</sup> Grover, 2006

game consoles. Netflix has already struck a deal to stream titles over Xbox. But it may be the switch to Blu-ray DVDs that offers the most promise. Blu-ray players are on the fast track to commoditization. A host of vendors will offer boxes that do essentially the same thing. If consumer electronics firms incorporate Netflix access into their players as a way to attract more customers with an additional, differentiating feature, Hastings' firm could end up with more living-room access than either Amazon or Apple. There are 73 million households in US that have a DVD player and an Internet connection. Should a large portion of these homes end up with a Netflix-ready Blu-ray player, Hastings will have built himself an enviable base through which to grow streaming video.

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. Apple's early efforts were limited, with the firm offering only video purchases for Apple TV, but eventually moving to online 'rentals' that can also play on iPods. Movie studios are now all in Apple's camp, although the firm did temporarily lose NBC's television content in a dispute over pricing. Amazon and Microsoft also have online rentals and purchase services, and can get their content to the television via Tivo and Xbox, respectively. Hulu, a joint venture backed by NBC, Fox, and other networks, is free, earning money from ads that run like TV commercials. While Hulu has also received glowing reviews, the venture has lagged in offering a method to get streaming content to the television. The Netflix pioneered 'all you can eat' subscription streaming. Anyone who has at least the \$8.99 subscription plan can view an unlimited amount of video streams. Waiting in the wings are a host of additional competitors, including Blockbuster's MovieLink, a service it purchased in Fall 2007.

Another tricky part of this competition is that the Netflix return on investment for streaming isn't yet clear. The company spent \$40 million on streaming in 2007, has another \$70 million earmarked for 2008, but when the effort will be profitable is unknown. The extra spending doesn't come at the best time. The switch to Blu-ray DVD means that Netflix will be forced into the costly proposition of carrying two sets of video inventory – standard and high-def. It may be that direct profits aren't the driver. Rather, the service may be a feature that attracts new customers to the firm, and helps prevent subscriber flight to rival video-on-demand efforts. The stealth arrival of a Netflix set-top box, in the form of upgraded Blu-ray DVD players, might open even more customer acquisition opportunities to the firm. Bought a Blu-ray player? For just \$9 bucks a month you can get a ticket to the all-you-can-eat Netflix buffet. And more customers ready to watch content streamed by Netflix may prime the pump for studios to become more aggressive in licensing more of their content. Many TV networks and movie studios are leery of losing bargaining power to a dominant firm, having witnessed how Apple now dictates pricing terms to music labels. The goodwill Netflix has earned over the years may pay off if it can become the studios' partner of first choice.

While one day the firm will lose the investment in its warehouse infrastructure, nearly all assets has 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 won't flick on like a light switch, it will be a hybrid transition that takes place over several years. If the firm can grab long-tail content, grow its customer base, and lock them in with the switching costs created by Cinematch (all big 'ifs'), it just might emerge as a key player in a bits-only world. And there's an upside to the model

when it shifts to streaming. Postage represents one-third of the firm's expenses. At some point, if postage goes away, Netflix may be in a position to offer even greater profits with its studio suppliers. Is the hybrid strategy a dangerous straddling gambit or a clever ploy to remain 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!

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### **About the Author:**

John Gallagher is a member of the Dept. of Information Systems in Boston College's Carroll School of Management. Prof. Gallagher teaches courses and conducts research at the intersection of technology and strategy. He leads the School's TechTrek programs, co-leads the Asian field study program, and has consulted to and taught executive seminars for several organizations including Accenture, Alcoa, Brattle Group, ING Group, Patni Computer Systems, Staples, State Street, and the U.S. Information Agency. Writings, podcasts, course material, and research by Prof. Gallagher can be found online at [www.gallaughher.com](http://www.gallaughher.com).

This reading is available to faculty for non-commercial use. Enjoy! If you do use it, please send an e-mail to [john.gallaughher@bc.edu](mailto:john.gallaughher@bc.edu). More chapters and cases will follow in Professor Gallagher's forthcoming book "Information Systems: A Manager's Guide to Harnessing Technology", to be published (in both free online and low-cost print version) by Flat World Knowledge ([FlatWorldKnowledge.com](http://FlatWorldKnowledge.com)). Thanks!

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