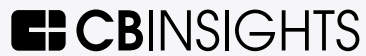


2023

29 business moats that helped shape the world's most massive companies



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A business moat is a key competitive advantage that sets a company apart from its competitors. From Amazon and Tesla to Starbucks and Coinbase, here is how 29 of the world's biggest companies have built and defended their moats.

What do companies like [Amazon](#), [Uber](#), and [Starbucks](#) have in common?

Among several shared characteristics, these companies thrive by understanding, building, and strengthening their business moats — the key competitive advantages that set them apart.

[Warren Buffett](#) helped popularize the concept, saying a company's moat (or lack thereof) means everything when deciding to invest in it:

"The key ... is not assessing how much an industry is going to affect society, or how much it will grow, but rather determining the competitive advantage of any given company and, above all, the durability of that advantage."

Companies can build moats by strengthening their brands, achieving economies of scale, or even lobbying for special status from the government. In return, they can receive customer loyalty, pricing power, and legal protections that make it difficult for other companies to compete with them.

In the 20th century, the biggest companies in the world were built on moats of economies of scale or government. Standard Oil, for example, built its monopoly by buying up smaller competitor refineries and building a global distribution network. Eventually, the company controlled about 90% of all the refineries and pipelines in the United States and could set its own prices.

Today, however, the most durable moats are being built on different types of advantages, such as network effects, data, and repeat engagement within a product ecosystem.

Google, for example, started its moat by developing a better algorithm for indexing and searching the internet. The company has since strengthened that moat by putting that advantage to work in transportation, shopping, and, most importantly, advertising.

Below, we look into 29 business moat examples and dive into how they work.

The examples below were chosen according to criteria such as size, business success, and ability to illustrate the mechanics and advantages of a particular type of business moat. Many of these companies could fit into multiple categories of business moat, even though we only list one per company.

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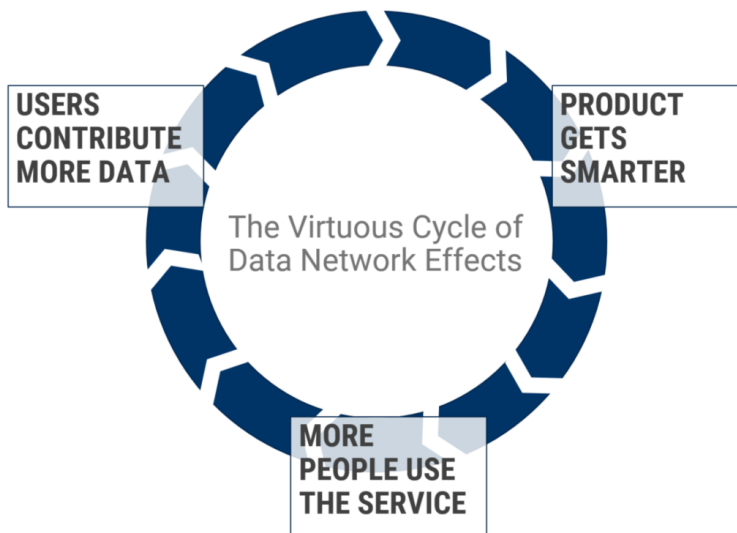
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Network effects

A product has a network effect when its value to its users increases in proportion to its use and the number of users using it.

For example, the telephone wasn't very useful when only a handful of first adopters had one. The more people that acquired telephones, however, the more useful they got. Once virtually everyone had a telephone in their home, it became indispensable.

The same logic has powered the growth of social networks, which are extremely sticky if all of your friends are on them – and useless if they're not.



Because network effects can allow a product to gain wide utility fast, they can help companies build formidable business moats. A product with strong network effects can be extremely difficult to dislodge, though not impossible if a competitor project is better at leveraging network effects ([MySpace's](#) fall to [Facebook](#) is one high-profile example of this).

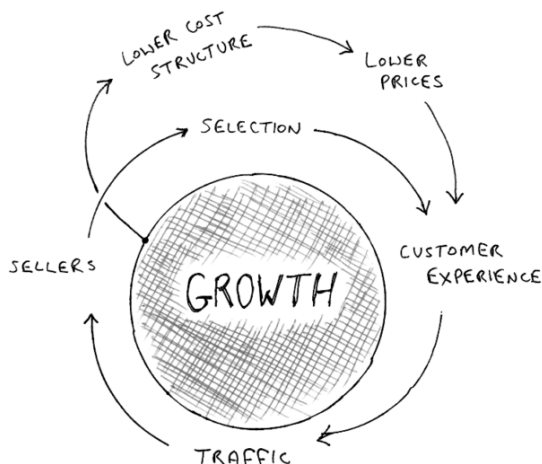
Companies that build products with network effects can generate a few different kinds of business moats around their companies, depending on how their network effects work.

MARKETPLACE NETWORK EFFECTS

A marketplace network effect exists when a company derives a durable competitive advantage from bringing together customers and suppliers in some kind of marketplace.

In the best-case scenario, aggregating the supply and demand for a given good or service creates a self-reinforcing cycle of growth built on network effects. As more competing suppliers join the marketplace, customers find that it provides more efficient and less expensive service.

As more customers are drawn to the marketplace for its quality or low prices, more suppliers join, driving further competition and growth.



AMAZON'S FLYWHEEL

Leveraging marketplace network effects, Amazon was able to reduce prices, expand inventory, and decrease shipping times, growing from a small online bookstore to the dominant global e-commerce marketplace.

DATA NETWORK EFFECTS

A data network effect exists when a company can gain a competitive advantage by gathering user data and making that data more valuable.

In a product with a data moat, there is a “central repository” of data, as Andreessen Horowitz’s Alex Rampell calls it. The more people adding to this repository, the more useful it becomes. Companies can use that data both to attract other users to the platform and to build better algorithms to provide a better product.

Google, for example, built its competitive advantage on its search algorithms and then built a moat by applying that advantage to its advertising capability.

PLATFORM NETWORK EFFECTS

A platform network effect exists when a company builds a durable competitive advantage by keeping its users engaged in its product ecosystem.

Platform moats are generally built on one product – for example, the iPhone or Windows – that becomes core to a user’s life or work. New products that are released – such as the App Store or Microsoft Office – both reinforce the core product’s initial value and layer more value on top of it.

Each successful new product makes staying in the ecosystem more valuable, increases the cost of switching, and keeps users' attention and money within the platform.

DURABILITY IS KEY

These three techniques — aggregating suppliers and customers, collecting valuable data, and building a product ecosystem — won't always result in a moat. History is full of companies that have built temporary advantages based on network effects that then fell.

Moats are made of durable competitive advantages, and durability hinges on a number of factors, including:

- **User acquisition:** whether the cost to acquire new users, customers, or suppliers decreases with scale
- **Switching costs:** whether it is cumbersome or expensive for customers to switch to another company for the same service
- **Engagement:** whether the product becomes stickier and more engaging as it grows

The better any product with network effects can optimize its cost of user acquisition, capitalize on high switching costs, and increase engagement, the more likely it is to be able to maintain its user base and fend off competitors.

What is a network effect?

A product has a network effect when its value to its users increases in proportion to its use.

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Marketplace

Marketplace network effects exist when a company derives a durable competitive advantage from bringing together customers and suppliers in some kind of marketplace.

Data

Data network effects exist when a company can gain a competitive advantage by gathering user data and making that data more valuable.

Platform

Platform network effects exist when a company builds a durable competitive advantage by keeping its users engaged in its product ecosystem.

Marketplace

Amazon's central business advantage comes from aggregating suppliers and customers. Lower prices attract more customers, more customers attract more sellers, and so on. Over time, Amazon has added new features, retail verticals, and marketplaces in pursuit of increasing user engagement and fueling growth.

Marketplace • OpenTable®

OpenTable's domination of the online restaurant reservation market has been built on its ability to attract a critical mass of restaurants and diners to its platform. While most products with network effects aren't useful until there are many people on the network, OpenTable started out by building and selling a piece of software that delivered value to restaurants even without any customers involved.

Marketplace

Early on, Uber attracted independent drivers (the supply) to its platform by offering a guaranteed source of customers. At the same time, Uber attracted users (demand) by providing them with a guaranteed driver. Bringing these two sides of the marketplace together created a virtuous circle of growth.

Marketplace airbnb

Airbnb harnesses the power of marketplace network effects by bringing together millions of hosts and guests. Each new guest provides more business to the hosts and increases the incentive to list rentals. And as more hosts join the marketplace, they enhance the value of the system by providing travelers with more options to choose from and places to visit.

Marketplace PayPal

PayPal's early innovation in online payments kick-started a marketplace that continues to grow today. Its network of merchants and shoppers took off because both sides saw immediate value by using PayPal: Shoppers could make more convenient and secure online payments, while merchants could attract shoppers that would spend more than the average buyer.

Data

Google's powerful data moat started with a single technological innovation: better web search. Over time, Google's dominance over search and the data gathered from it have allowed the company to build a powerful competitive advantage in advertising, transportation, and shopping.

Network effects

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Marketplace

Marketplace network effects exist when a company derives a durable competitive advantage from bringing together customers and suppliers in some kind of marketplace.

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Data network effects exist when a company can gain a competitive advantage by gathering user data and making that data more valuable.

Platform

Platform network effects exist when a company builds a durable competitive advantage by keeping its users engaged in its product ecosystem.

Platform



While the iPhone has been hailed for its design and functionality, the real engine of the iPhone's success has not been the phone itself, but the operating system inside it and the ecosystem around it. The durability and stickiness of the Apple ecosystem comes down largely to iOS and the ways that it incentivizes users to stick around.

Platform

facebook

Facebook is one of the fastest-growing tech companies of all time, largely because of the power of the network that it's been able to build. The more friends a user had on Facebook, the more value the user could get out of it. By getting increasingly involved in users' social activities, Facebook also decreased the likelihood that its users would ever be able to leave the platform after joining up.

Platform



Tesla has built a complex ecosystem of products that reinforce value. This moat has electric vehicles at its core. But the company has also built advanced software, offers thousands of supercharger stations around the world, and sells complementary products like in-home energy storage and solar roofs. Tesla's platform network effects are also boosted by Elon Musk's personal brand and involvement with other high-tech companies like SpaceX.



1. Marketplace: The virtuous circle that made Amazon a trillion-dollar business

While [Amazon's](#) dominance has been built on a variety of moats, its central business advantage derives from harnessing the marketplace network effects that come from aggregating suppliers and customers.

Amazon recognized early on that the more people in its network — both suppliers and customers — the lower the prices it could offer to buyers. Lower prices meant a better customer experience that attracted more customers; more customers attracted more sellers; more sellers meant a better selection of goods and prices; better goods and prices created a better customer experience; and so on.

Over time Amazon has expanded into new retail verticals, added features, and even created marketplaces that compete with its own marketplace — all in the pursuit of increasing user engagement and fueling a virtuous circle of growth.

In the late 1990s, Amazon first began expanding from books to other media products, like CDs, movies, and other electronics. A few years later, Marketplace launched, giving third-party sellers the ability to sell products alongside the Amazon listing.

While the Marketplace technically may have cannibalized Amazon sales, it served the purpose of the Amazon flywheel by reinforcing for customers that Amazon was the best and cheapest place to shop.

Bringing in more customers through better functionality and growth into new verticals, Amazon used the growth that resulted to bring in more suppliers, who began to see Amazon as the best way to reach a global customer base and increase their revenues.

In 2005, Amazon used its newfound capabilities in shipping and logistics to start its Prime program, offering free 2-day shipping inside the contiguous United States for an annual price of \$79. Prime made Amazon delivery faster than virtually any other e-commerce outlet and created an inflection point in the company's growth. As of April 2021, membership in the Prime program is over 200M worldwide.

**“I want to draw a moat around our best customers,”
Bezos said while Amazon was planning Prime. “We’re
not going to take our best customers for granted.”**

In 2006, Amazon launched Amazon Web Services in earnest with the release of Elastic Compute Cloud. After improving its own back-end in order to better scale up its computing power, Amazon was then able to make that same power available to startups and other customers.

Today, AWS is Amazon's third-largest source of revenue. With the growth of AWS, Amazon's computing power rose, and its unit costs on renting that power out to others fell.

Amazon continues to use its profits to lower prices, increase supply, and build a better customer experience – feeding the fundamental flywheel that helped it become the biggest online retailer in the world.

For example, in June 2017, Amazon announced that it was acquiring Whole Foods for \$13.7B. Immediately, the company lowered prices on high-volume Whole Foods items and threaded in Prime membership discounts.

When Amazon enters a new market, it does so with its formidable scale, massive user base, and a willingness to duke it out in industries with razor-thin margins – a strategy that has allowed it to grow from a small bookseller to a true Everything Store.

2. Marketplace: How OpenTable created a monopoly by giving restaurants a 'single-player mode'

OpenTable's domination of the online restaurant reservation market has been built on its ability to attract a critical mass of restaurants and diners to its platform.

OpenTable's simple online interface offered diners a more convenient way to make a restaurant reservation while also offering restaurants a more efficient way to manage reservations, get more customers through the doors, and deal with the industry's famously thin margins.

While most products with network effects aren't useful until there are many people on the network (like the telephone), OpenTable started out by building and selling a piece of software that delivered value even without any customers involved – a strategy that a16z partner Chris Dixon calls “single player mode.”

“The first million people who bought VCRs bought them before there were any movies available to watch on them. They just wanted to ‘time shift’ TV shows – what we use DVRs for today. Once there were millions of VCR owners, it became worthwhile for Hollywood to start selling and renting movies to watch on them... Thus, a product that eventually had very strong network effects got its initial traction from a ‘standalone use’ – where no other VCR owners or complementary products needed to exist.”

The original OpenTable app for restaurants was essentially an electronic reservation book for restaurants that made the day-to-day work of turning over tables more straightforward and less error prone.

The app also became the necessary foundation of the reservation tool that would follow since so few restaurants had digitized back-ends. When the OpenTable team successfully pitched restaurants on this software, they were also successfully pitching the idea of putting a networked computer inside the restaurant.

The more restaurants OpenTable got to use that software, the more attractive the idea of an online reservation system became for both the demand and supply side of the marketplace. More restaurants meant more choices for consumers. More choices attracted more consumers, which gave restaurants more business.

The idea took off, and by the time OpenTable went public in 2009, the company was claiming that a third of the 30,000 reservation-taking restaurants in America were OpenTable customers.

OpenTable also benefited from making its product a core part of everyday operations. The company put a proprietary software terminal in the thousands of restaurants that signed up to use the service. That terminal became used for regular operations (not just OpenTable), creating a significant barrier to entry for other companies hoping to edge into the restaurant reservation market. To give up OpenTable, a restaurant would have to toss out a major piece of infrastructure, not to mention a source of traffic.

The difficulty of switching to a competitor platform has allowed OpenTable to establish a highly favorable take rate: OpenTable's most popular pricing plan charges restaurants \$249 per month for its platform, plus \$1 per reservation.

While these rates fueled OpenTable's significant growth through the early parts of the 2000s, they have also prompted a wave of disruptive startup competitors like [Resy](#), launched in 2014 and acquired by American Express in 2019.

While OpenTable remains the tool of choice for booking reservations at Michelin Star restaurants, Resy and other tools are gaining ground when it comes to smaller and newer restaurants – suggesting that OpenTable’s moat was showing some vulnerabilities among newer restaurants not already locked into its platform.

But even as new competitors emerge, OpenTable still has a big advantage when it comes to scale. For about a decade, OpenTable was essentially the only player in the restaurant reservation market, giving it a huge head start in acquiring customers and restaurants.

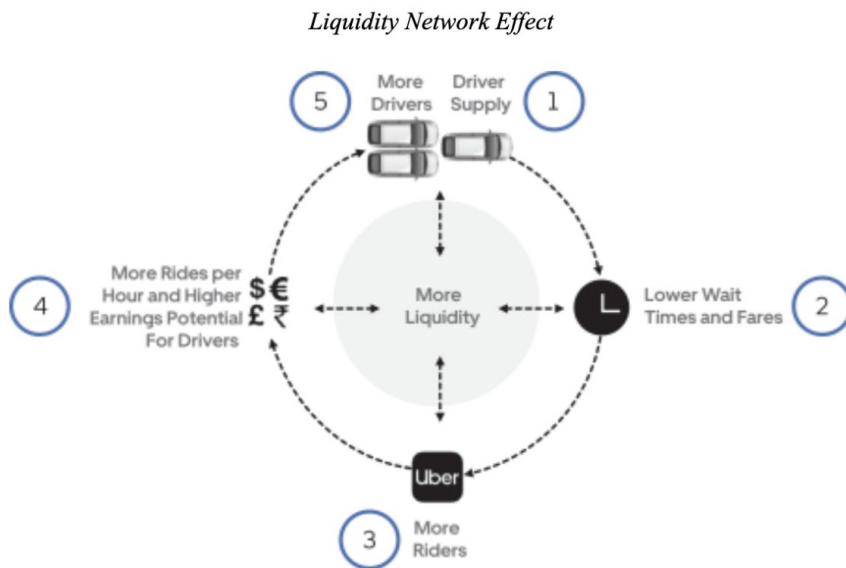
3. Marketplace: How Uber dominated ride-sharing by owning supply and demand

Uber has become an archetypal example of a company built on aggregating supply and demand.

Early on, Uber attracted independent drivers (the supply) to its platform by offering a guaranteed source of customers. For drivers without a central dispatcher, it could be difficult to find fares, and drivers would often have to idle near hotels and airports to make their living. With Uber, those drivers could pick up fares at any time, giving them a way to make money during the dead time between pickups.

At the same time, Uber attracted users (demand) by providing them with a guaranteed driver. When cab services dominated non-public transportation, it could be challenging even in major cities to find a ride during non-optimal working hours or bad weather (research has shown an average of 7% fewer cabs on the road when it rains in New York City).

To ensure that a ride was always available when a potential fare opened the app, Uber used a model that would become known as surge pricing. During times of higher demand, prices on rides were raised, increasing the supply of drivers and increasing accessibility for the demand side.



Bringing these two sides of the marketplace together created a virtuous circle of growth.

With every new driver that Uber added to the platform, the geographic reach of the app increased: there were more drivers in more places, meaning a shorter wait for a ride for Uber customers.

The shorter the wait for a ride, the more users that Uber could attract. The more users Uber attracted, the more drivers it attracted too – further decreasing time-to-ride and increasing geographic reach.

Uber's ability to aggressively add drivers and riders to its platform through marketing and promotions kickstarted those network effects in each new market it entered, and the virtuous circles that resulted drove the company's fast growth around the world.

Uber's power over supply and demand – the guaranteed, fast, cheaper-than-a-cab rides that it can offer both customers and drivers – has been its key competitive advantage against competing rideshare companies.

As smaller competitors have emerged to challenge Uber in local markets, Uber's ability to manipulate its own supply and demand economics has helped it stay competitive. When fighting Juno and Gett in New York City, for example, Uber simply upped its driver incentives and discounted rides for Uber customers. That brought drivers – some of whom worked simultaneously for other services – back to Uber, where they could make more money. It also brought customers, who could easily use either service, back as well.

That strategy has been less effective against Lyft, which has become increasingly able to offer similar incentives within its marketplace, competing with Uber on price and driver availability.

Since there's little friction for drivers or users to switch between apps, there's little keeping someone from choosing one app over another.

Ultimately, to win against Lyft, Uber is betting not only on its marketplace moat but also reinvesting in its brand, hoping that its familiarity can give it an edge in a newly commodified rideshare industry. It is also investing in various other services and verticals, such as freight shipping and food delivery.

4. Marketplace: How Airbnb's massive network of hosts and guests makes it hard to ignore

Airbnb harnesses the power of marketplace network effects by bringing together 4M hosts and tens of millions of guests. Each new guest provides more business to the hosts and increases the incentive to list rentals. And as more hosts join the marketplace, they enhance the value of the system by providing travelers with more options to choose from and places to visit.

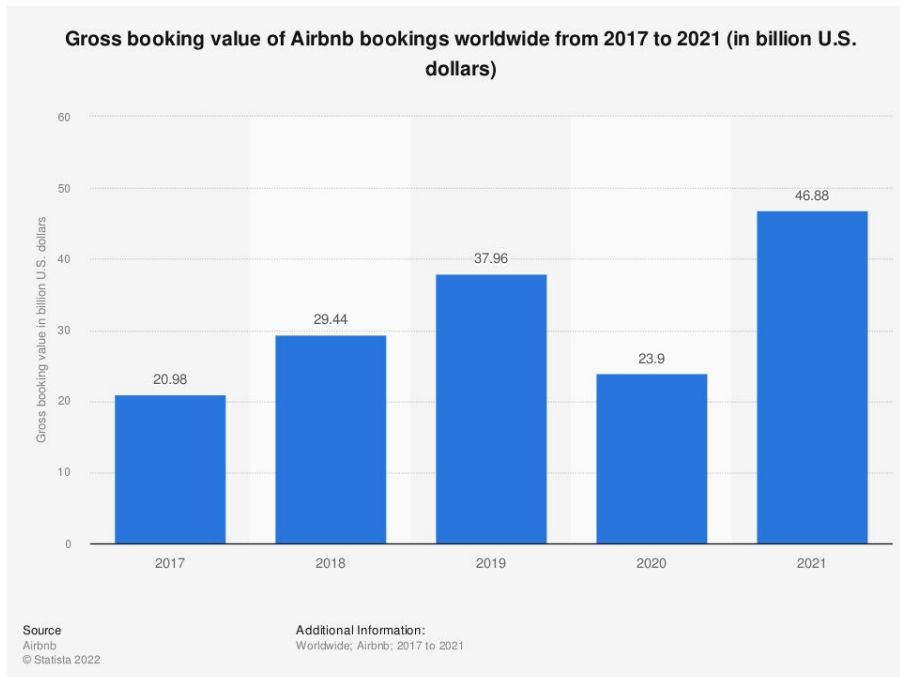
Both groups are incentivized to stick with Airbnb. Positive experiences with Airbnb hosts keep guests using the platform for future trips, while accrued positive reviews help hosts attract more customers. The network effects helped Airbnb capture around 20% of all US consumer lodging spend in 2019, according to a report by Bloomberg Second Measure.

And with millions of users interacting on its platform, the company is able to gather valuable data. Airbnb gets to learn users' travel plans, budgets, and various other data points. These insights then help the company to refine its products and deepen its relationship with users.

What makes Airbnb's moat even wider is its global reach. "Airbnb is the only hospitality brand that has the global awareness to generate unrivaled demand," writes Scott Galloway, a professor of marketing at the New York University Stern School of Business. "While competitors may have equity in a specific market, no brand sits on the iron throne across all markets as Airbnb does."

The depth and breadth of Airbnb's network also make the company highly resilient. In May 2020, for instance, Airbnb laid off a quarter of its staff in a bid to cut costs amid the Covid-19 pandemic. CEO Brian Chesky even considered pushing its IPO to 2021.

But Airbnb's bookings started recovering in June 2020 as people looked for rentals close to where they lived — places customers could reach while remaining socially distant and avoiding people-dense hubs like airports. And Airbnb was perfectly positioned to profit from this demand. Guests were able to choose from a wide range of options and booked for weeks and even months at a time. This boom in business allowed Airbnb to recover enough to even go public in December 2020.



SOURCE: STATISTA

Chesky is keen on further increasing Airbnb's moat. He said that the company plans on "educating the world about hosting, recruiting more hosts, simplifying the guest experience, and delivering a world-class service." Airbnb will need millions more hosts to keep the current momentum and handle the post-pandemic travel boom.

5. Marketplace: How PayPal built a \$100M business by serving both online sellers and buyers

In the early days of e-commerce, paying for products online was risky and inconvenient. Buyers had to enter credit or debit card details on every store's checkout page. It was an extra step that frustrated shoppers and left their card details exposed to data breaches.

Launched in 1999, PayPal offers an alternative option for online payments. Users link a bank account to their free, secure PayPal wallet and then enjoy express checkout by clicking the PayPal option on a seller's website. There's no longer a need to give credit card details to every online merchant, and filling in payment information is a one-and-done affair.

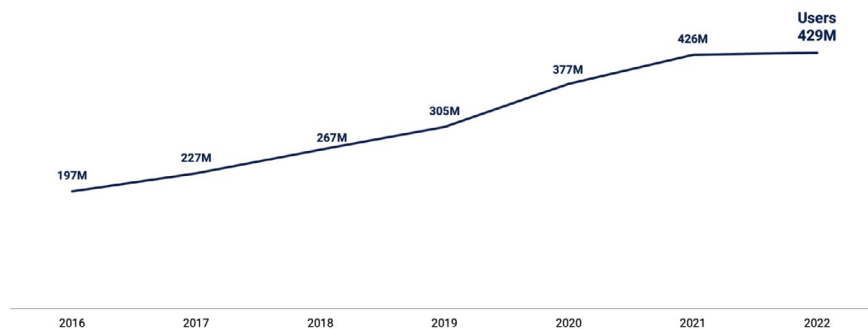
PayPal doesn't just benefit shoppers. For merchants, offering PayPal can lead to more sales. A recent Nielsen study found that PayPal users convert 28% more often at checkout compared to other payment methods. The same study notes that, on average, PayPal users buy more at each transaction and are more likely to make a repeat purchase from the same vendor.

Ultimately, shoppers want merchants to offer PayPal as a payment option because it's faster and safer than other alternatives. Merchants want shoppers to use PayPal because they buy more when they do. This push/pull network effect has helped PayPal continue to achieve double-digit revenue growth year after year. To date, PayPal is the most widely used payment processing system in the world, with over 40% market share.

PayPal's head start in online payments gave it a significant moat defense. The company's launch came 12 years before competitor [Stripe](#) released its online payment product and 15 years before Apple announced Apple Pay. By 2010, over 94M people were already using PayPal. As of 2022, that number has grown to over 400M.

PayPal's user base has more than doubled since 2016

Annual active users (as of 9/30/2022)



CBINSIGHTS Source: Business of Apps, company filings

Those numbers are significant because there's a convenience cost to switching to a different online payment app. Users would have to start over again with registering their bank account and cards with a new service provider.

PayPal also widens its moats through relationships that strengthen its allure for both sellers and buyers. In 2016, the company inked deals with credit card issuers Visa and Mastercard.

The agreement gave PayPal users more protected payment options and offered credit card providers access to PayPal's large user base. More recently, JPMorgan shuttered its own digital wallet in favor of letting customers link their Chase card to PayPal.

Even other digital wallets offer PayPal. Samsung users, for example, can pick PayPal as their default payment option while using the Samsung Pay platform. Alphabet also includes PayPal as a payment method in its Google Pay app. And PayPal plans to bring new integrations with Apple Pay to market in 2023.

As PayPal CEO Dan Schulman explained in a 2016 press release, "With each partnership agreement that we sign, we further expand the ubiquity and value of the PayPal brand and improve our own economics."

Moreover, PayPal has used its position as a market leader with plenty of cash on hand to purchase companies that add functionality and stickiness to its platform. Its previous acquisitions include:

- Online coupon and discount company [Honey](#) for \$4B;
- [iZettle](#) to grow its in-person payment product for \$2.2B; and
- An \$890M payout for [Xoom](#) that expands PayPal's remittance business.

These acquisitions have helped it gain a competitive edge by expanding its product offering. To this end, PayPal is shaping itself into a "super app" with a vast range of features — from bill pay and peer-to-peer payments to shopping and savings tools — which can help keep users engaged in its ecosystem.

While PayPal's stock price has tumbled since its July 2021 peak, the company doesn't appear to be slowing down. In Q1'22, nearly \$323B worth of transactions flowed through PayPal's platform – a 13% increase from the same period the year before. With a strong grip on its massive base of users and merchants, it could be difficult for any competitor to knock PayPal off the hill.

6. Data: How Google used its search expertise to build a wide data moat

Google's powerful data moat started with a single technological innovation – better web search – that gave the company a formula for disrupting a whole range of other services.

Larry Page and Sergey Brin developed the PageRank algorithm while Ph.D. students at Stanford. Unlike existing site-ranking algorithms that prioritized sites containing certain keywords, PageRank assessed a site's relevance according to the number of times it had been linked to by other websites.

This relatively simple difference quickly made Google the dominant internet search engine. By June 2000, it was Yahoo's new default for search, and in 2004, the company went public in a deal that gave Google a market capitalization of more than \$23B.

Over time, Google's dominance over search and the data gathered from it have allowed the company to build a powerful, durable competitive advantage in advertising. An estimated 8B+ searches take place on Google every day, making it the most popular website in the world.

Another factor that makes Google attractive to advertisers is that so many searches are made with the intent to buy a good or service. Airlines can advertise their flights when people search “flights to Miami,” bookstores can advertise their hours when people search “bookstore Brooklyn,” and so on.

In 2022, Google had about a 28.8% share of all US digital advertising revenue, according to Insider Intelligence. While this has decreased from a high of 34.7% in 2017, it still puts Google in the clear lead for digital ad spend.

The company's dominance of advertising is so complete that it has faced no fewer than 5 antitrust lawsuits from the US Department of Justice since 2020 – with the latest arriving in January 2023 – alleging that its control of advertising markets has led to anti-competitive and harmful effects for consumers.

However, Google isn't relying solely on its advertising moat to stay competitive.

The company also leverages its ability to constantly acquire new data about what people are searching for to improve search and build further moats in areas like transportation and shopping.

The most powerful differentiator for Google here is that the company can pair search information with other data sources it has access to, like mobile location data from the Google app.

The result is a layering of value. Search the name of a business on Google, and you can quickly see not just what time it's open but also what times of day are busiest – data Google has from mobile users visiting that location.

With its maps products like Waze, Google is constantly recording where people are on the road, where they're headed, and how long it's taking them to get there, generating a highly accurate real-time traffic map. When a user encounters a speed trap or slowdown, that information can then be transmitted to every other user of the app, making the experience better for everyone.

The deeper Google penetrates different facets of its users' lives, the better it becomes at serving users and the more personalized results it can serve up. This personalization makes users less likely to want to give up that convenience and go to another provider.

Type in "weather" into Google, and you can instantly get a forecast for your specific area. Type in "movies," and you'll see movies playing near you. Type in "plumber," and you get a list of plumbers that are not only local but "Google Guaranteed" – meaning Google will reimburse you if the job isn't done properly.

This data flywheel also feeds Google's advertising flywheel. As Google's involvement in users' lives gets deeper and more personalized, the targeting and personalization it can offer become more valuable for advertisers as well.

Google has largely been able to maintain its search superiority, both by offering "smart personalized results" and by retaining its status as the built-in browser on as many devices and operating systems as possible.

However, vulnerabilities in Google's search moat have already appeared. Today, for example, more product searches begin on Amazon than on Google.

The main source of potential disruption to Google's data moat over the next several years will be companies like Amazon, Yelp, and Expedia, which aim to offer deeper, more personalized search results.

7. Platform: The OS ecosystem that made Apple a trillion-dollar company

Apple has famously built a business with huge profit margins in an industry that's infamous for being difficult to make a profit in: mobile phones.

While the iPhone has been hailed for its design and functionality, the real engine of the iPhone's success has not been the phone itself but the operating system inside it and the ecosystem around it.

The durability and stickiness of the Apple ecosystem come down largely to iOS and the ways that it incentivizes users to stick around.

The first major lever that Apple used to keep people in its ecosystem was iTunes. The offering kept users around by becoming their definitive system for digital music, as music bought on iTunes could only be listened to on iTunes.

Another level was iCloud, which became the clearinghouse for all personal data. While migrating from iCloud to another service like Dropbox is possible, it doesn't make much sense if your primary computing device is an Apple computer.

Then there's the App Store, which keeps users around by being the access point for millions of applications.

On the hardware side, there are products like Apple TV and AirPods, which become more valuable when you have an iOS product to connect them to.

Every new product and service in the Apple ecosystem is designed to drive value for people using iOS and reinforce the value of staying inside the ecosystem.

The result has been a significant diversification in the products that Apple sells in large numbers. In February 2023, Apple CEO Tim Cook announced the company had over 2B active devices around the world between the iPhone, iPod Touch, Apple Watch, Mac, and Apple TV.

Of all those products, the iPhone drives nearly half of the company's revenue, and most of the company's attention still comes down to that cash cow.

As the iPhone begins to peak as a revenue driver for Apple, continuing the company's platform growth and bringing iOS and iPhone users into other high-margin products will be a crucial future strategy for the company.

8. Platform: How Facebook's control of the social graph made it hyper-durable

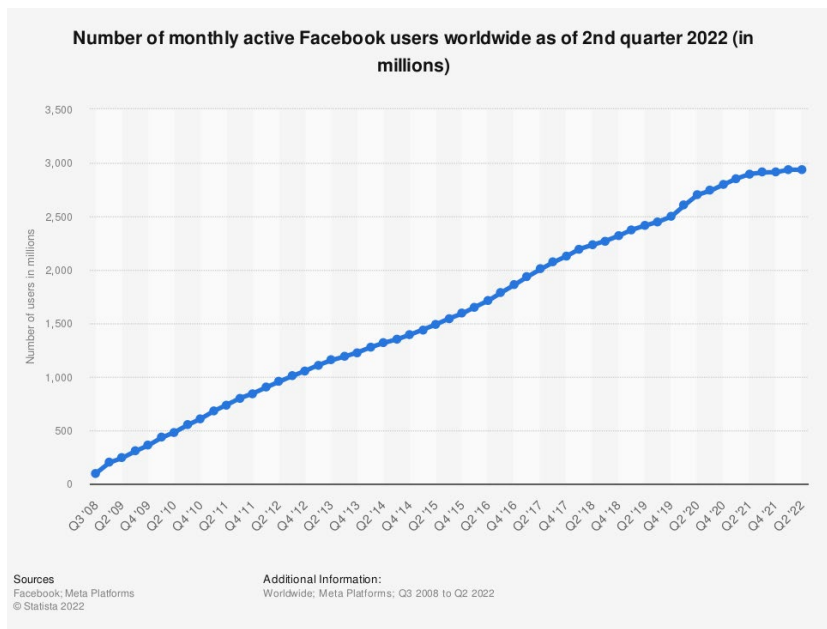
Facebook (now known as Meta following a rebrand in 2021) is one of the fastest-growing tech companies of all time, largely because of the power of the network that it's been able to build.

When Facebook first launched, there was little individual use to the tool – it lacked “single-player mode.” The value emerged as the network grew. The more friends a user had on Facebook, the more value the user could get out of it.

At first, this value was mostly limited to being able to read friends' answers to the questionnaire that Facebook gave new users, browse their Walls, and send “Pokes.”

But Facebook layered more and more value on top of this simple social register over time, and because it controlled all the data, the company gained control of a deep moat built on network effects.

The first big feature Facebook added to its platform was Photos, which instantly became a powerful growth mechanism because of its tagging functionality. Every time a user uploaded a new photo and tagged their friends, those people were notified about it.



SOURCE: STATISTA

Not only did these notifications drive users to Facebook to see photos, but they also taught new users how to use Facebook.

“Think about photo tagging on Facebook. When you get that notification, there is no way you’re not gonna check it out, because it’s a picture of you. Meanwhile, getting that notification teaches you that tagging photos is possible. Instead of Facebook explaining that you should upload photos and tag people, they just showed you.”

— Stan Chudnovsky, Head of Product for Messaging at Facebook

Successive features that Facebook added, from Groups to Messenger, created similar kinds of viral value for Facebook's users. They created new triggers to bring new people into the Facebook ecosystem, such as receiving an invite to a private group or receiving a message request.

By getting increasingly involved in users' social activities, Facebook also decreased the likelihood that its users would ever be able to leave the platform after joining up.

Today, this dedication to data has led Facebook to acquire other properties — most importantly Instagram — that use the Facebook social graph in order to build out users' network of friends and followers.

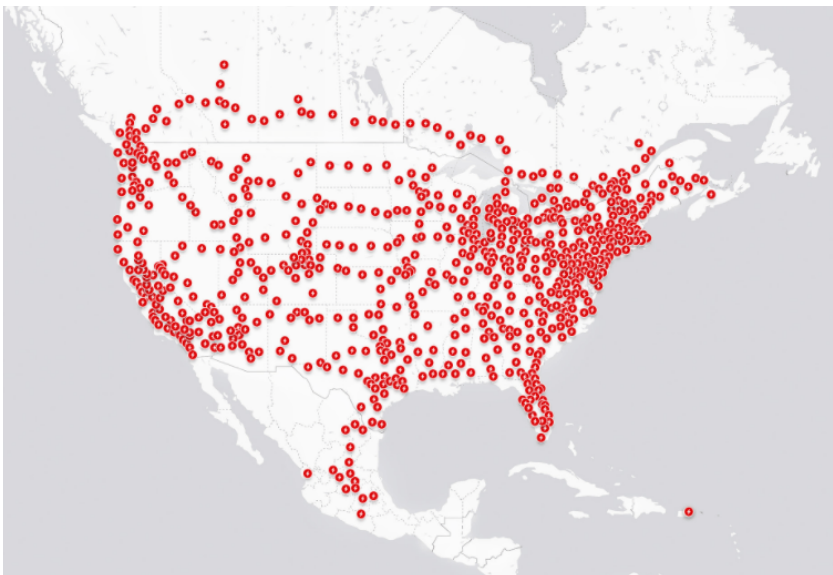
While overall use of Facebook's core product may be decreasing, it's still the biggest social network in giving the company a competitive advantage when it comes to launching new products. Instead of having to build a new product from scratch, Facebook can use its social graph to compete with virtually anyone — for example, by immediately releasing copycat features like Instagram Stories to a bigger base of users than Snapchat had overall.

9. Platform: How treating EVs as a two-sided platform helps Tesla maintain a wide moat

Tesla has built a complex ecosystem of products that reinforce each other's value, creating a moat out of platform network effects. The moat has electric vehicles at its core. But the company has also built advanced software, offers a charging network, and sells complementary products like in-home energy storage and solar roofs.

For instance, Tesla has built over 40,000 supercharger stations around the world that Morgan Stanley analyst Adam Jonas considers as a major strategic asset:

“Part of the strategic attraction to Tesla is its physical infrastructure footprint, which we believe, over time, can improve the customer experience, reduce friction points, and support the fleet management of many millions of Tesla vehicles on the road and in both captive and 3rd party commercial fleets.”



THE MAP OF TESLA SUPERCHARGERS IN NORTH AMERICA. SOURCE: TESLA

Tesla sees electric vehicles as a platform consisting of car buyers and rapid-charging stations. Selling electric cars only makes sense if drivers can charge them easily, but investing in a charging network is financially viable only with a large enough base of electric vehicles. Tesla is tackling this riddle by building both the cars and the network at the same time.

Other carmakers have taken a different approach. BMW Group, Ford Motor Company, Hyundai Motor Group, Mercedes Benz AG, and Volkswagen Group formed a joint venture called IONITY. This fast-charging network is intended to serve electric vehicles in Europe but currently operates only a few hundred stations. Volkswagen is also building an Electrify America (EA) network that runs around 600 stations in the US.

Tesla is ahead of the competition in other areas as well. Its software isn't yet capable of the full autonomy that CEO Elon Musk has been promising for years, but it does offer many benefits. Tesla pioneered over-the-air (OTA) software updates that can improve range, braking, power, and driver-assistance capabilities. Legacy carmakers are catching up, but their OTAs are typically focused on maps, Bluetooth, and other "infotainment features," says Gene Munster from venture capital firm Loup Ventures.

But Tesla's defensive moat doesn't end with fast-charging stations or software. The company also provides solar roofs, solar panels, and Powerwall home batteries. These products reinforce Tesla's sustainability-focused branding and can appeal to existing electric vehicle owners by offering a source of renewable power at home.

Musk is also keen on using [his portfolio of other businesses](#) to promote Tesla cars. For instance, [SpaceX](#) sent a Tesla Roadster into deep space as part of a demonstration for its Falcon Heavy rocket in 2018. The stunt is still generating headlines, such as when the car passed by Mars in October 2020. Musk's [Boring Company](#) is also using Tesla vehicles for showing off its underground tunnels in Las Vegas. Both of these futuristic companies are frequently covered by the media and generate buzz on social platforms. By aligning Tesla cars with Musk's broader ecosystem of products and his personal brand, the company is only multiplying its platform network effects.

Cost moats

Many of the biggest and most durable business moats in history have been built on an advantage related to cost.

While it took [GEICO](#) decades to become one of the biggest insurers in the American market, its massive advantage over other insurers on cost — achieved by cutting out middlemen and selling insurance directly to consumers — has today made the company worth around \$32B to Warren Buffett's [Berkshire Hathaway](#).

Companies with an advantage on cost can generate several types of business moats, differentiated mainly by different approaches to consumer psychology.

SWITCHING COST

Switching cost moats exist when a company sells a product its users need or trust too much to switch providers.

A company with a switching cost moat can drive its prices (and profits) upward as long as the cost to the customer does not exceed the cost of switching to a competing provider. Even in cases where the cost does exceed the cost of switching, stickiness (especially in enterprise products) can help defend the moat.

SUNK COST

Sunk cost moats operate by eliciting a significant one-time or repeating payment from a customer, the size of which is big enough to dissuade that customer from leaving for a competitor later.

In this case, a consumer's perception of "choice" is limited by the upfront investment they've already made in a product, creating customer lock-in (and an accompanying moat).

COST ADVANTAGE

Cost advantage moats exist when companies build more efficient manufacturing or distribution and use that to offer lower prices than competitors.

The power of this type of moat depends largely on how well those costs come down with scale. If a company can continually lower prices as they grow, it can create a self-perpetuating circle of massive growth.

What is a cost moat?

Many of the biggest and most durable business moats in history have been built on an advantage related to cost.

 CBINSIGHTS

Switching cost

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Cost advantage

Cost advantage moats exist when companies build more efficient manufacturing or distribution and use that to offer lower prices than competitors.

Switching cost



For more than 50 years, IBM held a **competitive advantage built on fear**. Salespeople would explain to leads that they would never be questioned for sticking with IBM, and that their other peripherals and equipment might not work with a non-IBM mainframe. This strategy drove customers away from competitors and back to IBM.

Switching cost



ADP has become indispensable to thousands of businesses around the world mainly because it handles two of the most mission-critical tasks inside an organization: **payroll and taxes**. Companies that trust ADP to handle their most sensitive documents are going to have a higher threshold for switching than they would with a less mission-critical relationship.

Switching cost



Slack is used by companies to **organize internal communications, manage projects, communicate with customers, and more**. This range makes switching from Slack to an alternative tool painful. Teams have to sacrifice workflow habits, message history, and chat channels while investing time and money in learning a new system. This increases the threshold for when any potential benefits of changing would outweigh the burden.

Sunk cost



When Gillette first started selling its safety razors with disposable blades, it was the beginning of a powerful business model, built on the principle of **sunk cost**. People who buy cheap Gillette razors tend to keep buying Gillette blades. Over time, because those customers keep generating high-margin revenue through repeat purchases and have an in-built tendency to stick around, a moat is created.

Cost moats

CBINSIGHTS

Switching cost

Switching cost moats exist when a company sells a product its users need or trust too much to switch providers.

Sunk cost

Sunk cost moats operate by eliciting a significant one-time or repeating payment from a customer big enough to dissuade that customer from leaving for a competitor later.

Cost advantage

Cost advantage moats exist when companies build more efficient manufacturing or distribution and use that to offer lower prices than competitors.

Cost advantage ((SiriusXM))

SiriusXM's massive initial investment in its satellite network created an instantly durable moat: Any competitor would need to get satellites into space before selling a single subscription or generating a dollar of revenue. On top of SiriusXM's low pricing and exclusive brand partnerships, this has made it unlikely a startup could contend with the radio provider.

Cost advantage GEICO

Early on, GEICO discovered that marketing directly to consumers, rather than through brokers, gave the company a significant amount of leverage on price. The decision to go direct-to-consumer would propel GEICO to become the third-largest auto insurer in the country.

Cost advantage aws

AWS is a business that benefits from scale. The more servers under Amazon's control, the cheaper its own computing and storage, and the cheaper the computing and storage it sells to customers. Over time, AWS has expanded to encompass more and more services. Being both low-cost and high-capability gives Amazon a highly advantageous position in the cloud computing industry.

Cost advantage Walmart ✨

Walmart has grown into one of the world's largest retailers by offering lower prices than competitors. This cost advantage moat has been achieved by using regional networks of stores to buy in bulk to achieve huge scale efficiencies. Now, the company is leveraging this network alongside investments in e-commerce, supply chain infrastructure, and warehouse automation to defend its moat.

10. Switching cost: How IBM used the psychology of fear to own back-end technology for decades

For more than 50 years, [IBM](#) held a competitive advantage built on fear.

IBM's dominance in computing, and the paranoia the company fostered, created a business environment where switching to an IBM competitor was almost unheard of.

But it took time for the company to find the stability that would allow it to sell itself as the most reliable vendor in computing. First, IBM had to invent a mainframe that would make it cost-effective for companies to stick with it over long periods of time.

The IBM 1401 was the early centerpiece of the company's mainframe business. But it had one big problem: it didn't offer users enough processing power. To get more, customers had to upgrade, either to a better IBM machine or to a competitor's mainframe.

Because IBM systems weren't interoperable, options were essentially equivalent from a cost point of view. Either one would have required users to rewrite all their software.

This was a massive problem for IBM from a business point of view because it meant the company would have to prove itself again with each new iteration of computers that it manufactured. Customers could easily decide to defect to a different mainframe provider since buying a new IBM mainframe and going elsewhere cost the same amount of money.

To change that, IBM set out on a multi-year project to build a new, interoperable base mainframe – something that customers could upgrade to without having to rewrite all their software. Later, IBM could release updates onto that mainframe, allowing their customers to add more processing power without having to buy a whole new machine.



THE IBM SYSTEM/360

The System/360 was IBM's most successful computer ever and a massive inflection point for computing as a whole. A month after release, more than 100,000 were purchased around the world. (For context, at the beginning of that year, there had only been about 20,000 total computers installed in the UK, Western Europe, the US, and Japan, according to the IEEE.)

Not only did the System/360 give companies that were considering competitors a reason to instead stick with IBM, but it also made computers more accessible for companies that hadn't yet taken the plunge since they could now buy a smaller System/360, assured that they would be able to upgrade later if necessary.

Suddenly, choosing — and staying with — IBM became the logical decision for data centers and purchasing departments around the world. And over time, IBM developed a sales strategy that drove home that logic, leveraging IBM's size and reputation to great effect.

That strategy, as explained by chief System/360 architect Gene Amdahl, was all about creating “fear, uncertainty, and doubt.”

Salespeople would explain to leads that they would never be criticized or questioned for sticking with IBM and that their other peripherals and equipment might not work with a non-IBM mainframe.

As software developer Eric S. Raymond explains:

“The implicit coercion was traditionally accomplished by promising that Good Things would happen to people who stuck with IBM, but Dark Shadows loomed over the future of competitors' equipment or software.”

This strategy drove customers away from competitors and back to IBM. But none of it would ever have been possible if IBM had continued playing the same game it was playing in the early 1960s, competing with other manufacturers to build the best possible mainframe with each new release cycle. With the System/360, IBM became more than a mainframe manufacturer – it became the dominant developer of operating systems, software, applications, and services.

It's no coincidence that IBM's greatest struggles since have come with the introduction of cloud computing, which has made operating systems, software, applications, and services into a commodity.

While IBM CEO Sam Palmisano declared in 2010 that you couldn't do what IBM was doing in the cloud, today, businesses are increasingly turning to cloud services and technologies from Google, Amazon, and Microsoft, suggesting some weaknesses in IBM's switching cost moat.

11. Switching cost: Why ADP is still America's biggest payroll services provider

[Automatic Data Processing](#) (ADP) is one of the largest human resource management companies in the world, with 1M clients around the world.

It also has a deep switching cost moat that has given it a highly privileged position in its market.

ADP has become indispensable to thousands of businesses around the world mainly because it handles two of the most mission-critical tasks inside an organization: payroll and taxes.

In addition to handling compliance and reporting, ADP offers various other value-add services (like freelancer management), which further embed customers in the ADP ecosystem.

Handling payroll and taxes means there's an inherent element of switching aversion at play — companies that trust ADP to handle their most sensitive documents are going to have a higher threshold for switching than they would with a less mission-critical relationship.

Another factor protecting ADP's moat is the fact that over the last 15 years, both payroll and taxes have become significantly more complex, increasing the likelihood that businesses will want to come to a company like ADP to minimize their risk.

ADP's customers trust ADP to keep them in compliance with complex legislation like the Affordable Care Act. The increasing complexity of compliance creates an IBM-like response to the question of payroll: "No one ever got fired for buying ADP."

However, threats to ADP's dominance are emerging.

One is that the cost advantage ADP once enjoyed has lessened, with new players like [Gusto](#) and [Intuit](#) emerging with lower-cost models designed to attract smaller companies and startups to their payroll platforms.

The other is the proliferation of increasingly sophisticated payroll software, making ADP's value proposition of helping companies navigate the complexities of payroll less and less valuable.

While the switching cost moat has helped ADP maintain its profitability and growth, it isn't impenetrable. Today, the two ends of the size spectrum see most defections from ADP: either from small businesses that won't incur much cost from switching or from huge businesses that can negotiate better rates with other providers.

12. Switching cost: How Slack retains users by being an “enterprise social network”

Salesforce-owned [Slack](#) uses high switching costs as a competitive moat. Companies rely on Slack to organize internal communications, manage projects, communicate with suppliers or customers, and more.

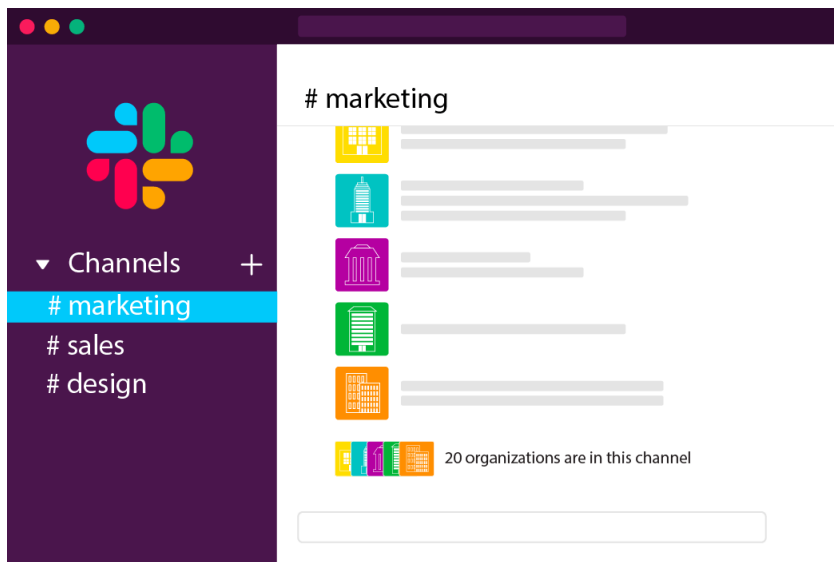
This range makes switching from Slack to an alternative platform painful. Teams have to sacrifice workflow habits, message history, and chat channels while investing resources in learning a new tool. This increases the threshold for when any potential benefits of changing would outweigh the burden. Slack is well aware of this competitive moat and is working hard to expand it.

The company is building an ecosystem of apps to increase the product's stickiness. Slack has over 2,400 apps in its App Directory and boasts nearly 1M active developers using its platform. The company also raised \$80M for its Slack Fund to back startups building on top of Slack. As well as apps, Slack also integrates with heavily used business software tools such as Google Drive, Salesforce, Zendesk, and AWS. These integrations help users create new workflows that make leaving Slack even more challenging.

It's no surprise then that Slack has strong customer retention. According to a 2019 analysis by Theta Equity Partners, only 10% of paid Slack customers churn in the first year. And over 80% of paid customers will stay with Slack for at least 5 years, paying more in their fifth year than they did in their first.

Slack is also building new features to further increase its switching costs and network effects. For instance, Slack Connect – introduced in June 2020 – allows users to collaborate with external organizations through Slack. Companies can bring their supply chain partners, industry peers, and corporate subsidiaries into a single channel to share files, negotiate deals, and make decisions. The more work companies conduct in Slack, the harder it is for them to churn. Tech analyst Ben Thompson points out that:

“Slack has decided to build the enterprise social network ... and the more companies that take advantage of Slack Connect, the more of a moat Slack has. That's the thing about social networks: their best feature is whether or not your friends are on it, or, in this case, whether or not the companies you are working with are using Slack.”



SLACK CONNECT ALLOWS ORGANIZATIONS TO COLLABORATE ON THE MESSAGING PLATFORM. SOURCE: DISPATCH

Slack will need to maintain and grow its moat as competitors such as [Microsoft](#) loom large. The tech giant's Teams platform has 280M monthly active users (MAUs) and integrates with its Microsoft 365 suite of products. Slack doesn't report the MAU metric but says that its number of paying clients reached 169,000 in April 2021, up 39% year-over-year.

Salesforce's mammoth \$27.7B acquisition of Slack in July 2021 complicates the picture further. On the one hand, cross-selling Slack to existing Salesforce users could embed Slack even deeper into the enterprise workstream, making it more costly for business users to switch off of it. But recent reports suggest Salesforce customers aren't rushing to replace their existing communication tools with Slack. It remains to be seen whether its integration into Salesforce will accelerate – or obstruct – Slack's growth.

13. Sunk cost: The business model that made Gillette a \$57B company

When [Gillette](#) first started selling its safety razors with disposable blades in 1903, the innovation of replaceable blades immediately made shaving more convenient, eliminating the need to send razor blades for sharpening.

It was also the beginning of a powerful business model, built on the principle of sunk cost.

The “razor blade business model,” as it is now known, refers to any business that operates on a combination of low- and high-margin purchases. A low-margin product is priced low enough to attract as many people as possible, while a high-margin product is priced just high enough to create healthy profits.

Repetition is the key here. After a customer makes the low-margin purchase, they must make the high-margin purchase continuously. The initial investment psychologically primes customers to keep buying because they've already spent money, limiting consumers' theory of their own choice.

In other words, people who buy cheap Gillette razors tend to keep buying Gillette blades. Over time, because those customers keep generating high-margin revenue and have an in-built tendency to stick around, a moat is created.

Protecting that moat means reinforcing the value of the product and the brand name, which Gillette has done largely through offering new products.

New razor systems serve a dual purpose for Gillette. First, they reinforce the value of the Gillette razor, encouraging people to maintain the investment they keep making in the products. Second, each iteration that increases the number of blades generates a new, more expensive blade that can drive more revenue.

Gillette has also sought to protect its moat through advertising. Since the 1930s, Gillette has been one of the biggest names in advertising, especially through sponsorships of US sports.



THE GILLETTE STADIUM IN FOXBOROUGH, MASSACHUSETTS. SOURCE: WINSLOW TOWNSON

However, Gillette didn't pursue a razor-and-blades strategy in its earliest years. Instead, it priced both its razor and blades at a high cost. It took the expiration of Gillette's razor patents and the subsequent emergence of new competition for the company to pivot into the strategy that would make it successful.

A hundred years after the first Gillette razors appeared on the market, Gillette was still the clear market leader in the space, selling about 5x as many razors as any other company. Procter & Gamble scooped up the shaving company in a whopping \$57B deal in 2005.

However, Gillette still faces several challenges in the years to come.

One challenge is cultural. There is less social pressure to shave, for both men and women, than at virtually any time since Gillette was founded. As a result, the shaving and hair removal tools market fell an estimated 4% in 2018 year-over-year and is expected to be stagnant for about the next half-decade, according to market research firm Mintel. The growth of laser and wax hair removal options has also impacted more temporary solutions like daily shaving.

The other major threat Gillette faces is competition with new kinds of business models that don't rely on sunk costs – most notably, [Dollar Shave Club](#) and [Harry's](#).

Because these companies sell blades directly to consumers rather than primarily through retail, they have been able to sell at a lower cost than Gillette and other big-box competitors. In 2017, Gillette decided to cut its own prices by about 12% on average, apologizing to consumers in a corporate blog post.

Procter & Gamble, Gillette's parent company, also tried to acquire razor startup [billie](#). The New York-based startup sells affordable women's razors and beauty products on a subscription basis. But the Federal Trade Commission (FTC) blocked this deal in January 2021, claiming it would eliminate competition.

Ultimately, while Gillette is still the largest force by market share in shaving, it is no longer the only powerful player.

14. Cost advantage: Why no satellite radio provider can undercut SiriusXM

Many of SiriusXM's well-publicized financial troubles stem from the incredible debt it incurred to get its service, and its satellites, off the ground. At the same time, the company's long journey to where it is today is an indication of how difficult it would be for any competitor to replicate SiriusXM's model at a reasonable price for consumers.

Before selling a single subscription or generating a dollar of revenue, a competitor would first need to get satellites into space. For Sirius, the estimated tab to launch its 3 high-orbit satellites and create its first programming was \$500M in 1994. That'd be about \$1B today, when adjusted for inflation.

Besides raising capital, the new company would need to secure a portion of the satellite frequency bandwidth allocated by the FCC. There's only enough space for a few platforms to deliver content via satellite. CD Radio, the company that preceded Sirius, paid \$83M for its license.

In the face of those high startup costs, a competitor would then need to attract a large subscriber base quickly if it hoped to become profitable. In part, that's because the price providers can charge is constrained by the free availability of terrestrial radio. Sirius' first consumer price was just under \$13 per month.

To scale revenue, the contender would need to dislodge the agreements SiriusXM has with just about every automobile manufacturer. Then, it'd have to cut further into its revenue to subsidize those agreements — Sirius splits about \$1B per year between its automaker partners.

One of the selling points of satellite radio is its exclusive content. It doesn't come cheap. Howard Stern's contract alone costs SiriusXM as much as \$100M a year.

All of those costs are surmountable if enough people pay to listen. SiriusXM is able to do it now. The company recorded \$9B in revenue – and \$1.2B in net profit – in 2022, with the majority of that coming from subscription sales. But Sirius couldn't make the math work when there was just one other competitor – XM – in the market. The company lost \$3.4B between 2001 and 2006. There was even bankruptcy talk in 2009 as the stock price plummeted to \$0.05 per share.

It was only after a merger with XM that Sirius' fortunes turned around. The new combined entity became reliably profitable in 2010. And for the next decade, it added at least 1M self-pay subscribers each year.

A new satellite radio provider would need enough revenue to overcome the extremely high startup costs and weather years of unprofitability while it stole enough market share to put SiriusXM's business at risk. This fact makes it unlikely any startup could compete with SiriusXM's low starting prices.

SiriusXM isn't likely to lose its monopoly in the satellite radio industry any time soon. However, new technologies are challenging its dominance of in-car entertainment. Apple CarPlay, Apple's app that lets drivers play content from a mobile device through their car's entertainment system, is now loaded on 98% of new automobiles in the US. Android Auto, Google's version of the same app, is available on over 150M cars.

For now, SiriusXM's ledger remains in the green. But with 20% fewer people commuting to work, and more ways to play content on the go, SiriusXM may find itself the sole purveyor of an obsolete technology.

15. Cost advantage: Why GEICO going D2C made it Warren Buffett's favorite stock

The [Government Employees Insurance Company](#) was founded in 1936 to sell insurance to government employees, which were considered a less risky pool of customers than the general public.

From this simple beginning came a critical business model decision. Because GEICO's target market was so small, founders Leo and Lillian Goodwin decided they should market directly to consumers via mail rather than through brokers, as was traditional.

The basic advantage that GEICO discovered was that marketing directly to consumers gave the company a significant amount of leverage on price. And in the long run, the decision to go direct-to-consumer would propel GEICO to become the third-largest auto insurer in the country today.

"The ultimate key to [GEICO]'s success is its rock-bottom operating costs, which virtually no competitor can match."

— *Warren Buffett*

Those rock bottom operating costs were passed along to consumers, driving GEICO's growth in the 60s. The company hit 1M policyholders in 1964, \$150M in insurance premiums in 1965, and \$13M in net earnings in 1966.

GEICO suffered some blowback from its aggressive growth in the ensuing decades, but the company's policyholder count recovered to hit 8M by 2007.

GEICO's main value proposition was always the fact that it could offer a lower cost on a commoditized product. With auto insurance, most buyers' primary consideration is saving money.



One of the first changes that Buffett enforced after Berkshire Hathaway finished its acquisition of the company in 1995 was increased spend on advertising. The idea was that to protect its cost advantage moat, the company should invest in its brand, building an emotional connection with customers to ensure that it remains the top-of-mind choice for low-cost car insurance.

The head start GEICO gained through its marketing and pricing strategy has allowed it to spend more freely than any of its competitors. In 2011, GEICO spent 6.5% of its premiums on ads. (Of the other 5 biggest car insurers, none spent more than 5%.) By 2019, the company was spending nearly \$2B on ads, up from \$1.7B in 2018. Progressive, the other major direct-to-consumer insurer that spends heavily on advertising for brand awareness, continues to be the company's biggest competitor – although GEICO still outspends it on ads by roughly 75%.

16. Cost advantage: How Amazon Web Services built an impenetrable economy of scale

[Amazon Web Services](#) (AWS) had a [big head start](#) in developing a cloud platform over its competitors.

AWS publicly launched in 2006 – 2 years before Google launched its competing Cloud and 4 years before Microsoft launched Azure. That head start paid off.

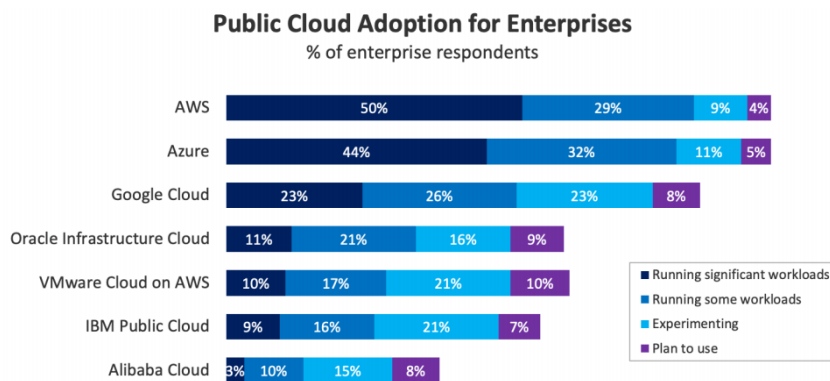
Today, roughly a third of activity on the internet takes place on AWS-hosted sites, and the service could be on track to generate up to \$100B in revenue in 2023.

The original idea of AWS was to take all of the back-end infrastructure and server work needed to create a website or internet service – things like image and video storage – and make them easy and affordable for anyone looking to build on the internet.

AWS is a business that benefits from scale. The more servers under Amazon's control, the cheaper its own computing and storage, and the cheaper the computing and storage it sells to customers.

Over time, the business has expanded to encompass more and more services. Its dominance of cloud computing isn't about being first or being cheapest anymore – it's about having access to more than 200 different AWS products, from analytics and augmented/virtual reality to security, machine learning, and robotics. AWS customers can access all of these, and integrating them is also significantly easier since they already run the rest of their stack on Amazon.

While Google and Microsoft can compete with Amazon on price today, they can't provide that same volume of easily integrated, reliable, comprehensive services.



N=637

Source: Flexera 2021 State of the Cloud Report

ADOPTION OF MAJOR PUBLIC CLOUD PROVIDERS AMONG ENTERPRISE USERS. SOURCE: FLEXERA

Google and Azure have many of the same services to offer, but if a company has its data on AWS already, it is more likely to use Amazon's tools.

There's a switching cost moat at play here for Amazon as well. Switching from a cloud provider like AWS to one like Google Cloud can be a very difficult transition depending on how many provider-specific services you're dependent on – AWS banks on that.

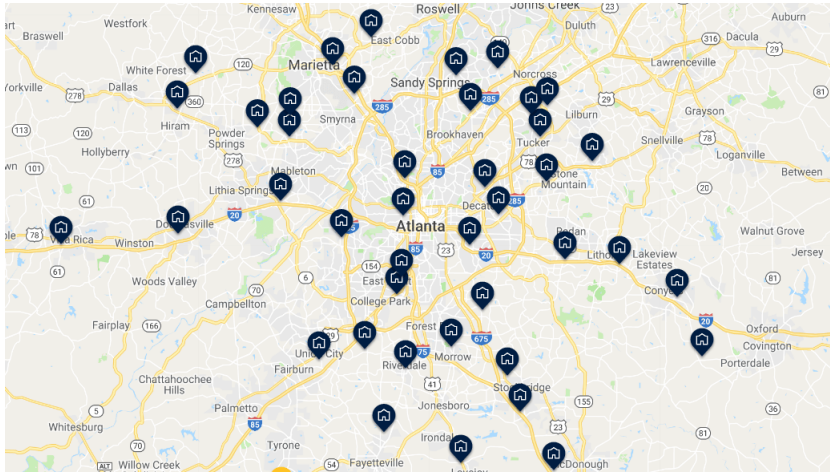
Ultimately, being both low cost and high capability gives Amazon a highly advantageous position. Most importantly, this is an industry that's still at the beginning of its growth curve.

In 2022, Amazon grew its cloud advantage with a market share of 34% compared to 21% for Microsoft's Azure and 11% for Google Cloud.

17. Cost advantage: How Walmart has kept prices low by taking power away from individual stores

Walmart grew into one of the world's largest retailers by offering lower prices than competitors. This cost advantage moat has been achieved by leaning on regional networks of stores.

The company realized in its early days that individual stores have little negotiating power with suppliers. But a centrally coordinated network of, for instance, 150 stores that can buy in bulk and serve millions of customers can achieve huge scale efficiencies. As a result, the retailer was able to keep prices and costs low.



WALMART KEEPS PRICES AND COSTS LOW BY MANAGING STORES AS A NETWORK.
SOURCE: CXL

Walmart took power away from individual stores. In doing so, the retail giant started exploiting the economics of the network to gain an edge over its competitors. Kmart, for instance, allowed each store to pick vendors, choose products, and set prices. But this practice, as pointed out by Richard P. Rumelt in his book *Good Strategy/Bad Strategy*, had a number of negative consequences:

“But the oft-forgotten cost of decentralization is lost coordination across units. Stores that do not choose the same vendors or negotiate the same terms cannot benefit from an integrated network of data and transport. Stores that do not share detailed information about what works and what does not cannot benefit from one another’s learning.”

Walmart integrates each store into a wider logistics, computing, and supply chain network. This is a common practice today, but some 30 years ago, it was an innovative move.

Today, Walmart is faced with a different kind of challenge. The rise of e-commerce and the competition posed by online retailers such as Amazon has forced the company to develop an online business.

Walmart now offers Walmart+, a membership tier similar to Amazon Prime that provides free same-day delivery and various other perks. The company leans on its [vast network of stores](#) in the US to ship orders. Walmart also operates a huge transportation fleet of 12,000 drivers, 10,000 tractors, and 80,000 trailers.

Walmart's investments in [e-commerce, supply chain infrastructure, and warehouse automation](#) could help it defend its moat. Shoppers are provided with a relevant mix of products in stores and online while enjoying fast delivery and personalized deals. Third-party sellers are also able to sell on Walmart Marketplace. As a result, Walmart is reporting growing demand across various sales channels and can maintain its strong bargaining power with suppliers.

Cultural moats

Not all companies build moats from structural factors like cost or network effects. While these are powerful ways to keep customers around and fend off competitors, huge companies have been built off intangible factors like brand and tradition as well.

BRAND-BASED

Brand-based business moats protect a company from competition through some kind of unique value proposition, culture, and messaging.

With a strong, recognizable, and valued brand, companies can get their customers to pay a premium for their products and come back for repeat purchases — a powerful moat generator, especially for companies selling a commodity.

When a company has a sufficiently powerful brand, it has pricing power because its customers buy based on something beyond price — they buy based on the signaling function of the purchase and/or because of cultural forces beyond that individual's control.

TRADITION-BASED

Tradition-based business moats protect a company through the values and beliefs of the culture around that company.

Some products become deeply embedded in a culture but don't have a primary supplier, meaning they're impossible to build a moat around.

Some products, however, continue under patent or tradition to only be produced by a single company, like the situation with Marmite in the United Kingdom. With these kinds of products, companies can sustain a moat solely driven by the culture around them and its need to use or consume their product.

What is a cultural moat?

Huge companies have been built off intangible factors like brand and tradition.

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Brand

Brand-based business moats protect a company from competition through some kind of unique value proposition, culture, and messaging. Companies can get customers to pay a premium for their products and come back for repeat purchases based on their brand's strength.

Tradition

Tradition-based business moats protect a company through the values and beliefs of the culture around that company. Companies can sustain a moat solely driven by the culture around them and its need to use or consume their product.

Brand

Patagonia's brand works as a moat because it is so specifically tailored for its core audience of buyers. If you care deeply about the outdoors, you're likely to spend more time outdoors, which in turn means you're likely to buy the high-quality outdoor products Patagonia sells. Brands like Patagonia grow more powerful moats over time, because consumers judge the virtue and ethics of a brand partly by how long it has been consistent.

Brand

While Coca-Cola's use of sponsorship and advertising is important to its success, its consistency in product is just as important. Coca-Cola turned its soda into one of the biggest brands in the world largely by manufacturing and shipping the same product to customers all around the world, years before logistics and infrastructure would make this an easy task.

Brand



Starbucks built itself a powerful moat by upgrading coffee from something Americans consumed to something they could enjoy consuming, and be seen by others consuming. The company became synonymous with premier, sustainable coffee, and produced a durable competitive advantage in the process.

Tradition



While Marmite has its detractors, ever since the product's widespread use during war time, it has been culturally embedded in the UK. The spread still bears traces of its origins, which reinforce its status as a traditional product and something inherent to the culture of its surroundings.

Tradition



The motorcycle-maker has withstood economic downturns and negative press by cultivating loyal communities of buyers. These fans have devoted themselves to Harley-Davidson's rugged and tough image — a cultural cachet that will be difficult to unseat.



18. Brand: How Patagonia grew by understanding its customer identity

The outdoor clothing retailer [Patagonia](#) is well known for its commitment to environmental and sustainable causes.

Environmentalism is core to Patagonia's mission – 1% of all of Patagonia's gross sales are donated to different environmental groups, and the company encourages other businesses to do the same.

In April 2019, the company went so far as to halt its custom manufacturing and sales of vests to companies in [finance](#) – an industry that had taken up Patagonia as a kind of uniform, despite the company's apparent wishes.

The love of the outdoors is core to Patagonia's marketing. Patagonia's strong public commitment to this mission has allowed it to acquire a customer base that shops with Patagonia in part because they share the brand's values.

Patagonia's brand works as a moat because it is so specifically tailored for its core audience of buyers. If you care deeply about the outdoors, you're likely to spend more time outdoors, which in turn means you're likely to buy the high-quality outdoor products Patagonia sells.

Brands like Patagonia grow more powerful moats over time because consumers judge the virtue and ethics of a brand partly by how long it has been consistent. Patagonia has supported environmental groups for more than 40 years and has been at the cutting edge of sustainable causes.

"We went organic in 1996. ... We learned how to make fleece jackets from recycled plastic bottles and then how to make fleece jackets from fleece jackets. We examined our use of paper in catalogs, the sources of our electricity, the amount of oil we consumed driving to work... [I]t's part of the cost of doing business, part of our effort to balance (however imperfectly) the impact we have on natural systems."

– *Patagonia*

This doubling down on the commitment to sustainability is part of what turned the company around from its darkest hour in the early 1990s.

At the time, Patagonia had to lay off a fifth of its workforce, and founder Yvon Chouinard considered selling the business.

Instead of selling, Chouinard spent the next several years looking for ways to bring the company closer in line with its sustainable ethos.

For Black Friday 2011, Patagonia completed a "Don't Buy This Jacket" campaign: as a result, that Black Friday, Patagonia's sales rose 42%.

PATAGONIA: “The Greenest Product Is The One That Already Exists”

DON'T BUY THIS JACKET



COMMON THREADS INITIATIVE

REDUCE

WE make useful gear that lasts a long time
YOU don't buy what you don't need

REPAIR

WE help you repair your Patagonia gear
YOU pledge to fix what's broken

REUSE

WE help find a home for Patagonia gear
you no longer need
YOU sell or pass it on*

RECYCLE

WE will take back your Patagonia gear
that is worn out
YOU pledge to keep your stuff out of
the landfill and incinerator



REIMAGINE

TOGETHER we reimagine a world where we take
only what nature can replace

By 2014, Patagonia was up to \$500M a year in revenue. As of 2018, that figure was above \$1B.

While some have criticized Patagonia for being too forthright about its political stances, the growth of Patagonia's outspoken brand and its embrace of more sustainable development processes have both coincided with the company's massive success – and the creation of a significant moat around the company's cultural mission.

As Patagonia grows, it could be challenging for the company to maintain the same clarity and purity of mission – especially as both bigger brands and new, smaller D2C brands tout sustainable practices.

19. Brand: Why consistency has been key to Coca-Cola's success

If one ingredient of a powerful brand is time, another equally important ingredient is consistency.

Consistency creates a unified experience that is powerful for building a brand – one great example is [Coca-Cola](#).

In 2020, Forbes calculated Coca-Cola's brand value at about \$64.4B, the only non-tech company in its top 6 brands overall.

While Coca-Cola's use of sponsorship and advertising is important to its success, its consistency in its product is just as important.

Coca-Cola turned its soda into one of the biggest brands in the world largely by manufacturing and shipping the same product to customers all around the world, years before logistics and infrastructure would make this an easy task.

The Coca-Cola brand differentiation began with its bottle, which was designed with a highly unusual contour for the time in order to shape the perception that it was a premium product.



SOURCE: FOODIMENTARY

The Coca-Cola brand extended to the way that the drink was stored, how it traveled, and how it looked on store shelves. Coca-Cola insisted that bottles of Coke needed to be served at no more than 40 degrees and sent its own salespeople out to new stores carrying Coca-Cola to ensure compliance.

The bottling and distribution strategy that Coca-Cola pursued in these early years was defined by the desire to give every consumer the same, optimal experience every time they tried it.

Advertising let Coca-Cola promote the idea of that consistent experience around the world – but it was ultimately its commitment to standards, distribution, and logistics that allowed it to deliver on it.

Since the 1960s, Coca-Cola's ability to deliver a consistent and beloved brand experience has also led it to experiment with new, potentially moat-reinforcing products.

Some of these have been [duds](#), including a Mountain Dew competitor launched in 1969 called Simba and the company's 1985 reformulation of the original Coke recipe, codenamed "New Coke."

After the introduction of "New Coke" in 1985, Pepsi actually briefly overtook Coke as the most popular beverage on the American market – though Coke quickly retook the top spot after it reintroduced "Coca-Cola Classic."

Other side products developed by Coca-Cola have been highly successful and have helped vastly diversify the Coca-Cola brand's offerings into juice, water, and other types of carbonated sodas, including Sprite, Fanta, Tab, Powerade, Nestea, and Dasani.

Coca-Cola's moat has been challenged by competitors over the years, most notably by [PepsiCo](#), though these two companies have tended to target slightly different niches.

Today, less than 50% of PepsiCo's revenues come from beverages, with most of the company's business coming from the company's food and snack brands.

20. Brand: How Starbucks changed Americans' relationship with their coffee

Before [Starbucks](#), the American coffee industry was dominated by 19th-century brands like Folgers and Maxwell House: cheap beans, stale coffee, and packaging meant to extend shelf life indefinitely.

Starbucks didn't just introduce higher-quality European roasting and brewing practices to the American public — it became synonymous with premier, sustainable coffee and produced a durable competitive advantage in the process.

From the company's earliest days, Starbucks worked to make its brand synonymous with luxury and sophistication.

It outfitted its cafes with vintage furniture and European décor and gave its drinks and cup sizes exotic-sounding names.



As Douglas Holt and Douglas Cameron write in *Cultural Strategy*, “Starbucks worked because it got the cultural expression right – sophistication conveyed by the right ideology, myth, and cultural codes to resonate with the new cultural-capital cohort in 1990’s America. When a prospect walked in the door and placed an order, she was engulfed in a very accessible artisanal-cosmopolitan experience that made her feel more sophisticated than if she had bought a coffee from a competitor.”

Starbucks built itself a powerful moat by upgrading coffee from something Americans consumed to something they could enjoy consuming and be seen by others consuming.

It did this both by focusing on quality more than previous American coffee companies – many of which had previously mixed their ground coffees with cheaper beans to save on costs – and by framing the experience of visiting a Starbucks café in a more sophisticated manner.

Today, Starbucks ranks as the most valuable restaurant brand in the world. As premium coffee has become more popular and commoditized in the United States and across Europe, however, Starbucks has looked to the Starbucks Rewards membership program as a new moat.

Originally, becoming a Starbucks Rewards member was the only way to use Starbucks' popular mobile ordering, pick-up, and payment app – today, while mobile ordering is available to non-members, it still offers Rewards users free brewed coffee and tea refills, exclusive offers, and rewards.

In 2021, in a sign that the company's strategy was succeeding, Starbucks announced that Starbucks Rewards purchases represented 50% of the company's total sales in the US.

21. Tradition: How Marmite became condiment king in the UK

Marmite, a British-made food spread made from yeast, was first invented in 1902. The slogan for the [Unilever](#) product – “Love it or hate it” – says it all about the brand's key competitive advantage over other food spreads in the market. While it has its detractors, Marmite is culturally embedded in the country.

Tradition-based moats are rare and difficult to build, but much of Marmite's origins relate to war.

Marmite is a good source of vitamin B, thiamin, riboflavin, and folic acid, so it became a standard military ration designed to combat a common deficiency in British soldiers during both WW1 and WW2. It was also used as a healthy snack for babies. The widespread use of Marmite cemented its place in the British home.

The product had several inherent factors that helped it achieve ubiquity in its earliest days and become a mainstay of the culture.

In addition to its health properties, Marmite doesn't need to be refrigerated and has a long shelf life.

Today, the product is still an iconic British good. The product itself still bears traces of its origins, which reinforce its status as a traditional product and something inherent to the culture of its surroundings. For example, it is still sold in its iconic jar, which features a French "marmite," or casserole dish. But Marmite's also been integrated and updated, like Jamie Oliver's recipe for Marmite popcorn and a release of Marmite-flavored chocolate.

22. Tradition: How Harley-Davidson built a culture that withstood wars, recessions, and negative press

In the early 1980s, [Harley-Davidson](#) found itself in crisis. The iconic motorcycle manufacturer was mired in reports of poor product quality, late shipments, and declining revenue. The brand could have gone the way of countless other big bike makers that didn't survive tough times — only 2 made it past the Great Depression. But the Milwaukee, Wisconsin-based company had cultivated an image of rugged individualism and a devoted base of enthusiasts that wouldn't let their way of life ride off into the sunset.

Toughness was baked into the Harley-Davidson ethos from the very start. In the early 1900s, motorways in the midwestern US weren't as developed as their eastern counterparts. The motorized cycles William S. Harley and Arthur Davidson pieced together in the Harleys' backyard shed had to survive the ruts and rocks of those turn-of-the-century dirt and gravel roads. From the frame to the engine, those early bikes could take a pounding.

The Harley-Davidson reputation for durability grew quickly. Arthur's brother Walter won a well-publicized motorcycle endurance contest on the back of one of their bikes. In the 1910s, the growing company sponsored a racing team called "The Wrecking Crew," who were famous for their fearless, and sometimes dangerous, riding.

Better roads and Ford's affordable Model T took a bite out of the necessity of motorcycles. Harley-Davidson's response was twofold. First, it convinced the postal service and law enforcement agencies to switch from bicycles to Harley-Davidson motorcycles. Not only did this give sales a direct boost, but motorcycle cops who donned riding boots, britches, and riding bags were a rolling advertisement for the unique Harley-Davidson look. The response inspired the company to launch a line of branded accessories which grew to be a business worth hundreds of millions of dollars on its own.

The second action Harley-Davidson took was to intentionally shift its bike's purpose from utility to leisure. It formed and encouraged riding clubs – a move that helped the brand endure the Great Depression of the 1930s. Plummeting gas costs and an abundance of free time made motorcycle clubs the perfect entertainment while creating loyalty that outlasted economic downtimes.

"We're in the fashion business. No one needs a motorcycle. It's your toy or hobby."

– *Willie G. Davidson, grandson of Harley-Davidson co-founder William A. Davidson*

Two world wars did nothing but boost Harley-Davidson's cachet. As soldiers returned from international conflicts, they brought back with them tales of the motorcycles supplied by the company for the war effort.

Riding clubs were popular with returning soldiers. In-person gatherings became as much a part of the Harley-Davidson experience as the chest-rumbling roar of its bikes. And a couple of decades later, they would once again be an important tool in helping the company come back from the brink of another disaster.

The troubles started in 1969 when Harley-Davidson sold its business to American Machine and Foundry. The new owners streamlined production to save money, causing worker discontent and negatively affecting product quality. At the same time, "Hardly Ableson," the mocking name riders gave the brand during the 1970s, was being besieged by a crop of less expensive and well-made Japanese motorcycles. In 1981, a group of Harley-Davidson executives, including Willie G. Davidson, bought the company back from AMF.

Understanding the importance of community to the brand's future, several of the investors took part in a 900-mile group ride to celebrate and publicize the buyout. In 1983, the company further codified riding clubs by creating the Harley Owners Group, or H.O.G. Local H.O.G. chapters sprang up around the world, hosting rallies that have at times seen more than 100,000 attendees. In 2006, Harley-Davidson even changed its NYSE ticker symbol to HOG. Today there are more than 1M members belonging to 1,400 H.O.G. chapters in over 60 countries.

On the backs of those heavy steel frames, Harley-Davidson's motorcycle sales continued to climb, peaking at 260,000 bikes in 2006. But the same dedication to its target demographic that helped the brand out of previous jams is causing a new challenge. The median age of Harley owners has risen sharply in the last few decades. Millennials aren't as enamored with big, pricey, loud motorcycles as older generations have been. The company has sold fewer than 200,000 bikes in each of the last 3 years.

The challenge in front of the brand now is to capture the hearts of a new generation while maximizing sales through its traditional base. To accomplish the first goal, Harley-Davidson has launched a certified, pre-owned program to give new riders a low-cost entry to the brand. It's also investing in electric motorcycles that appeal to a more environmentally conscious millennial customer. For long-time motorcyclists, Harley-Davidson continues to release new versions of the bikes that made it famous.

Only time will tell if Harley-Davidson executives successfully shift to meet the needs of a new rider. But given the company's nearly 120-year history of building unopposable brand loyalty, it's a good bet they will.

Resource moats

Some companies don't build moats through their products or brands. Instead, they leverage internal expertise, patents, and/or legal protections.

Resources unique to a company in one way or another — whether in the form of intellectual property gained through R&D, internal knowledge, or a monopoly — have built some of the world's most and least durable moats.

INTELLECTUAL PROPERTY

IP moats work because a company develops some kind of valuable intellectual property that its competition, structurally, cannot replicate and use.

While patents won't always protect a company from a much bigger competitor, especially if it takes longer for them to commercialize their drug or technology, a patent in fields like pharmaceuticals can produce a powerfully durable competitive advantage.

KNOWLEDGE

Knowledge moats work by concentrating valuable expertise within a single organization.

Many forms of knowledge, however, can easily be transferred, lost through brain drain, or imitated — companies that want to build a moat based on their knowledge need a way to fend off competitors until they can reach a point of critical mass.

REGULATORY

Regulatory moats work by giving a company protection from competitors through legal channels, including regulations preventing new competitors or through a contract with a bigger, more durable company.

These kinds of moats can be durable as long as the political leadership of the country, or leadership of the company, chooses to maintain that arrangement.

What is a resource moat?

Some companies don't build moats through their products or brands. Instead, they leverage internal expertise, patents, and/or legal protections.

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Intellectual property

Intellectual property resource moats work because a company develops some kind of valuable IP that its competition, structurally, cannot replicate and use.

Knowledge

Knowledge resource moats work by concentrating valuable expertise within a single organization.

Regulatory

Regulatory resource moats work by giving a company protection from competitors through legal channels.

Intellectual property



When Pfizer spent \$90B to purchase competing drug manufacturer Warner-Lambert, building a patent-protected moat was the main objective of the acquisition. Because Pfizer owned the company that had a patent on Lipitor, it was virtually invincible: no other company would be able to sell the drug or a generic version.

Intellectual property



Few companies in any industry boast intellectual property moats as deep and as protective as The Walt Disney Company. Over the last several decades, Disney has spent billions acquiring other companies with valuable IP (Lucasfilm, Pixar, ESPN, Fox) as well as on lobbying efforts to protect its vast library of intellectual property from having its copyright expire.

Intellectual property



Qualcomm has a huge patent portfolio with over 130,000 issued patents and patent applications around the world. This defensive moat is the result of decades of investments in research and development that amount to nearly \$70B.

Knowledge



Intel's engineering prowess has helped it repeatedly outpace not only its competition, but itself – frequently surpassing even the needs of its own software and devices. Intel continues to dominate the computer processor market through this focus on internal innovation, leaving little time for its competitors to catch up.

Knowledge



The primary advantage that Canon cultivated over other business machine companies was internal engineering expertise. The copiers that resulted from Canon's investment in R&D were quick and smaller than any copier before, and quickly became popular in both Europe and North America, dominating the consumer market and low end of the business market.

Regulatory



AT&T used regulatory oversight and other legislation passed in its favor to consolidate its control of both long-distance traffic and the nation's local telephone systems. For much of the 20th century, AT&T held a monopoly of the US telephone network.

Regulatory



Coinbase has been cultivating relationships with regulatory and compliance authorities since it was founded. These efforts have paid off as the company has built a regulatory moat that competitors will find hard to overcome. Now public, it has the scale and access to capital needed to keep adhering to increasing crypto regulations around the world.

23. IP: How Pfizer turned Lipitor into the best-selling drug in the world

One of the few ways to build a business moat is through patent law.

When Pfizer spent \$90B to purchase competing drug manufacturer Warner-Lambert, building a patent-protected moat was the main objective of the acquisition.

The crown jewel of Warner-Lambert's development efforts, Lipitor, had just recently been discovered to reduce the amount of bad cholesterol in patients better than any existing statin drug.



While Pfizer first partnered with Warner-Lambert to help market and do late-stage testing on the drug, the company eventually made the decision to acquire Warner-Lambert (which had already received significant buyout interest from other drug companies).

Because Pfizer owned the company that had a patent on the drug, it was virtually invincible: Lipitor's breakaway success made it unlikely that investors would attempt to fund a better product (a risky proposition) while no other company would be able to sell Lipitor or a generic version.

Pfizer was also helped by a few factors outside of its direct control. For one, there was the FDA's decision in 1997 allowing drug companies to run ads for consumers. Ads promoting Lipitor helped make the drug a household name and drive sales even higher.

There was also a push to lower federal standards for healthy amounts of cholesterol in the body, a movement spearheaded by health groups that qualified more Americans for cholesterol medications.

Over the course of its 14.5-year patent, Lipitor would generate \$125B in sales, producing 20-25% of Pfizer's total revenues for several years and making Lipitor the best-selling prescription drug of all time.

The difficulty with patents, of course, is that they expire. Drug companies like Pfizer must defend their claim to exclusive development rights against other companies that want to manufacture a cheaper, generic version of the drug – in 2009, Pfizer successfully extended the issuance of its patent on Lipitor to the end of 2011.

When Pfizer's patent protection on Lipitor ended, it opened the floodgates for cheaper generics to flood the market. Pfizer, however, has fared better with Lipitor than most drug companies that lose their patent-protected cash cow.

It takes just 6 months for a drug to lose 80% of its sales after a generic replacement becomes available, according to IMS.

Even after its patent on Lipitor expired in the US, Pfizer's effective advertising, continued research into the success of the drug, and deals cut with insurers and PBMs have allowed it to be a profitable business for the company – though never quite as powerful as when it had exclusive rights to its sale. Still, Pfizer's patent on Lipitor is still active in some countries, where exclusive sales continue for the company.

Today, thanks to these countermeasures, and particularly the drug's success in China, Lipitor still generates about \$1.5B a year in sales for the company.

24. IP: The universe of characters that made Disney a \$300B company

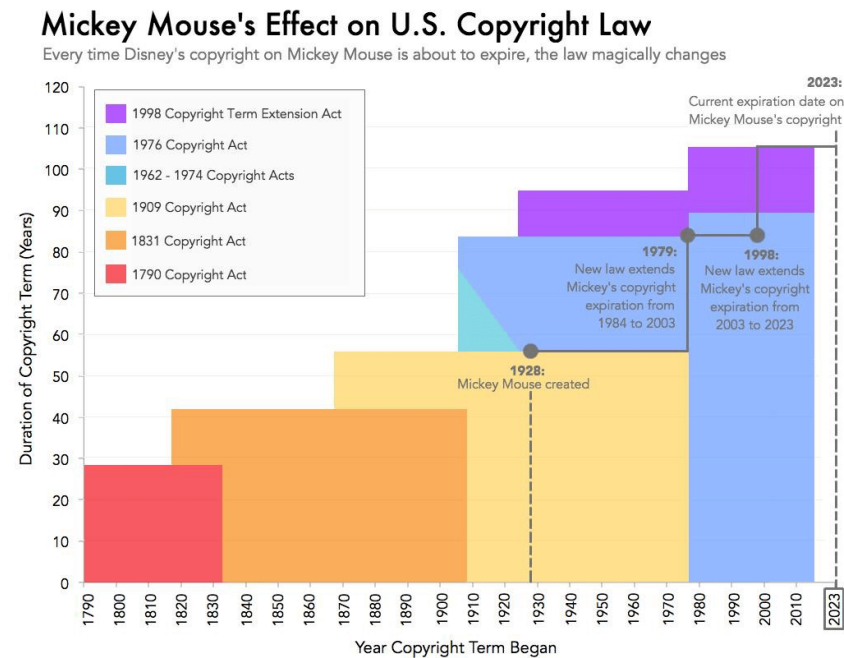
Intellectual property isn't the most common differentiator for media companies, which usually rely on competitive advantages like their brand or their cultural prestige.

But few companies in any industry boast intellectual property moats as deep and as protective as [The Walt Disney Company](#).

Disney today is the most dominant company in Hollywood, with a leading 17% share of total gross sales among studios. In 2019, each of the top 5 grossing films was built on Disney intellectual property: Avengers: Endgame, The Lion King, Toy Story 4, Captain Marvel, and Frozen 2.

This dominance didn't emerge overnight. Over the last several decades, Disney has spent billions acquiring other companies with valuable IP (Lucasfilm, Pixar, ESPN, Fox) as well as on lobbying efforts to protect its vast library of intellectual property from having its copyright expire.

As such, the law has been changed to allow for new media products to be automatically copyrighted upon their creation, a decision that has created built-in protection for new Disney properties.



SOURCE: PRICEONOMICS

Under the standards of the copyright laws that existed when Mickey Mouse was first invented, the cartoon mouse should have entered the public domain and become available for any creative work to use freely in 1984.

Disney's lobbying got Mickey Mouse's copyright deadline extended another 19 years, protecting him until 2003. A few years before that deadline was set to hit, Disney lobbied successfully for another extension, protecting Mickey Mouse as Disney's intellectual property until 2024.

As a result, no studios or companies can make any kind of content containing any iteration of Mickey Mouse – or any of the other valuable characters that Disney owns – creating a moat, protected by law, around Disney's media universe.

Today, the amount of original content that Disney creates, compared to the number of spin-offs, remakes, and sequels based on existing IP, is marginal.

As film critic Mark Harris puts it:

"Studio heads always used to say of their tentpoles and franchises that their profits financed smaller-scale gambles, risks, originals. Disney is the first studio to drop that pretense. It is the sum of its brands, and its brands finance its brands."

25. IP: How Qualcomm uses 130,000 patents to generate billions in revenue

[Qualcomm](#) has a huge patent portfolio with over 130,000 issued patents and patent applications around the world, including 2,600+ added in 2022 alone. This defensive moat is the result of decades of investments in research and development that amount to nearly \$70B.

Qualcomm patents are related to various technologies, including cellular network standards like 5G, Wi-Fi, Bluetooth, and mobile operating systems. The company is also a major producer of baseband processors. These chips enable phones to connect to data networks, and Qualcomm holds a 56% revenue share in this market.

Qualcomm licenses many of its technologies to other companies. The licensing business, organized under the Qualcomm Technology Licensing (QTL) division, reported \$1.5B in revenue in Q4'22. QTL is also a highly profitable business with limited costs related to filing patents, paying legal personnel, and working out licensing deals.

But not everyone is happy with the way Qualcomm runs its licensing deals. The FTC, for instance, brought a complaint in 2017 alleging that Qualcomm maintained a monopoly over the baseband processor market. The company's "no license, no chips" policy had reportedly weakened Qualcomm's competitors and forced cellphone makers to pay unreasonably high royalties.

The trial started in early 2019, with China-based device makers Huawei and Lenovo offering their testimonies. Lenovo IP VP Ira Blumberg said that "Qualcomm has in the past retaliated against customers who have attempted to challenge its legal terms by either delaying, or cutting off supply of chips." Judge Lucy Koh ruled that Qualcomm suppressed competitors. The company was ordered to change its licensing agreements and business practices, but the Ninth Circuit annulled Koh's verdict and granted Qualcomm a major legal victory a year later.

Apple also legally challenged Qualcomm's licensing terms. The phone maker filed an antitrust case in 2017 but settled with Qualcomm in 2019, paying the \$4.5B it owed to the chipmaker based on past royalty agreements. The duo also signed a 6-year licensing agreement with an option to extend it for 2 more years. This deal was especially important for Qualcomm as almost 20% of its revenue comes from Apple.

Having weathered these legal challenges, Qualcomm's IP moat seems as strong as ever.

26. Knowledge: How Intel uses rapid development to maintain dominance in its market

Over and over, [Intel](#) has leaned on its ability to choose and develop new technology faster than its competition.

Intel first found success by making a big bet on a new type of computer memory chip. While most computers relied on solid core memory, Intel broke from the pack and invested heavily in developing a dynamic random-access memory (DRAM) chip. It was cheaper, used less electricity, and was the first of its kind to store a significant amount of memory.

Large corporations like Honeywell, with big computing appetites, loved the new chip. DRAM became the go-to memory technology, and by 1974, Intel owned nearly 83% of the DRAM chip market.

Japanese competitors began applying extreme price pressure on Intel in the late 1970s. Intel's founders Gordon Moore and Andy Grove decided to drop out of the race to the pricing bottom of the memory market and join the race for speed in logic chips. It was a tactic that fell right in the wheelhouse of Intel's fast-moving culture, and within a decade, the company owned a vast majority of the quickly growing semiconductor business.

While Intel had already developed the world's first microprocessor in 1971, it was a decision in 1976 that cemented the company's place as the undisputed leader in logic chips.

In that year, Intel executives were focused on developing the 8800, an advanced 32-bit microprocessor that would blow away its current 8-bit competition. But the complexity of the 8800 design was a problem. Intel couldn't get it to integrate with existing chip technology. Delays mounted, which allowed Zilog — a competitor filled with former Intel engineers — to gain a foothold with its 8-bit Z80 chip.

In response, Intel created a small team led by Stephen Morse to design a 16-bit chip that could best the Z80 while it worked the kinks out of the 8800. Their product, the 8086, was soon adopted by NASA for use in its booster rockets' diagnostic equipment.

More importantly, IBM placed a derivative of the 8086 in its new 5150, the machine that ignited the personal computer revolution. And as new computer manufacturers cloned the 5150, they also used Intel's microprocessors — leaving Intel to power the vast majority of PCs.

Intel's constant iteration on the 8086 helped the company hold its preeminent position for decades. While the original 8086 had 29,000 transistors, by 1986, the transistor count on the similarly sized 80486 was 1.2M. Computing was in an upward spiral – more powerful chips allowed for more processing-intensive applications, which required more powerful chips – and Intel was leading the charge.

In fact, the company was so successful at accelerating microprocessing speed that it outpaced the needs of the software and devices it supported. "Intel's current chips are so good that most people don't feel any pressure to upgrade," reported the Harvard Business Review in 1996. "They already have more processing power than they need to run their favorite applications."

But once again, Intel didn't give its competitors time to catch up. The company partnered with broadband companies to help them increase bandwidth, supported software developers that designed the next generation of processing-hungry games, and invested in emerging videoconference technologies.

Over the last few years, Intel has ceded about 20% of its share of the computer processor market, mostly to its largest competitor [AMD](#). But it would be a mistake to underestimate Intel's future – it still accounts for more than 60% of the world's computer processing units (CPUs), and it's [doubling down on investments in emerging sectors](#).

More importantly, the engineers at Intel haven't forgotten the company's biggest competitive advantage. They continue to develop computer chips considered to be among the fastest and best value available.

27. Knowledge: How Canon turned its technical expertise into a compounding benefit

Today, [Canon](#) is best known for its imaging products, including digital cameras and camcorders. But Canon's technical expertise with small-scale electronics and optical imagery has also made it a powerful competitor in the business copying market.

Canon introduced the world's first personal mini-copiers in 1982. Until this release, Canon had been a camera company struggling to break into the more lucrative world of business machines. Five years later, 74% of Canon's revenues would come from its business machines division.



The primary advantage that Canon cultivated over other business machine companies was internal engineering expertise – specifically, the ability to design a miniaturized copier drum. It used that expertise to develop the copy machines but then leveraged that knowledge to gain a powerful competitive position in the rest of the business machines market in the 1980s.

The drum is the central component of the copier, responsible for magnetically attracting toner and then projecting an image onto the paper as it rotates. Before Canon's innovation, copier drums tended to be big, expensive, and difficult to repair.

The size — and lack of durability — of the traditional copier drum made a miniature version of the office copier virtually impossible to build cheaply.

However, Canon figured it out when team leader Hiroshi Tanaka took his product team out for beers and asked why a copier drum couldn't be made using the same process used to make a beer can — in other words, could it be cheap and disposable?

As Tanaka's team worked to devise a new low-cost, disposable aluminum copier drum, they pioneered several new technologies related to miniaturization, manufacturing and assembly, and the reduction of component weight.

The highly advanced team of more than 3,000 engineers had largely been built out during the company's previous attempts to break into business machines.

The copiers that resulted from Canon's investment in R&D were quick and smaller than any copier before, and they quickly became popular in both Europe and North America, dominating the consumer market and low end of the business market.

While all that work paid off in developing the mini-copier, these same technological breakthroughs also directly helped the company develop other technologies, including typewriters, microfilm readers, and the laser printers that would soon become its biggest and best cash cow.

Canon today is still a market leader in the business copier market, but there are significant headwinds for the company to deal with to stay relevant in the years ahead. Corporate spending on printing and hardware is down, with the digitization of documents up and business behaviors changing. Canon, in turn, is reframing its core business model to exclude copiers – and the company says that it plans to focus in the future mainly on cameras, commercial printing, nanoimprint technology, and medical products.

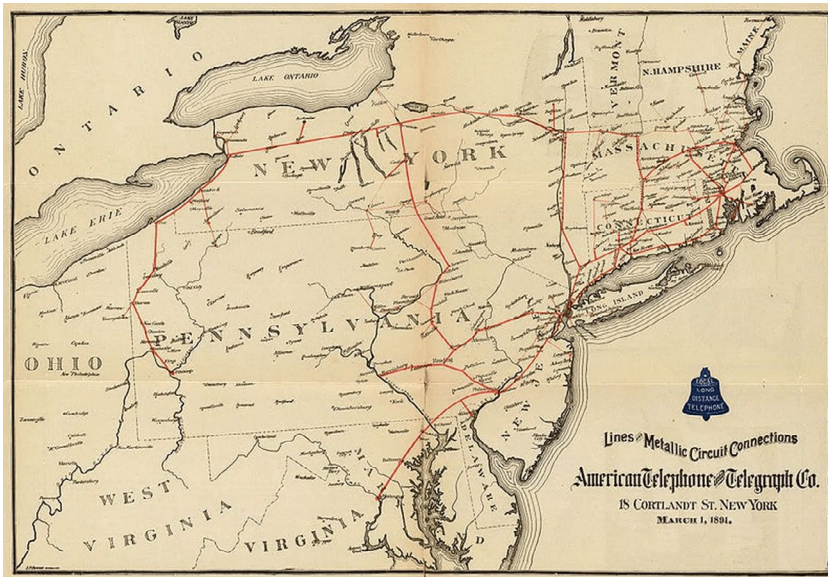
28. Regulatory: How the Kingsbury Commitment gave AT&T a 71-year monopoly

For much of the 20th century, the telephone system in the US was operated by one company: [AT&T](#).

In the early years of the AT&T monopoly, the only way to access a telephone was to pay AT&T a subscription fee. Once AT&T set up your equipment, you could start using your new rented phone, but only through the company's network.

AT&T built this monopoly mostly by acquiring many of the local, independent telephone networks that had emerged in the early years of the telephone.

Since AT&T controlled the strongest nationwide network, the company had powerful leverage. Many small networks were reliant on one another to link out to larger exchanges – by acquiring these “hub” exchanges, AT&T could systematically cut small independents out of the network.



A MAP OF AT&T'S NETWORK FROM 1891.

In 1913, under government scrutiny of this vertical integration strategy, AT&T cut a deal to prevent being broken up.

The result was the Kingsbury Commitment, an out-of-court settlement that required AT&T to allow small, independent phone networks to connect with its nationwide long-distance network.

Despite this settlement, however, AT&T still managed to consolidate control of the country's telephone industry and run it nearly unimpeded until the 1980s.

While the Kingsbury Commitment forced AT&T to let local providers link to its long-distance network, it did not force AT&T to connect its local service with other independent providers, nor did it force AT&T to integrate with other independent long-distance networks.

Crucially, it also did not require AT&T to connect with local providers, granted AT&T and the independent exchange were less than 50 miles from one another.

When those small connecting stations tried to connect to the AT&T network — as the Kingsbury Commitment had insisted they could — they found that each step of the process brought additional, untenable costs and hassle.

The result of this difficulty was that over the years following the Kingsbury Commitment, the number of active, independent telephone connecting stations decreased, and the number of stations connected to the AT&T network increased only marginally.

AT&T was free from further antitrust scrutiny for several years and, just 7 years later, regained the ability to acquire independent telephone networks.

In the end, instead of protecting local businesses and competition, the Kingsbury Commitment's sanctions only preserved the competitive advantage that AT&T had built — and gave the company the green light to build it out further.

Over the next several decades, AT&T would use this regulatory oversight and other legislation passed in its favor to consolidate its control of both long-distance traffic and the nation's local telephone systems.

AT&T's dominance would last until 1984 when the many companies in the Bell System were officially broken up and turned into "Regional Holding Companies," causing a 70% drop in the book value of AT&T.

AT&T's "Baby Bells" have been successful companies on their own. In 2005, AT&T itself was purchased for \$16B by SBC Communications (formerly Southwestern Bell), one of the several Regional Bell Operating Companies that had been created as a result of the breakup.

While AT&T was prevented from acquiring T-Mobile in 2011, the new AT&T company purchased DirecTV for a total of \$67B a few years later, and in 2018, the company was given permission to buy Time Warner in a deal valued at about \$85B.

Today, as a result of those acquisitions, AT&T is the world's largest telecom company.

29. Regulatory: How years of regulatory and compliance efforts are paying off for Coinbase

[Coinbase](#) has been cultivating relationships with regulatory and compliance authorities since it was founded. These efforts have paid off as the company has built a regulatory moat that competitors will find hard to overcome.

For instance, Coinbase is one of the few cryptocurrency operators to be awarded a BitLicense from the New York Department of Financial Services. This authorization was issued in 2017 and allows Coinbase to run its virtual currency business in the state of New York. Getting the BitLicense is a complex process that requires a lot of paperwork, money, and legal assistance. The permit is a barrier to entry for crypto startups but also gives Coinbase an advantage over competitors not based in the US.

Coinbase was the first crypto exchange that went public, debuting on the Nasdaq in April 2021 and fetching a valuation of over \$80B at the end of its first day of trading. As a public corporation, Coinbase can more easily attract major investors, including institutional endowments and investment advisers of high-net-worth individuals. Such access to capital can then be used to fund research efforts and expansion plans and comply with new crypto regulations.



COINBASE CEO AND CO-FOUNDER BRIAN ARMSTRONG. SOURCE: FLICKR

Coinbase co-founders Brian Armstrong and Fred Ehrsam were committed to tackling regulatory concerns from the company's early days. Venture investors took notice of this. Barry Schuler of DFJ Growth led the \$75M Series C round in Coinbase in January 2015 only after being convinced that Coinbase "was taking regulatory issues seriously. Ultimately everyone got their head around it." He recalls his legal teams having concerns about investments in crypto startups given the reputation of the market at the time — Tokyo-based bitcoin exchange Mt. Gox, for instance, was hacked and forced into bankruptcy only 6 months earlier.

Coinbase's regulatory moat across multiple jurisdictions has increased confidence in its stability, allowing it to build out offerings with an eye on long-term growth. Garry Tan, founder of VC firm Initialized and an early backer of Coinbase, says that:

“Coinbase is like crypto's tech giant. Coinbase's (debut), and it existing as one of the cornerstone tech companies in Silicon Valley, is very powerful because it means that, just as the personal computer revolution needed Apple and Microsoft, the crypto revolution needs Coinbase.”

However, Coinbase's regulatory advantage is also a big risk factor. The regulatory frameworks the company currently follows may change dramatically as lawmakers gain a better understanding of crypto, and there's no guarantee that governments around the world won't start cracking down on the market. Such actions would cut into Coinbase's moat substantially.

Another downside is the fact that some crypto enthusiasts don't want to use heavily regulated platforms. In a letter embedded within a prospectus submitted to the SEC, CEO Brian Armstrong said that “our commitment to compliance and the attendant customer-facing requirements ... have resulted in our customers transferring significant funds and crypto assets to these unregulated or less regulated competitors.”

These challenges notwithstanding, Coinbase is for now enjoying the fruits of its years-long compliance efforts. And while other crypto exchanges such as [Kraken](#) may go public, Coinbase has plenty of time – and resources – to reinforce its regulatory moat and even build a new one.

The new moats

Virtually every company is built on some kind of advantage: an entrepreneur uncovers an inefficiency in the marketplace and then exploits it. But lasting companies are built on moats – on structural advantages that make it difficult for other companies to come in and repeat that same original discovery.

In this way, the moats of today mirror many of the foundational corporate moats from the past. Facebook, Amazon, and Google look different, but they have harnessed many of the same types of structural advantages as companies like Standard Oil, General Electric, and IBM.

But while they may harness similar advantages to size and scale, they do it in a new way: using data, network effects, online marketplaces, search, and social networks.

However, how durable these new moats will prove to be over the next century is an open question.