December 2, 2019

Dear Partner,

Our portfolio looks completely different today than it did two years ago, when I first began writing to you signaling our evolved approach to investing. While we remain as opportunistic as ever, there is enormous value in being a long-term investor in exceptional businesses at attractive valuations rather than an investor in low-quality, bargain-priced securities. Every letter since Q4 2017, our two investor day presentations and various podcast interviews have further expanded on this theme.

As a result, today our portfolio is nearly one hundred percent invested in software-based businesses that benefit from secular tailwinds, each of them riding up one or more technology adoption curves. These businesses are led by strong management teams (frequently with founder/CEOs at the helm), have wide moats (or are in the *process* of building wide moats), possess strong balance sheets and high returns on incremental invested capital, and were acquired into our partnership at attractive valuations.

We began buying shares of **Shopify** in early 2019. Shopify's goal is to build a global operating system for retail. To understand what this means, think of Shopify as a website anyone can visit to sign up for a store—prices start at $29 per month for a full online store experience including unlimited product listings—and get up and running in a few minutes. It is software delivered as a service, substantially lowering the barriers to entrepreneurship. Shopify is a beneficiary of the explosion in cloud computing, like many of our other holdings.

Shopify's founder Tobi Lütke grew up in Germany. About his early years, he reminisces:

I got my first computer when I was 6, and I was part of that early generation of children who grew up with computers always being around. I fell in love with them early on.

I never cared a lot for school. I categorized school as a history lesson because it was so obvious that computers were different. My parents didn't understand them, my teachers didn't. You can imagine the authority problems that stem from a situation where the people you know don't know anything about the things you care about.

This is probably why I had to start a company at some point, because I don't think I could have worked for anyone else. So I taught myself programming, and picked up an apprenticeship when I was 16 as a programmer at Siemens. I never went to university.

Tobi Lütke, chief executive of Shopify. Earl Wilson/The New York Times

I also have a weird obsession with optimizing things. Even when I was walking to elementary school, I counted the number of steps on different routes so I could figure out which one was shortest.

I'm always trying to think of ways to make something more efficient. If I have to do something once, that's fine. If I have to do it twice, I'm kind of annoyed. And if I have to do it three times, I'm going to try to automate it.

In 2004, after moving to Canada, Lütke started Shopify out of frustration: he was trying to sell snowboards online, and existing software packages just didn't cut it. Back then, everything about selling online involved friction. To obtain a merchant account and accept credit cards online, Lütke had to post a $10,000 bond, fax his driver's license and password to Utah, and wait 30 days. Implementing one of the existing ecommerce software packages took hundreds of thousands of dollars and many months.

Today, setting up a store and accepting payments on Shopify takes minutes and costs a few lattes. I've been following Shopify and Lütke for quite a while; Lütke is one of the smartest and most thoughtful founder/CEOs today.

Given Shopify's young age and enormous market—commerce—the company faces meaningful competitors: Magento (acquired by Adobe in 2018), Demandware (acquired by Salesforce in 2016), BigCommerce (a SaaS-based solution) other offerings from enterprise software giants Oracle and SAP and point solutions like WooCommerce (an open-source plugin for WordPress). However, by all accounts, Shopify has been taking market share from incumbents and outpacing challengers by offering a better user experience and faster innovation, at a substantially lower price.

At the high end, for instance, Shopify Plus, which is Shopify's most expensive tier and suitable for large merchants, costs only $2,000 per month plus 0.25 percent of gross merchandise volume (GMV) sold above $800,000. BigCommerce, which has inferior solutions for multichannel commerce and point of sale, charges 0.5 percent of GMV; Demandware (now called Salesforce Commerce Cloud) *starts* at 1 percent of GMV, 4x pricier, with an unlimited tier closer to 2 percent of GMV. For a shop selling $20 million in yearly GMV, the difference between Shopify Plus and the lowest Demandware tier amounts to $150,000 per year. Magento is similarly expensive.

"Demandware is a great place for a very large retailer who wants to outsource their ecommerce and have a massive services team come in, embed in their company for six months and build it. That is not really who we compete with," says Shopify COO Harley Finkelstein. As Shopify continues to invest heavily in research and development, any product and feature gaps with Demandware will continue to shrink, at a substantially lower price point.

Despite the enormous resources of Salesforce ($16.9 billion in revenues compared with $1.6 billion for Shopify), Shopify is eating Demandware's lunch:

	Revenues		Compounded	Current growth
	2016	2019	growth rate	rate
Demandware	$227	$590	37%	23%
Shopify	$389	$1,555	59%	35%

Most striking is Shopify Plus's lower total cost of ownership. Competitors such as Magento and Demandware not only have much higher ongoing fees in terms of take rate (percentage of GMV), they also require heavier maintenance and costlier hosting. Magento in particular has been such a weak competitor, Lütke jokes they think of Magento as a great place to find merchants to onboard onto Shopify Plus.

In textbook *Innovator's Dilemma* style, Shopify began at the low-end and moved up market with Shopify Plus. The goal is to save the merchant the hassle of replatforming, or switching ecommerce platforms. Accountants might start with Excel, then move to QuickBooks and finally to Oracle as they grow and require more sophisticated features. Shopify wants to keep the merchant throughout that whole journey, and Plus is the answer: they call it "cradle to scale."

In true disruptor style, it's not giving up the low-end. If all a merchant wants is to sell on Facebook, Shopify Lite does it for $9 per month. With all the features, security, hosting and constant improvement, nobody can undercut Shopify on price.

Shopify doesn't market itself as an operating system for retail, because as Finkelstein points out, "no merchant is looking for that." Shopify provides a central hub for the increasing complexity in today's commerce world: there are multiple sales channels (online store, offline store, and integrations with marketplaces like Amazon, eBay, Instagram, Facebook and Pinterest). In the future, there will be an augmented reality channel, and very likely, a virtual reality channel. "The advantage of Shopify is that it all feeds back to one centralized place," Finkelstein notes.

One common misconception about Shopify is that the company has "high churn," which means that a lot of the customers it signs up end up leaving the platform. This is a misconception because while it's true, it's a *feature* of Shopify, not a bug.

The cost of onboarding a merchant onto Shopify is effectively zero—it's the cost of making a database entry. Therefore, Shopify should onboard *as many merchants as possible*, because you never know who is going to achieve product/market fit and hit it big. The *unit* churn doesn't matter; what would be concerning is if there is a leaky bucket problem, or *dollar* churn. Here, Shopify shines, with positive revenue cohorts every year. The higher up one goes in Shopify's tiers, the less churn there is; at the highest Shopify Plus level—its most valuable merchants—churn is de minimis.

Key to Shopify's success is its partner ecosystem. These include developers of applications that plug into and enhance the functionality of Shopify; designers of themes that Shopify merchants can use for their stores; and other types of partners such as agencies that help build and manage Shopify stores. This ecosystem acts as a distributed sales force for Shopify. The company doesn't employ any salespeople at all, relying first on frictionless onboarding through its website (Shopify *does* have salespeople for the Plus offering, which is a higher touch product for large merchants). In terms of customer acquisition, the top channels for Shopify are organic (Shopify runs the world's most popular ecommerce blog), paid advertising channels (like Facebook ads), and finally, partner referrals.

Over the past year 23,000 of these partners—most of them agencies that help merchants set up, design and manage their stores—referred merchants to Shopify. Whenever a partner refers a merchant to Shopify, Shopify pays out 20 percent of that merchant's subscription revenue for the life of that merchant back to the partner. This is a great way to build partner loyalty. In international markets, where Shopify has been growing faster, the revenue share is 30 percent, spurring the growth of a thriving partner ecosystem.

There are currently 3,200 apps available on the Shopify App Store. Whenever a developer sells an app on the Shopify App store, Shopify pays out 80 percent of the economics to that developer (this is more generous than the Apple iOS app store, which pays out only 70 percent).

Shopify is in the early days of building a valuable platform, and by *platform,* I mean something very intentional: a structure on which others can stand and build something even larger. Some of the world's largest platforms—with millions of developers earning multiples of what the platform-maker earns—include AWS, Microsoft, Apple's iOS and Google's Android. It took about nine years for Shopify to pay out its first $100 million to developers, but then it only took twelve months to pay out *the next* $100 million.

Partner and developer ecosystems reinforce the flywheel advantages of the business: the more partners there are, the easier it is to get started on a complicated Shopify project. The more apps available, the more powerful and adaptable are Shopify's features. In ecological terms, we can think of Shopify's developer ecosystem as a distributed immune system, helping the host fend off competitive incursions. It's an army tasked with widening Shopify's moat.

There are two main drivers of Shopify's value over time. First is GMV growth. How quickly can the sales volume of Shopify's merchants grow over time, and how big could GMV get?

We know that ecommerce adoption in the US is about 10 percent of total retail sales. It is lower still in most countries outside the US (with some notable exceptions like the UK and China). There is a long-term adoption curve expanding sales from offline to online and multichannel, and this benefits Shopify.

Second, Shopify is winning business from its competitors. Every large merchant who drops Demandware or Magento and moves to Shopify Plus grows GMV for Shopify. The result: if we look at online GMV only, Shopify is currently the country's third largest "retailer," behind Amazon and eBay, and with larger ecommerce sales than Walmart and Apple. With 51 percent GMV growth (year-over-year) last quarter, Shopify will soon overtake a shrinking eBay.

Finally, with each pain point that Shopify eliminates for merchants, it lowers the barriers to entry for would-be online vendors. It grows the pie to encompass entrepreneurs who might never have been merchants otherwise. Two examples here are instructive.

At the high end, even established CPG companies like Johnson & Johnson, Unilever, Proctor & Gamble and General Mills are now Shopify Plus customers. CMOs wishing to experiment with a new direct-to-consumer concept can pull out their credit card and get started in a few hours. Here's how Finkelstein thinks about this:

So every year, we have been changing or at least adjusting the pricing plan for Shopify Plus. If you think about the price-to-value ratio of Plus, it is very much weighed on the side of value. And so we have not necessarily optimized for revenue maximization.

What we're trying to do right now is, we see a massive opportunity in the enterprise e-commerce space. Everyone has been acquired effectively. Most of them have been acquired by companies that want to sell other products to those customers, whether it's Adobe or it's Salesforce.

And we're not seeing great innovation. And the pricing is still kind of out of whack. And so the idea is, let's make Shopify Plus too good to ignore, so that anyone who is even thinking about enterprise e-commerce, whether they're a new CPG brand, first time going direct-to-consumer, or they're a migration from one of the other major players, that Shopify Plus becomes a no-brainer. And that's kind of what we're doing with pricing.

And so I think there will be room to adjust that longer term. But fundamentally, we like the fact that all roads lead to Shopify Plus right now in the enterprise world.

At the low end, Shopify *grows the pie* by enabling entirely new types of merchants to emerge. One obvious example is the celebrity merchant, like Kylie Jenner, who built an enormous business on Shopify, Kylie Cosmetics, into a business worth $800 million in less than two years.

A more recent example is Jeffree Star Cosmetics, created by YouTube stars Jeffree Star and Shane Dawson. Within minutes of the site's launch, it had crashed; which is surprising, because Shopify is hosted on Google Cloud and engineered for highly demanding workloads. But nothing like this, as Web Smith, an ecommerce analyst, wrote:

> While I am not permitted to share the exact numbers, I can communicate the following: the number of visitors that Jeffree Star Cosmetics (JSC) outnumbered the aggregate traffic for **all** Shopify and Shopify Plus stores at the moment of the server crash. Put another way, the number of visitors that visited the Shopify store before the down period were greater than Amazon's aggregate traffic in the same 20-30 second period and far greater than Nike's peak traffic over the 12 trailing months. Preceding the down time, Jeffree Star and Shane Dawson sent a large percentage of their Youtube followings to a single product page at the same exact time. No site, with perhaps the exception of Alibaba's tmall, is equipped to handle the entire city of Toronto at checkout at the same exact second.

According to *Business Insider*:

In the latest episode, "The $20 Million Dollar Deal with Jeffree Star," Star told Dawson their upcoming eyeshadow palette could earn him $10 million.

In a meeting, the team discussed the idea of an initial launch of one million palettes, which Star said would be his biggest purchase order ever. For comparison, Star launched his debut "Blood Sugar" palette with 100,000 units.

Clearly bemused and in shock by the numbers, Shane said he had never sold that much of anything and it was "impossible" to fathom.

"The thought of that many people actually buying something, I can't," he said. "What if people don't buy it?"

When the site came back up, they sold their one million palettes in 30 minutes.

The second driver of Shopify's value over time is its take rate, which is simply "how much in revenues can Shopify earn out of the GMV it enables?" Recall that Shopify costs $29 per month for an entry-level store, but 0.25 percent of GMV at the high end for Shopify Plus. To simplify, if all of Shopify were just Shopify Plus and the only revenues Shopify earned were those 0.25 percent of GMV, then Shopify's take rate would be 0.25 percent of GMV.

Yet Shopify earns a lot more than just a take rate on Shopify Plus. Recall that Shopify earns 20 percent of revenues of each of the 3,200 apps on its marketplace. It also earns monthly subscription revenues for Shopify Plus and every tier beneath it. In addition, Shopify keeps creating new solutions to solve merchant pain points, and each of these increases their share of merchants' wallets: Shopify Payments (credit card acceptance and payment processing), Shopify Capital (loans made against merchants' sales) and Shopify Shipping (software that calculates rates, prints labels, and enables access to discounted rates for various shipping partners, saving time and money).

These additional revenue streams raise Shopify's take rate to about 2.6 percent of GMV. eBay has a take rate approaching 9 percent. Etsy has a take rate of 15 percent, and Amazon's is even higher. These comparisons are unfair: marketplaces will by definition have higher take rates because they solve the problem of *customer acquisition*. Shopify merchants must spend significant time and money in sales and marketing, whereas a seller on eBay has an enormous pool of buyers ready to transact. Still, further offerings should allow Shopify to increase its take rate over time.

A recent example: Shopify announced Shopify Fulfillment Network (SFN), which allows merchants to eschew warehouses and delegate logistics to Shopify's network of partners.

Over time, two things should happen: Shopify will be able to exercise pricing power at the high end (Shopify Plus) and will continue building more solutions for merchants (like Payments, Capital, Shipping and now Fulfillment). Gradually, the take rate will rise.

Shopify has said many times that it aspires to operating margins of at least 20 percent, which seems reasonable given the company's gross margins and cost structure. Using these inputs—GMV growth into Shopify's expanding addressable market, take rate and operating margins—we can build and sensitize our discounted cash flow model and take a stab at valuing the business. Depending on our assumptions, the stock will deliver a different set of returns, but it's unlikely we'll lose money over the long run. Hopefully the outcomes are such that our more optimistic scenarios end up looking conservative. The ambition of Shopify's founder and executives, and their speed of innovation, hopefully will see to that:

Slack Technologies is another recent investment we made. I've been following the company for a few years, and this year I had the opportunity to attend Slack Frontiers, the company's two-day user conference in San Francisco, held in late April. I've been spending most of my research efforts making these sorts of trips and participating in user and developer conferences. I usually know what to expect.

I thought Slack was special, but at Frontiers I met the management team, employees and most importantly, customers large and small, and witnessed firsthand the enormous utility of the product. Lazard, Lyft, Ford, Hearst, IBM, Oracle, Shopify, Wayfair and Electronic Arts (to name a few) have thousands of users on Slack (in IBM's case, over 165,000 seats). They all have hundreds of app integrations and the productivity enhancements they demonstrated were incredible.

Ford has software developers in different continents coding on the same project, using a Slack channel for collaboration. Hearst created a Slackbot to easily check what type of content is working across its publications, allowing the right data to always reach the right person.

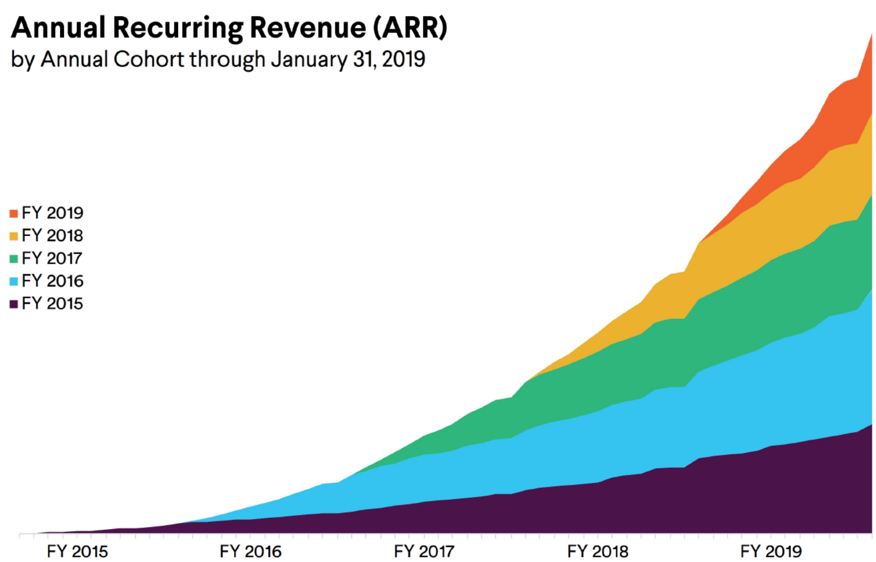
Another presenter showed the deep integrations between Slack and Atlassian's general-purpose productivity tools like Jira and Confluence (Atlassian became a Slack shareholder in 2018 after shutting down its competing product). Even 3-star Michelin-rated restaurant Single Thread, which operates a 5-acre farm, a 180-acre vineyard, its namesake restaurant and an inn, runs its entire operation on Slack.

Out of the Fortune 100 list of largest companies, 65 already are Slack users. Eric Yuan, the CEO of Zoom (another Slack user), noted that some companies can't even hire unless they are Slack users because candidates are demanding it.

The common thread across all these stories: after watching how these companies work on Slack, you'd be hard-pressed to understand how they could possibly operate without it.

By the end of the first day of the conference, I was so blown away by what I had seen that I was convinced Slack is the future of enterprise collaboration software. And I became even more impressed by co-founder Stewart Butterfield (named Dharma at birth and raised in a hippie commune in Canada). Butterfield has been very successful at serial pivots: his first creation was a video game that didn't catch on, but whose photo management software became Flickr. He sold it to Yahoo! for $25 million. His second creation was a game called Glitch which also didn't work out, but whose internal collaboration tool turned into Slack. I had listened to several Butterfield interviews before the event but meeting the team and seeing the culture he created sealed the deal in my mind.

I made some phone calls and found out Slack had been valued at $7 billion recently. I built a rudimentary model and realized that was very likely an enormous bargain, so I called Slack's general counsel to find out if there was a way to buy stock before Slack's direct listing.



Alas, my timing was a bit off: Slack would publish its prospectus and kick off its listing process the very next day, at a substantially higher valuation. (After reviewing the numbers in the prospectus—one of its impressive cohort charts appears on the left—my assumptions were confirmed: $7 billion *was* an enormous bargain.)

The simplest way to think of Slack is as a replacement for internal email. Slack solves several critical problems, particularly for larger companies. Instead of an inbox for every worker, Slack is organized around channels for each team or function. These channels can have different permissions and visibility across the organization, different data retention policies, workflows and documents associated with them.

Suppose a new employee joins a company without Slack. On day one, she is staring at an empty inbox. She has no message history to learn from; she doesn't know the social interactions that are typical of her team; there is no searchable archive. If she is taking over someone else's job or project, she'll likely get forwarded several unwieldy email threads. Slack channels solve this problem. Not only do they provide employees this utility, they also enable visibility across functions and across teams. A CEO can drop into any channel and quickly get up to speed on how different departments are functioning, how deals are progressing and what challenges are being faced. This would have been impossible with email.

The other critical problem Slack solves is one of connecting siloed applications. Large organizations use thousands of apps and collaborating across these requires a lot of context switching, remembering passwords, copying and pasting and the use of import/export tools.

Slack connects these apps in a way that dramatically reduces these complexities, saving time and making workers more productive. If an enterprise spends $100 million per year in technology applications, Slack wants to be the 2 percent of that spend that leverages the other 98.

One underappreciated aspect of Slack is that it makes work more fun. The vast majority of Slack users report being more productive and believe teams work better with Slack. Chat interactions are more informal than email. Slack works great on any device and is suited for mobile as well as desktop. Users tend to use emojis much more frequently, and the ease of developing simple workflows, routines and bots eliminates repetitive work.

There are fun apps like Donut, which randomly pairs employees and automatically sets up a time to get coffee, a great way to encourage collegiality and cross-pollination. One senior director of sales managing eight teams across five cities and two countries said it's really hard to get a sense for how people are feeling, so she uses a Slack integration that periodically pops up and asks people how they are feeling and what have been their week highlights or lowlights. Human capital management behemoth Workday was able to increase coworker feedback 5x just by placing the user interface inside of Slack rather than making folks switch context to the Workday app (there was huge pent-up demand for Workday's Slack app: 97 companies signed up for their early adopter program).

When Slack finally listed its stock, it shot up by nearly 50 percent and entered "this makes no sense" territory. But today, with the stock down to an $11 billion valuation and two additional quarters of growth in the business, the numbers make sense.

Following Frontiers, I attended Slack's Investor Day, and recently its developer conference, called Spec. These events allowed me to learn more about the company's opportunity and burgeoning developer ecosystem. The latest count is that Slack now has 1,800 app integrations, 600,000 developers and 12 million daily active users.

The biggest overhang over Slack's shares today is the threat of Microsoft Teams, which was launched as a Slack copycat in 2016. At the time, Slack was the fastest-growing enterprise software in history.

Teams has been growing even faster, as measured by daily active users (Slack has a free tier and then the least expensive tier is $7 per user per month; Teams is bundled for free for Office 365 users above a certain tier). There is significant debate, however, about how *active* Teams's active users are. Most analyses show that the answer is *not much*: Microsoft has been moving Skype Business users to Teams and it seems Teams is used mostly for video calls, while everything else is happening in Slack. Indeed, Slack's paid users are spending 9 hours per day connected to Slack, with an average of 90 minutes of active usage every working day, and there appears to be significant overlap between Teams and Slack users.

Slack's paid customer count increased 37 percent year-over-year in its most recent quarter, but the largest customers grew 75 percent year-over-year. Having attended three Slack events and spoken to many of these large customers, this was obvious to me: Slack is ideal for large enterprises, and Teams has a fraction of the app integrations that Slack has. Countering the misguided narrative that Teams is making a dent on Slack, Butterfield came out swinging in Slack's earnings call:

> This quarter saw win after win in the largest companies in the world. […] A Fortune 100 financial services firm, which has been a Slack customer for years, with continual expansion throughout the company, added thousands more active users and is now going wall to wall for their more than 50 thousand employees across functional roles including, marketing, HR, legal, finance and sales.
>
> Of course, like most of our large enterprise customers, they run on Office 365. They still chose Slack because only Slack was capable of meeting their needs.
>
> Increasingly, in regulated industries, we are seeing significant traction because Slack blends security and compliance with scalability, an open platform and a great user experience. In addition to exciting wins in healthcare following our ability to support HIPAA compliance, a large Midwestern insurance company also expanded to thousands of users this quarter. Slack is a key plank in their transformation efforts and plays an essential role, as it does elsewhere, as a lightweight fabric for systems integration. They leverage more than

500 integrations, including PagerDuty, Dynatrace, JIRA and an extensive set of internally-developed integrations to drive more return from their overall investment in software.

This is another Office 365 customer, and they chose Slack because only Slack's open platform integrates with the full range of internally and externally developed tools they use.

While competing with Microsoft sounds scary, we can flip this around, too: how many businesses with Slack's exceptional characteristics exist out there, that have only *one* meaningful competitor? The answer is… none that I can think of.

Given the huge size of the market for enterprise collaboration software—especially one that, once adopted, becomes part of the infrastructure of a business—I believe there will be plenty of room for both Slack and Teams (there are products that are complementary to Slack, like Workplace, which is an incredible enterprise SaaS offering by Facebook, but that is a topic for another letter).

Financially, Slack is no slouch: the company sports gross margins of 87 percent, which should eventually translate into free cash flow margins north of 30 percent. In terms of go to market, the company has frictionless onboarding through its free tier, requiring no sales team, as well as a high touch enterprise sales team and customer success folks making sure key integrations and best practices are being adopted for its most valuable customers. Once a large customer adopts Slack, they rarely churn, resulting in a very attractive customer lifetime value. When we add the cost of acquiring customers to the equation, Slack ends up with attractive unit economics (think very high returns on incremental invested capital).

It therefore makes sense to pour fuel on the fire and *grow*, and that's exactly what Slack is doing, projecting higher expenses for sales and marketing and revenue growth of 47 percent for the upcoming quarter.

Network effects are a big part of the benefit of using Slack: even among the largest customers, 95 percent begin using Slack in a self-serve way. Butterfield recently gave the example of one such customer who began using Slack in one of its teams, with the manager using his corporate credit card. He kept increasing the limit until he hit $35,000, finally looping in his CIO. The more employees use Slack, the more valuable it becomes.

If one company stops using Slack, the network effect is gone. Is there a way to strengthen this by having network effects *across* businesses? This would mean that Slack becomes more useful and valuable the more *companies* use Slack. From Slack's last earnings call:

Shared Channels allows customers to securely collaborate with external partners, suppliers, and their own customers in channels while still maintaining their internal controls and compliance policies. More than 20,000 paid customers have already adopted Shared Channels during our beta program, a number that far exceeded our expectations at the program's launch. What is incredibly exciting is that, as the size of the cohort has increased, the intensity of usage has also increased. That means that the average number of Shared Channels in use by Shared Channels-using customers has increased as more customers joined the beta. And the same thing is true with the size and density of the largest network cluster, resulting in a lower number of average "hops" from any two randomly selected participants.

We are already seeing customers choose Slack because of Shared Channels. We had a big win in the quarter with a major American sports league beginning to use Shared Channels to communicate with the franchises, a network made up of the league, the teams and their partners.

We even saw a large media streaming service requiring its creative agency to adopt Slack so they could use Shared Channels to collaborate. In some cases, because Shared Channels were so important to them, larger customers postponed their upgrade to Enterprise Grid, until Shared Channels beta became available in Grid this June.

This is our first real network effect across customers. We orient the business to seek out increasing returns dynamics anywhere we can find them, and that's definitely something we've seen in the platform ecosystem and the network inside of individual companies — Slack gets more valuable as more people are on it. But now we expect to be able to increase the value for all of our existing customers as new customers start using Slack.

Given Slack's enormous opportunity, we expect the company to continue innovating and capturing more customer wins, while at the same time growing its developer ecosystem, strengthening its various network effects. Our modeling shows it's reasonable to expect the company to be worth 5-6x more than the current market value within a decade.

The final business we'll profile in the letter is **Roku**.

Roku was founded by Anthony Wood in 2002. Recall that in 2002, the internet was in its infancy, and streaming wasn't yet a thing (Netflix didn't start streaming until 2007). In the early days, Roku was focused on building internet radios, high-definition media players and digital signage. Over the years—Wood was a Netflix employee while also working on Roku, with Netflix's blessing—the strategy evolved into becoming a pure video streaming business.

Roku's first streaming customer was Netflix, which used to be 100 percent of Roku's streams. Over the years, Roku has diversified and is today a platform for television distribution.

Roku builds software that it licenses to TV manufacturers like TCL. It also sells its own Roku sticks, which anyone can plug into an existing TV. In the first nine months of this year, more than one third of all smart TVs sold were Roku TVs. In the editorial results below, which I took from Amazon's website, two out of the three are Roku TVs:

Best
Best Budget TV

Hisense 50H8F 50-inch 4K Ultra HD Android Smart LED TV HDR10 (2019)
113

Limited time deal

$349.99
prime

The Hisense H8F is a very good entry-level 4k TV with great picture quality, decent motion handling, and excellent low input lag. It looks great in a dark room, as it has…

Best Cheap
Best Cheap TV

TCL 32S325 32 Inch 720p Roku Smart LED TV (2019)
3,467

$127.88 ~~$199.99~~
prime

The TCL 3 Series S325 is an entry-level 1080p LED TV with mediocre picture quality. It has a very good contrast ratio but lacks a local dimming feature to deliver a great da…

Alternative
Alternative With A Wide Color Gamut

TCL 55" Class 5-Series 4K UHD Dolby Vision HDR Roku Smart TV - 55S525
85

Limited time deal

$399.99 ~~$699.99~~
prime

The TCL S525 is a good budget 4k TV with good picture quality, a great response time, and outstanding low input lag. It has an excellent contrast ratio and great black uni…

Roku is not a hardware manufacturer; the hardware it sells is just an on-ramp onto its streaming platform. Because Roku sells its hardware at a small gain (around 4 percent gross margin), it can be thought of as a very low-cost customer acquisition tool. From then on, Roku monetizes that customer through advertising and a revenue share of SVOD (subscription video on demand) channels (called "Platform Revenue," sporting 63 percent gross margins).

Underlying Roku's growth is a secular shift from linear TV—such as your local broadcast over-the-air channels—to streaming TV, whether subscription (Netflix and Disney+) or ad-supported (Hulu, Pluto TV, the Roku Channel, Sony Crackle, TUBI, Vudu, and YouTube).

Because of this shift, advertising budgets are also moving, albeit at a slow pace. About 29 percent of TV viewing is already OTT, whereas only 3 percent of ad budgets have moved over. This represents an opportunity that is tens of billions of dollars in size and dwarf's Roku's current platform revenues of just over $700m. Put another way, could Roku one day have $5 billion of platform revenues? $10 billion? Yes, it's possible, given the very large market domestically and internationally.

Advertising on Roku has advantages both for the advertiser and the viewer. Ads can be targeted more precisely than on linear TV. This should, over time, result in higher CPMs (cost per thousand ad impressions) than on linear TV. At the same time, viewers have the benefit of ad loads that are about half that on linear TV, which results in a superior consumer experience.

Currently, content owners like CBS and Viacom earn both subscription and ad revenues from cable distributors like Comcast and Charter. As cord-cutting continues unabated—the industry has lost paid customers every year for several years now—cable companies are trimming their bundle offerings. They are more than happy to do so: video is a low margin offering for them and requires high capital expenditures. Broadband, on the other hand, is exactly the opposite. The endgame of the TV bundle is live sports and news, with nearly everything else moving OTT.

Roku, as the most comprehensive aggregator of OTT content, is the prime beneficiary of this trend. It benefits from the proliferation of SVOD services like Netflix, Disney+ and the upcoming HBO Max, Peacock and others. Each time a customer signs up for one of these services inside Roku, the company earns a revenue share.

Pursuing this strategy of licensing the operating system for Roku TVs and selling Roku sticks at a tiny margin as an on-ramp to the Roku platform, the company has experienced blistering growth in active accounts, from 10 million in early 2016, to 20.8 million in early 2018, to 32.3 million in the latest quarter.

At the same time, the average yearly revenue per user has increased from $5.73 in mid-2015 to $22.58 in the latest quarter. This combination has resulted in explosive platform revenue growth of over 70 percent over the last twelve months. Future active account growth coupled with an increase in engagement and streaming hours leading to increased ARPU should continue to fuel Roku's revenue growth.

In advertising, Roku recently strengthened its competitive position with the acquisition of demand-side advertising platform dataxu. As advertising moves OTT and becomes more targeted and programmatic, dataxu will allow Roku to stay ahead of rivals by controlling its own ad technology.

The spectacular rise of the stock this year—up 335 percent since we started buying—has pulled forward some returns. But if the company continues to execute well, there are more returns ahead. Based on our modeling of growth and operating margins at scale, we believe the stock could compound in the mid-teens from the current price.

We continue to own positions in **Amazon, Alphabet, Facebook, Twilio, Square** and other software businesses we have discussed previously. We look forward to sharing our Q3 update in a few weeks.

Thank you for the trust and commitment you have in Heller House. Should you have any questions about this letter or the partnership, or any other concerns, please do not hesitate to contact me.

Sincerely yours,

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