Blake Robbins

61-78 minutes

Stripe's mission is to increase the GDP of the internet. John started Stripe with his brother Patrick when he was just 19 years old, and has grown it to, at last valuation, a $36bn business.

These are my abbreviated (lol...) notes from Patrick O'Shaughnessy and John Collison's interview. Everything is from the perspective of John Collison.

Most technologists are really interested in studying the history of technology because you want to not just be a one hit wonder, you want to not just have one product that works and then passes by, but you want to be able to surf multiple waves.

I think all of the kind of people have been talking recently about how much of the S&P 500 is now made up of the Googles, Facebooks, Microsofts, companies like that. If you look at all those companies...what's impressive about them is how they've managed surf multiple waves and have multiple successful, independent lines of business.

Example: Facebook integrating acquisitions successfully (Instagram, WhatsApp, etc.) and making the move to mobile succesfully.

What I find interesting to look at is how it tends to be different outside of technology and the different dynamics you get in conglomerates and kind of enduring businesses in other industries, because we're kind of used to the way technology likes to do it.

However, there are tons of really spectacularly successful companies that have grown as high rates for years and years and years outside of technology.

Class multi-industry conglomerate:

Berkshire Hathaway — the different intellectual hobbies of Warren Buffett

RJR Nabisco — What is a cigarette manufacturer and the maker of Oreos doing under one corporation?

Single industry conglomerate (outside of tech):

Domino's (Pizza) — grown more impressively than all the technology companies

Vail Resorts (Hospitality)

If you just look at the single industry industry conglomerates, it's actually pretty interesting how they work. At first, they are very aggressive acquirers. A lot of their growth has come from selective acquisitions made at good prices, but...what's really interesting is that they often give the managers of the acquired companies a lot of latitude in how they operate and how the companies work.

They are not really deeply, tightly integrating them to the one platform. They actually kind of buy these companies and then don't integrate them that tightly, but they've still driven really interesting performance as a result of that.

This is in contrast to how technology companies typically handle acquisitons. Companies like Salesforce or Cisco make a ton of acquisitons but they deeply integrate them within the rest of their company

Example: Salesforce acquired desk.com and turned it into service cloud.

No one within the technology industry has done what you actually see pretty commonly in the rest of the world, which is one holding company for a whole bunch of independent businesses that are sharing expertise. They are sharing management styles and rotating managers across them.

Counter-example: Constellation Software, which owns around 500 businesses. They own a wide range of independent software businesses. John uses the example that one will sell software to golf clubs and the other will sell plumbing software, but the managers will trade notes and things like that.

Venture capital is the much more loose version of this, where they're actually not part of the same company at all but maybe they share some common elements of things are done across companies.

Why aren't there more conglomerates in tech that operate like Constellation Software?

I think venture capital must have something to do with it.

Valuations of technology companies tend to be fairly healthy, but maybe the reason this strategy only works in other industries is because those serial acquirers mentioned (above) are able to a lot of acquisitions at reasonable prices.

The other thing that is interesting to think about: Is there a platform for common knowledge and best practices that you need in other industries, but is actually it's provided by venture capital firms in tech?

The Danaher acquisition strategy doesn't apply to tech. The classic thing that Danaher did was rolling out the lean manufacturing techniques originally from Japan with classic American industrial companies. And so this was a way in which they could have a set of best practices such that when they acquired a business, it would be better. It would perform better as part of Danaher as opposed to as an independent business where maybe it didn't have these best practices.

However, as I look at the tech landscape with venture capital, one thing that's striking is you can be an eight person firm and you actually have really good access to best practices. Our main VC is a Sequoia Capital and I mean, there's a huge amount of expertise in that firm that you get to kind of unlock when they invest in you, and that's certainly the case across lots of other of the venture firms in Silicon Valley. Some of them even have in-house recruiting and executive recruiting and things like this, like actual in-house functions built out such that in a way it's, you're getting a little bit towards that common platform that maybe the conglomerates would've had, but it's in a VC firm and it's kind of provided on a service model and so that's maybe another reason is that you actually don't need a conglomerate to achieve that best practice sharing.

And of course, this is by the way, something we're trying to do at scale with Stripe.

We try to think about what Silicon Valley's best practices and how do we get them out to the millions of internet businesses over the internet with things like Stripe Press and Increment Magazine and stuff like that, that we can do.

If you are running a business, being able to get it to the point where you can run it by acquisition seems like a very pleasant way to run a business, right? This means that you have this fairly easy way that you can take capital and turn it into incremental growth for the business. I can imagine Stripe will get more acquisitive later on in its development.

I think as we look at where Stripe is and what we need to do on the product side, honestly, there's just lots of really low hanging fruit that we kind of have to do ourselves internally and so as we think about expanding Stripe internationally, or making it even easier to get up and running with Stripe — that's one of the core ways that we have always differentiated the product since we got started is, we want you to be able to come along and in five minutes, set up a business by signing up for Stripe. However, if we want to make that three minutes, that's not something we can really acquire a business to do.

When companies get more mature, it tends to be about platform breadth. I think that is when you can augment that platform breath with acquisitions, and so I think it's probably a bit of a stage of life thing.

The other thing that's maybe relevant here is what we've been building. I actually think it's been helpful that up to now, we haven't grown it with acquisitions. This is getting a little bit into the payments industry, wonkish-ness, but the previous generation of companies that people had to use to accept online payments were often assembled through strings of acquisitions.

Example: The mobile platform that people would be using was actually kind of seven different platforms mixed together by various acquisitions...so this was actually an incredibly painful experience for end customers. If they were going to expand to a new region, they would have to change the integration. They'd have to do even more engineering work to do that.

I think what has helped Stripe get to this stage is that we made a decision very early on that we're going to start from the ideal API and work backwards...

So what is the API that can accept money from people all around the world and then we will do the tough work to standardize that and not expose us to our customers, and so I think in a way, it's been valuable that we haven't relied too much on acquisitions for international expansion. I think if you're going to have an acquisitive business, certainly in technology, you need to have a plan for integrating them well.

The first thing that I think you have to step back and realize is just how crazy inefficient and immature payments on the internet still are, and that sounds like a funny place to start, especially from kind of someone who runs a payments company.

You would think that maybe we would be better at messaging our branding at this point, but you can imagine when we were starting Stripe, it was actually really hard.

When we were raising money for Stripe one of the biggest obstacles we faced was people thinking, this is just a solved problem. Aren't there already ways to accept money on the internet? When we were starting, it was 2009. I had to repeatedly explain to people, no, this is actually still unsolved. That took some effort.

If you contrast how mature the internet is, essentially as an information exchange network, where we have a majority of people in the world now with some access to the internet, especially with all the recent smartphone growth, and it's highly interoperable. I mean, with some exceptions, we're all using the same internet. You can WhatsApp your friend in South Africa or Pakistan or India, and the whole thing just works.

Now, if you look at the systems we have for economic exchange, basically we have a highly complex heterogeneous and increasingly fractured and fracturing landscape and so in the United States, people rely kind of mostly on credit cards, except for there's lots of places where bank debits or checks are the primary way of working.

In China, as a lot of people like to talk about, there was a lot of growth with credit cards early on, but that has since all flipped over to Alipay, WeChat, and things like that. In India, it's really different. People were really predicting the growth of the Chinese super app model all across Asia and Southeast Asia, especially. And that hasn't happened quite as much as people expected, certainly not with those companies.

In India, for example, you actually have the government taking a very active role in technology developments, which is certainly for people in the United States, is not something that they expect to see, or at least see work, but it's worked quite well. Aadhaar was the first identity scheme and then UPI, which is a universal payments interface. A really, really cool interoperable and kind of built on top of a real time switch for payments, and so that's a different system still.

If you look at somewhere like the Netherlands, people online there don't actually buy with a Visa or MasterCard. They predominantly use the thing called iDEAL, which is a local Dutch bank transfer mechanism.

The reason I bring all that up is if you want to start an internet business, or better yet maybe you wanted to monetize this podcast...I assume your audience is relatively global. (Yes, it's very global)

Exactly, so you just want to be able to accept money from people all around the world. Historically, and certainly when we started Stripe, there were no good ways for you to do that. That is the problem that we set out to address and it's been really fun, as you can tell. I mean, weirdly I've ended up passionate about this problem. We get really excited about kind of the longterm second order effects that it drives. We've been expanding Stripe a lot by not just building this global economic interconnectivity, but actually over time, handling more and more of the tasks that businesses find themselves faced with, but that's really how we got our start, the fact that it's really hard to accept payments on the internet.

Stripe is trying to expand the GDP of the internet specifically. In the same way that people had a hard time believing we weren't done with the payment systems that we had at the time, I don't think people really understand how early we are at forming the internet economy.

If you just look at the raw numbers, the internet economy is a very small fraction of the overall economy depending on who you believe, five or six percent, something like that...but the vast majority of internet, of the economic activity is not internet enabled. I think it's fairly clear to all of us that that is going to flip. We're going to end up with actually a majority that's internet enabled, but that means we're really at a shockingly early point in that Sigmoid growth curve.

The thing that gets me excited, and one of the things that we spent a lot of time thinking about at Stripe and trying to drive is what the second order effects are of that shift. I think people spend lots of time thinking about first order effects of technology changes and so if you were an analyst looking at the growth of computers in the fifties and sixties, you might be wondering what are the effects going to be of computers getting faster?

Presumably you'd say, well, banks are going to be able to run their calculations faster and airlines are going to be able to handle even more routes in the route calculation computers. You'd look as what computers were already used for and just kind of project that forward more and faster. You would never forecast video games. I mean, to someone in the fifties, it would seem absurd, the notion that you could have so much excess computing power and it's so cheap that we're just going to use this for this wildly wasteful rendering of triangles. I don't know if you saw the Unreal Five demo, but imagine showing that to somebody in the 1950s. It really, I think their brain might have exploded, or similarly with smartphones.

I think people thought that it was going to be salespeople are going to be able to do more email on the road and you're not predicting Uber. That's just similarly with us, we think a lot about what are the exciting second order effects of more commerce moving online, and I think some of those we're already seeing. One is more globalization. We see this all the time with Stripe, but with Stripe Atlas, as you mentioned, which makes it even easier to start a company, we're trying to lower the barriers to creating a company and in particular, we're doing something where we're making it really easy for anyone to start a Delaware company in the US even no matter where they themselves happen to be, but that means you get way more people in countries that are not the United States or Western Europe, or somewhere like that, able to participate really meaningfully in the internet economy.

We've seen all sorts of interesting businesses built on Stripe from, I mean, literally India to Venezuela, to the Gaza strip. I mean, you name it. We've probably seen people building businesses on Stripe there. I grew up in somewhere that charitably can be described as the middle of nowhere in Ireland and I feel like the internet was a really big part of getting to where I am today, and so again, we get really excited about commerce moving online as a global equalizer delivering more opportunity. That's certainly one.

The second is just so kind of more innovation as you shake things up a little, change the distribution channels. I mean, over the top is a term, originates in media, but I think you can even apply it to lots of things. The idea of going over the top of the existing distribution channels, the existing gatekeepers, the existing structures, and so we see a ton of over the top e-commerce where people starting stores, they have a product they're passionate about and now they can sell to people all over the world.

As a result, you're seeing more niches possible. People starting products that they would never have had a big enough audience for that product in Limerick or Ireland, but if they can address a global audience, then there's actually a pretty big total audience for that product and so we get really excited about the increased specialization, the benefit that it delivers to upstarts where their speeds is actually an advantage. Those feel like trends worth betting on.

One that people love to argue about is, and I haven't fully made my mind up on how I think about it, but I think it is very interesting is...what happens to the dominance of Silicon Valley?

Patrick and I moved to Silicon Valley to start Stripe, I think that was really beneficial for the company and where it was then. However, over time, the company has been growing much more outside of Silicon Valley than within Silicon Valley, and so most people at Stripe are actually not based in the San Francisco Bay area.

Last year, we actually tripled the number of remote engineers in the company. They're now a very significant fraction of the engineering core, but especially with COVID and companies making a temporary move to the cloud, essentially.

I think there's really interesting debates as to how much of that is permanent. And certainly as we look at what's happening with our customers, with how we work, it doesn't feel like it's going to go back to the same equilibrium as it had before.

Another trend that we pay a lot of attention to is, in which industries do the incumbents get good at digital faster than the digital native companies can grow. And then which companies do the digital native companies just outpace all the incumbents and not give them a chance. And so obviously, Amazon, I think we can call that the digital native one. Netflix versus Disney. That's actually… maybe a bit more of an even battle.

We see a ton of Warby Parker. Obviously, one of the very famous, original, successful digital, native E-commerce success stories, where they took an advantage they have of operating online, which is the lower cost structure they're able to deliver due to the direct to consumer model. In such a way that the incumbents actually can't really follow them. Again, it's true, Christensen disruption. But we spend a lot of time thinking about which are the industries that go which ways. Cause it's not always obvious to tell without that hindsight.

When we started, a lot of people told us that: "Payments is a scale business. You'll never make it son. And only the very large companies can survive." And we were like, "No, no, no, you don't realize, things are different. Whatever." Now that we've gotten a chance to actually become familiar and are operating, we're like, "Wow, this really is a scale business."

As you look at what's required in operating, payments is a business where you make literally pennies on a per transaction basis. You have to have an enormous number of them to actually be able to operate with any modicum of profitability. I mean, it's fairly obvious that it's a fixed cost business and then you need to get enough business flowing through you to make the economics work.

I think what's interesting is, as things have moved online, the fixed costs have gone way up compared to what was needed to run a domestic-only payments business.

Example: The podcast premium model, where you get access to exclusive content only available on the paid product.

As we think about that business, and again, what just Stripe has to do to unlock the payment system for that...we have engineers who are based in Singapore. And they have built custom integrations with the local Malaysian bank transfer system. They actually are now friends with the engineers at the local Malaysian bank transfer system, because it's still a work in flight itself. They're kind of working with them on some of the functionality that's needed. That way, if you have someone or a listener who's from Malaysia, they can pay the way that they're used to doing so, not just with a credit card, but with a bank account in Malaysia.

Stripe has engineers in Ireland who are similarly… The French local card, Switch is actually different to Visa MasterCard. And you need to be able to support that, to be able to properly serve French customers.

We've just been shocked, the degree to which… If you want to be able to reach every global customer, there really are very large economies of scale with that. Now, all that said, I think where it gets interesting is, when you have technology shifts that happen, right. Again, Microsoft had very nice lock in and network effects with its operating systems business, thus helped us while that was the dominant paradigm.

I think when the paradigm changes, that's when speed is of the essence. And speed is a really defensible trait in companies. I think the common narrative is just that it's a fairly simple regression with size, where small startups are fast and large companies are slow. I don't think that's necessarily the case at all, where…

Facebook is remarkable at executing quickly from a technology point of view. For example, they executed very quickly and built a highly scalable live video product.

Google does a good of bringing to bear all the in house technology they've built. That is oftentimes quite a bit better than maybe open source alternatives that are available. They use that to drive product development.

What we think about for Stripe, as we grow, is that you cannot let your guard down.

You have to constantly be testing yourself, checking yourself, like the military runs exercises. You need to be confident that you can really quickly roll out products.

One is, there's a business need to actually be able to do this. And oftentimes in certain parts of our business, we are competing with startups.

The second is that, I think people will find it much more enjoyable to work as a company that's moving quickly rather than working for IBM. And so we really think about speed as a quality of life, improvement of working with Stripe.

The great philosopher, Patrick McKenzie (@patio11), said: "Stripe is a celebration of the written word, which happens to be incorporated in the state of Delaware."

I'm not sure I go quite as far as Patrick, but it is a pretty important part of the culture. We're always shocked that the returns to writing well are really high. And it feels like the world hasn't fully internalized that.

When you have a 3000 person global company like Stripe, you're going to need to do lots of asynchronous communication. Obviously not everything is going to the entire company, but generally documents have many more readers than they have writers. It behooves you to put time into your communication. We have always been shocked to the degree that people understimate and underemphasize crisp, written communication.

We try to do that both internally in artifacts and externally.

We often talk about this, on say the marketing side, where one of our principles when it comes to the marketing at Stripe is that we speak up to the reader. You're not trying to dumb things down for someone who isn't familiar with something like this. You are speaking to an intelligent person who is busy, but knows what they're talking about, knows what they're doing. And it's your job to kind of help educate them on this. We certainly made that a big part of the culture early on. I think like any culture, it's self perpetuating. I think people for whom that's important tend to be drawn to it.

The classic one is still – how would you explain this to your friend in a bar? People somehow adopt a voice that is full of complex filler or corporate jargon when writing in a corporate environment. But if you ask them, "What does Stripe Radar actually do?" Oh, "It prevents fraud for businesses." Why don't you just say that? I found that as a really useful device.

Another device I tend to use is: I get people to read something and then tell me everything they can remember from it and then basically delete everything they can't remember. I mean, not literally, but I think people… Most things tend to be too long and not edited tightly enough. I mean, there's plenty more, but I find those are some of the tactics I keep coming back to.

We talk a lot about rigor — this shows up, I think in different places, in different formats, but a lot of what we're doing, there's no playbook for it. It's interesting...as you look at any business: what are the parts of their business where they can just take the best practice from everywhere else vs. a lot of the parts of the business where you genuinely have to invent and generally be novel?

In our case, certainly the API for Stripe, a huge amount of the internal payments engine is new and requires invention. As you go work on that, there's probably a bunch of existing ways that it happens… beliefs people have about us at that may or may not be true and may or may not serve you.

What we've tried to get is having people – five why's, the problems that they're working on. Really get down to the root cause. From a product development point of view, that's proved really useful for getting the right products out there.

When we started Stripe, we were told many times that it was not possible to offer instant setup for a product like this. Part of the value prop for Stripe is that you can come along in five minutes, sign up for a Stripe account and can get up and running.

Many people within the banking industry and payments industry told us, for compliance, checks and underwriting and AML, and various scary sounding acronyms, it was just simply not possible.

I think the rigor piece comes from continuously chipping away at: Why is that the case? What's the underlying reason? Where is this written down? But kind of constantly drill bitting. And that's something that we broadly try to teach from a product development perspective with Stripe, because… I think that sort of rigorous product development methodology is how you get original thought in a product development organization.

I think it's certainly useful to study investing because it is the act of allocating capital to the most productive uses. That is what the stock market does. I think that's what the American stock market does a remarkably good job of doing, is this incredibly efficient engine for allocating capital to the most productive uses. When you're running a small company, that's not really what you're doing.

There are case studies of eight different CEOs that did remarkable jobs as capital allocators.

I remember the very first time I read that book, it didn't really resonate. And the reason why is because, "Stripe's a small company and we're doing one thing. I don't get this book, we're just working on our business."

As the business grows, you have multiple different investment opportunities. It becomes like investing where again, the name of the game is 'Allocating scarce resources.'

In the public markets, that's capital. Internally, a company tends to be a little different. Maybe it's scarce engineering resources or scarce management bandwidth towards the most productive use. And I think when companies… The companies that are really successful are the ones that internalize this lesson and operationalize it.

I think they are probably the tech company that are closest to being pure capital allocators in how they work, where they have a very strict and intellectually rigorous framework for funding new bets and allowing people to try out new things. The initiatives that are working, they really pour gas on. Alexa has thousands or maybe tens of thousands of people working on it these days. This is one of the things that works. The initiatives that don't work, just get resources withdrawn from them, or eventually get shut down or something like that.

As a company grows, the outcome for the company really depends on how good a job they do, at pushing resources towards the most productive use of them. I've often found that investors, when giving advice to operating companies have a really good knack for saying intelligent-ish sounding things that are completely not actionable. An example of this is, an investor at a board meeting, who's like, "Well, you really want a deep moat around your business." And you're like, "That's great. We're just trying to run the business here. How do I do that?"

I think placing resources towards the area of highest future return is the framework for what all businesses are trying to do.

It's actually not that actionable when you think about it for two reasons. When you tend to have competing time horizons, should I be looking for a return over one year or over 10 years from now?

There's no great answer to that. And I mean, it's hard to know without the benefit of hindsight, what the best return is going to be, cause you're dealing with so much uncertainty. However, I find that a useful framework for thinking about Stripe, because we are really fortunate to have a huge number of potential areas in which we can expand.

One area in which we're expanding is internationally...just last week we launched Stripe in Romania and Bulgaria and a handful of other new countries. We continue to invest resources in making Stripe available to businesses in more countries.

We also have all these interesting software products that we're developing, that solve additional problems for businesses. We have our Stripe Radar for fraud prevention, and we recently started lending back to businesses on Stripe — so that's another potential use of resource. You are making these essentially capital allocation decisions, which is, should the marginal team work on fraud prevention or lending or international expansion? And it starts to give you a framework for thinking about that.

At Stripe, we think a lot of this stuff can be studied — that's not to say that the experience isn't useful. It absolutely is. However, as we develop our frameworks for thinking about these things, we try to at least come at them from an informed perspective.

Example: How do you do company planning? How you plan what the company will do in 2020 or something like that?

This is the bane of our existence. I think it's the bane of every larger company's existence. It is just a bear of a process. We continue to tweak it to try to make it less of a bear.

One of the things we did when we were putting this process in place is we went out and we studied, how do Apple do it? How do Google do it? How did Amazon do it? How do lots of other companies that have been in this before do it? And what can we learn from those?

I think an interesting thing that's happening in the technology industry is...since there's so many employees who've been at different companies or things like that, there is almost a shared playbook, that's being built on how we work. I know the companies wouldn't like to hear it described that way. They're like, "Wait a second. That's our IP" — but that's basically what's happening. There's a collaborative playbook that's being built in Silicon Valley — which is kind of the set of best practices for how we do things.

Google imported lots of things… Google is famous for OKRs. Google didn't invent OKRs, they took them from Intel. And there's lots and lots of other. Facebook really built a lot of its advertising engine

based on the prior art that Google had established.

I think if you are operating a technology business, you would be mad not to study all the companies that have come before you. That's not to say you just get fork their process and run like they do — but you should study them, you see what you like, you see what they don't, you see this kind of trade offs they made for their business. Identify what is the right set of trade offs for your business, and you'll grow from there.

We certainly tried to come from a place of being informed.

New things at Stripe are almost always started by really tiny teams. any announcements that you've seen from Stripe, probably it was a team of less than 10 people when it launched. It was certainly a team of less than 10 people, and often less than five people in that kind of core part of its gestation and its development.

I think that is really important. It's often easier to get fast work done with a small team versus a large team. The classic big company mistake is to throw 300 people at a problem and have them executing for three years before getting any market feedback.

In the case of the original version of Stripe, Patrick and I built the first version of Stripe and we had the first customer using it within three months of writing the first line of code. That was really helpful because then we had actual validation, customer feedback, know what's useful, know what's not. You're not working on the wrong things.

Some people call this, the Lean methodology. Lean is little bit different in a bunch of ways, but I do agree with the basic spirit of it — when launching new things, you really need to start them small and make them earn their way. Make them respond to customer feedback and see if they actually work. This ties into the resource allocation, capital allocation framework that we were talking about a little bit earlier.

The other thing worth calling out is that most markets are not like the United States. And honestly, I think one thing that's been pretty helpful for us is… I'm obviously, as you can hear not American and Patrick is not.

Stripe has lots of people who are not from the United States, working in United States. And now we have lots of global offices around the world. There really is a very global diverse perspective within the building. As you think about engineering products, Stripe as a global economic infrastructure provider, it's really important to have those perspectives because the product that succeeds in the United States is actually going to be very different from the product that succeeds, I mean, even in the UK. Nevermind Japan, nevermind India. Commerce is very culturally nuanced and a business in Indonesia is not going to buy from an American company who thinks that they can swing in without taking into account the local considerations. That's been really important in our international expansion actually working.

There are two ways that product development happens with Stripe. Tops-down and bottoms-up.

When you say, "how do we decide what to let people at Stripe explore?" I mean, there's a ton of exploration that's going on, but no mandate has come and there isn't any kind of sign off process that's been established for us.

Recently, the team that works on credit cards with Stripe — remember when I said, this really is a scale business, and you can just go arbitrarily deep in improving the product in all sorts of incredibly detailed ways that would never be worthwhile for any individual business. An example of this that was very bottoms up was the team that manages our integrations with Visa...noticed these occasional blips in service coverage, where it would be interrupted. Our team realized was that it was a fail over of hardware or switchover of hardware that was happening on their end, that as a result, a few transactions would get dropped.

No one would notice this, no customers would even notice this cause it was such a temporary blip, but it was bothering them. This team at Stripe went and they found a way to be able to predict when one of those fail overs was going to happen and anticipations on switch over to the new hardware before it happened, such that customers wouldn't see any interruption. You got a tiny increase in the number of payments that will go through successfully for the business using Stripe, no business could ever kind of afford to do this optimization themselves.

In aggregate, when you add up all of these optimizations, they're really meaningful. That's an example of the kind of thing that's really neat and happens in a bottom up way.

I think the top down side of it comes from what is the strategy of the company. The eyes of technology founders are often bigger than their bellies. There's a huge number of enticing investment areas, and definitely more than they have resources to actually be able to go after.

We have to be fairly disciplined on. If you think about these two layers of how the Stripe business works, one is this really powerful global payments and treasury network that makes it easy to move money anywhere around the world (and the other is the software business). We'll be fairly opinionated in a top down way on part of the most important initiatives.

For example, we have to make it easy for businesses in around Europe and Southeast Asia. Those are two of our priority markets. We're going to make it easy for those businesses to accept money. We'll do that in a fairly top down way, and then similarly for the software business.

You end up marrying together those tops down and bottoms up initiatives, where you provide high level guidance on how much effort we'll be spending on international expansion versus software to make the businesses' life easier and kind of take some of the administration off their plates, but then what actually gets worked on within those constraints will often be determined by the teams.

It depends a little bit on what aspect of technology you're interested in. Stripe sells to businesses, and so I am probably indexed more on boring B2B behind the scenes, content then maybe someone who is starting a consumer company.

I think the history of Salesforce is quite interesting to look at, similarly the history of Oracle is interesting to look at.

It has this really interesting format that I've never seen the book, which is the guy got lots of access to Larry Ellison while writing it, but the condition for getting that access was that Larry Ellison got a right of reply within the book.

It's kind of like in newspapers, they can have a letter to the editor or something — so you literally see him describing some situation that happens and then a footnote at the bottom that the footnote is like Larry Ellison saying, "this guy got it completely wrong, he was an idiot, I was going to fire him!" It's super interesting but anyway, I probably index a little bit more on that.

There's obviously tons of content on Google, Facebook, all the super prominent mainstream companies. I think the interesting things to think about are there's a lot of content out there that's essentially propaganda by these companies or "the blessed accounts". It's not like there aren't interesting facts there, but they're probably not as interesting as the thing is the company really wished you didn't read because they go a little bit off script as the official accounts. Those can be a little bit harder to find.

The other one is there's a number of technology transitions that are maybe a bit understudied compared to all the prominent major internet businesses these days. Perhaps, the two to highlight are the telco bubble of late nineties, early two thousands. People don't really remember this, but by market cap, the 2000 bubble was really a Telco bubble and not an internet bubble in that the run-up of the WorldCom stock's, it was much larger just in terms of total size than all the internet companies. There's some good reading to be done on what happened with that. It really drove a lot, you basically had all this investments and optimism around the growth of the internet.

I think it was WorldCom kept going around with this talking point of the internet is doubling every four months and it felt like it was going to the moon and bandwidth and things like this. That ended up with this incredible over supply of internet capacity, fiber especially, that then made things really cheap for when everything washed out in 2001, 2002, and as a result, it was a platform on which everything else could build during that period following, so that's one that's probably interesting to study.

I was pretty interested in the cable companies that emerged in the late eighties, early nineties. This is a particularly American phenomenon. I don't think there was really quite as much of a scramble in other companies, but cable, this new technology, it was a new technology platform, new technology paradigm, laying coax cable to all these towns across America. You had way more television bandwidth, number of channels possible, than previously was the case.

When you read it, it actually rhymes a lot with some of the technology shifts that we see. In our discussion of serial acquirers, we left out John Malone, who's going to be one of the most successful serial acquirers of all time with Liberty media, where they basically continue to roll up small cable companies and build a very large company out of acquiring kind of small little local cable companies. The other thing that was interesting is it was one of the original kind of new technology company from out of town versus local municipalities.

It was funny as I was reading this book, they describe how one of the cable companies, I can't remember who, getting into spat with a local Colorado town and changing the programming to just be "call your mayor and tell him you want cable in your town." This is exactly like the tactics Uber might've used, during that period when they were getting into fights with local cities. And again, there's a lot of history repeating itself. Those are maybe two of the, the histories that spring to mind.

You really have to contrast where we are with where we were 10 or 15 years ago in that it really is amazing that so much of that, I mean, Stripe is obviously part of this, but Stripe is absolutely not all of this, the infrastructure that you have available on tap at a very affordable price so that you can reach a global audience, you mentioned Toby from Shopify, Shopify obviously a very big part of that. I mean, the tools for software development in GitHub and all the deployment hosting platforms, the cloud platforms seems like this is a radically different environment than, than we were in 10 or 15 years ago.

I'm 29, but you know, I'm already at the stage where I'm talking about, when I started in the technology it was much tougher. There was much less on demand, but I'm not that old.

It still feels to me like the way we build and deploy software now is not what it's going to be 10 years from now, that's going to change.

In particular, we've actually regressed a little bit where it has gotten harder to build a consumer startup than it was 10 years ago, I think because 10 years ago you were just build on the web. At that time, 10 years ago, there was WordPress you could use some pretty simple frameworks to get a product out there broadly to people on the web.

Now, if you are starting a consumer company, you probably need an iPhone app, you need an Android app, and maybe some other platforms or mobile platforms, you need to take into account the state of the art for web has evolved and maybe the expectations for real time capabilities of your application. Those standards are higher.

As a result, I think just launching a consumer service, the bar for that is a little bit higher than it was. I think you've seen this reflected in, it's a little bit harder to like a new consumer startup than it was before. I think vast infrastructure is not where it's going to be 10 years from now, so you have a lot of challenges there.

The other thing is that, obviously, as much more of the internet becomes regulated, I think we haven't fully caught up with that in terms of making it easy for the companies that are regulated. There's not all the infrastructure we need there.

Like one area of business that we've just started dabbling in is identity verification, because there are so many different parts of the internet where you need to verify someone's identity. If you're going to pay out money to someone, that's the one that's fairly close to Stripe's business, then you need to verify people's ID to comply with all the AML rules. But even, if you think about it, if you're selling any kind of an age restricted product, these check their ID so that you can be confident of their age. That's something that historically has been really, really hard. I mean, it kind of reminds us of payments before we started Stripe. And so we've started playing in that space again to make it easy for if you're doing anything that involves verifying someone's identity, it should be easy to provide that.

Let's imagine we were hired as the product manager for accounting we're just hired at the agency that manages GAAP and accounting principles.

Like any good product manager we start with: What are the jobs to be done? Who's our target customer or target persona? It's interesting to think about. We're actually trying to do a number of different jobs with accounting.

We're trying to figure out how much profit we earn so we know how much tax we have to pay.

We're also trying to help the business run itself.

We're trying to provide a view of the business to managers so that we can determine whether we need to invest in new machinery to be more efficient or something like that.

We're also trying to solve for the needs of creditors, where people want to be able to evaluate the business and understand will it have enough money to pay off its debt.

And then we're also separately, importantly, trying to solve for the needs of equity holders, where they're trying to understand what are the long term cash flows for this business going to be?

And the reason I bring that up is people think of accounting and GAAP as you know, these fundamentals that are etched into stone tablets. Accounting standards are invented by us humans to give us a view of a business and they're up to us to choose. They're generally in kind of long boring committees, but we humans choose how we look at businesses. I think we should be able to reason about what's a better way, what's a worse way to look at businesses.

That's why I have absolutely no patience for the crowd that's all this winging about non-GAAP metrics, because they're a relatively arbitrarily chosen and constantly tweaked set of standards for looking at a business. If they're constantly tweaked, presumably you would expect that they can be improved upon. One of the areas in which I think the standard way we look at businesses is just completely wrong, is in reasoning about essentially researching development and intangible capital.

Capital obviously has really moved over the past hundred years away from heavy machines that you'll really hurt your foot if you drop one on them at, to intellectual capital and intangible capital. Traditionally if you read a balance sheet and a company has a bunch of stuff, it has a bunch of assets on its balance sheet, what would that company have? Well if you're a cafe, maybe your assets are the coffee machine, cause you bought a really expensive coffee machine. These days with technology businesses, what are the capital within the business? One of the assets that the business have, it's probably software that has been developed in house by the business, at Google it is the search engine that's it.

Now for 20 years, engineers have laboriously worked on to make goods. In the case of Stripe, it is the payments engine along with Stripe Radar, the fraud detection engine, along with lots of process knowledge on how we all work together, again...how we make sure that the maximum number of payments go through online and we have all the hookups to various other places.

However, if the capital has gone from something really tangible, an espresso machine, first, it doesn't change in value that much you can reason about the value really easily. And why can you reason about the value really easily? It doesn't change that much over time. There's a clear market for it. You could go out and sell this espresso machine, you paid something for it. We just bought this espresso machine. One of the accounting principles is you just carry things as costs.

It's really easy to reason about the value of tangible capital like that espresso machine. It's really hard to reason about the value of intangible capital, like Stripe Radar, how does you value the system that we built? I think the reason this gets interesting is because you and I might very reasonably want to think about what is the profitability of a business after you strip out all the investment in future growth, because as you look at the technology sector, the entirety of the technology sector, one of the things that kind of unifies technology companies is that they don't tend to produce kind of huge amounts of cash flows, certainly until later in their maturity, companies that are in their growth phase, either pre-public companies or recently public companies tend to be mostly reinvesting in growth.

One question is: "How much of this is a profitable underlying business vs. how much of it is investment in kind of future systems?"

The best answer that people tend to have is that they split out different lines of business and kind of categorize them as cash flowing or growth. If you're looking at Amazon, you might say, the retail business produces money, and then we plow this back into AWS as an investment area, and so we'll just kind of separate out AWS and the retail business, and we'll look at the profitability of each and we'll create AWS as an investment area. But of course that's not quite right...the retail business it's fractal, the retail business itself, as you look at it, they are expanding to new lines. They are expanding to a new geographies and things like that. And so the retail business itself is composed of a cashflow in core business and then new expansion areas that they're plowing that money into.

As we look at how accounting works for this, it's really basic. All you have is companies that are spending lots of money on operations, engineering salaries, operation salaries, lawyer salaries, kind of the general Op-Ex, and no real intelligent view on what is the capital that we're developing — What is the multi-year value that we're getting from this system that we're building vs. what is the actual ongoing cost of operating the system?

That is something that we spent a lot of time at Stripe getting good internal management views into is:

As a system by system, line by line level, how much are we investing in the future potential of this system versus what is the existing profitability of the system?

I'm always surprised at how unhelpful most public companies are at answering the core question for a technology business, which is: how much are you paying to operate this business, versus how much are you investing in a long lived technology advantage?

Sadly, we don't even have the metrics that we're fully happy with internally yet. I think it's interesting that I have not seen a company publicly, in how they kind of talk about things, where I'm like, "Oh, that's clearly the answer and that's how we should do that."

I think what you see is a number of proxies that are overly generous to the companies where they say — we're going to count all of this spend as R&D with a long lived payoff.

I thought it was interesting people talk about the concept Buffett introduced in his '86 letter of owner earnings. And the more interesting thing about that definition for me was splitting out the two forms of capex.

Capex spend that is needed to keep same competitive position vs. Capex required to expand.

We haven't fully chased it through, but I think that's a really interesting distinction because oftentimes you can have technology companies that really spend a lot of money to stay in place.

Example: Buffett obviously always talks about the example of the textile mill that Berkshire Hathaway got its start with and just being such an incredibly terrible business because you're spending all this capex just to tread water, just to stay in place.

I think similarly it's important for companies to be honest with themselves and ask this question:

Is this spend just the cost of doing business, the cost of operating our business, and we are maintaining our competitive position OR are we expanding in some way? Are we growing our share of market? Are we expanding to a new country? Are we developing a new product that will monetize separately?

It's probably worth you being honest with yourself on the answer to that question.

Payments....No, I'm still learning though.

I talked about this phenomenon of the shared playbooks that Silicon Valley is developing. I really think this is what's going on, and that's one of the things that is probably under discussed, the notion that there is a common playbook that goes from company to company in people's heads.

Maybe one of the most mature ones is the B2B sales playbook. I mean, there is like really a set of best practices there, and Silicon Valley is on version 27 of the playbook and it's always being updated, but people took the playbook from Oracle and applied to Salesforce with improvements. And now all of the up and coming B2B startups today are modifying that and making improvements, but it really is a shared playbook.

As we look at engineering, it is interesting to me, one kind of related to the measurement question we were just talking about, it is frightfully hard to measure engineering. Within sales, there is measurability down to the level of the individual person and even down to the level of month by month on the individual person.

You've probably seen these curves, but companies talk about time to productivity curves with salespeople, where it's actually a measure of a product complexity that maybe in a B2B SaaS, a standard time to productivity curve would be. People are asked more or less their terminal productivity within six to nine months, that would be relatively standard. But that is the level of granularity you have on a domain like sales.

Then meanwhile, you look at the domain of software engineering. Back when I wrote the first version of Stripe, this is my first love, and the domain where I spend a huge amount of my time, but it's incredible to me how hard it is to measure the outputs of software engineering. I mean, you can look at the goals that we set out to accomplish, and how good a job we did at accomplishing them. But if you're trying to put any kind of overarching metrics to compare and contrast the productivity of different segments, that's something that we are really interested in, that we have not made that much progress on.

At Stripe, we probably do a lot more surveying of engineers than other companies, and it's not the best system metrics, but I think it's better than nothing. And it's kind of analogous to, you look at how all the media companies work or any kind of advertising company, lots and lots of consumer surveying. To get brand awareness and TV ratings and things like that, so that's how all those industries run. Similarly, with Stripe, if you're an engineer with Stripe, you spend a lot of time being surveyed, because that way we get a sense for:

"Okay, how productive are you at this domain versus where you were six months ago?"

"Now, how productive are you in this domain versus this other domain where you used to work?"

That can give us a sense for when we're making overall a macro developer productivity improvements, where we spend our effort and stuff like that. I would say something we probably spend a lot of time compared to other companies thinking about developer productivity and getting scientific about developer productivity...and yet I still think we're really early in our journey compared to where we could be.

The answer to how short staffed we are on engineers is still clearly loads...

Stripe is an investor in a company called Lambda school, and you're probably seeing what they do.

It's pretty nifty. Software engineering is such a highly compensated field, thus people who might be working some other job that want to make the jump into software engineering. Lambda School helps them via remote night courses over the course of, I think it's nine months, get trained up in a software with effectively a software engineering degree, and then move into the field.

The fact that they have had such success, I think speaks to the fact that we're still really short of software engineers. And again, that's our experience with Stripe doing lots of hiring in that field. I think one of the really exciting trends for me that we touched on earlier, is more and more software engineering moving outside the Bay Area. Like when I go back to Ireland, it's crazy, it's night and day, the difference in the Irish technology industry and technology scene versus when I left back in, gosh, what was it? 2009. And so, that's certainly the case.

John's Thoughts on No-code

I don't think no-code is fully a panacea, because even when you're doing no-code, you're still reasoning about the relations between different objects and data flows and things like that. I think when you're doing, when you're building an app with Zapier or something like that, you're still doing a form of engineering, you're just not necessarily writing codes. Hopefully that's something that can give leverage to people without necessarily needing to have to spend quite as much time in it.

This is not new by the way, if you look at Excel, no one calls as a no-code tool, but Excel, I think is one of the most underappreciated programming environments in the world. And the number of Excel programmers versus people using how we think of as more traditional languages is really something to behold.

I actually think lots of features of Excel that make it a really nice programming environment and really nice to learn in, where the fact that it's continuously executed means that unlike you running your code and it doesn't work, and you've got some error, that's hard to comprehend.

Instead, you have a code that just continuously executed in the form of the sheets you see in front of you. And similarly the fact that its individual cells, and you kind of lay out the data spatial… Or the program spatially, where the code and the data is interspersed together, and no one part of it can get too big and diffuse. Anyway, I think there are all of these ways in which, anyone who's developing a no-code or new software paradigm should look at Excel because so many people have managed to essentially learn how to do some light programming from looking at other people's models and other people's workbooks and kind of emulating what they see.

In terms of the direct question, I don't think no-code will obviate the need for software programmers, I would hope that it can make many more people able to participate in software creation and kind of smooth the on ramp — which is a really sharp, vertical one right now.

I still find technology one of the most interesting places to look, because what I find so exciting about technology is from a business point of view, it's positive-sum, right?

In many other businesses, there's a fixed amount of supply in this industry and we're getting really good price discipline.

As you look at something like real estate, in many kinds of parts of the world, barriers to building mean that part of what makes it a good business is the fact that there's a fixed number of assets that can be monetized.

In the case of San Francisco, a huge amount of the kind of wealth creation has flowed directly to landlords in San Francisco, because it's so hard for new construction to take place there.

I think that's actually true for a lot other businesses.

Banking is another classic one where there is not a giant number of new banks in the United States. And so instead what we've seen is a lot of consolidation of share in the industry.

Airline's another a classic example.

What I find so exciting about technology by contrast is it is not a fixed pie that everyone's looking to find creative ways to redo the capital stack, or do a roll up or something like that. Instead we can just create all sorts of new technology wealth and all sorts of new technology value.

Someone will come along and do something super interesting on payments, I'm like, "Whoa, that's awesome!" because it's not just taking share away from Stripe.

The increasing globalization that's been driven by COVID. It was already happening anyway, but COVID expedited it.

We have engineers in Dublin, Singapore, Mexico City, etc.

COVID drives it even further, but the fact that if you are kids in one of these countries, who grows up interested in technology, and previously you could look over the fence at the game that everyone else was playing, but not participate. Now you get to really meaningfully participate in the entire economy. That's exciting.

Patrick and I, and it was actually a little contemporaneous with Stripe.

We had a set of iPhone apps for the first iPhone, from the very start. You probably remember there was that one year between '07 and '08 when there was no App Store, and so there were iPhone apps, they're like jailbroken apps.

Patrick and I ran a business that was offline Wikipedia for your iPhone.

We were selling it in the App Store and we were making just absurd amounts of money for any kid at the time. We would look at the App Store, which gives you these reports of where people are buying the app, and you have sales happening in Saudi Arabia and Mexico, and all these places buying your app.

These two Irish hooligans running a multinational business, I mean, I think that was the first time for me where it was really striking to feel that.

I mean, we've been lucky to have incredible board members.

They're all different Pokemon, with different strengths and weaknesses, attacks, etc.

I think it's important for the board member to know what they are providing, and for the companies to know what they should be getting from the board member.

First and foremost, obviously it is a governance role. You are managing, the management team.

Buffett called this out in his letter this year, complaining about the cozy relationship between board members and management at company. I think that is an important aspect of it, which is, board members need to realize that they work for the shareholders, and they are the boss of the management and not the other way around.

I think ones that internalized that relationship, tend to be the most effective. That's generally pretty friendly because oftentimes the best way to help the shareholders is to help management, but there can be no confusion about that. There's some specific rules that exist within the boards, the audit committee, the compensation committee, things like that, where the board member will actually be put to work inside the company. I know it'll be a relatively high workload task, so that's one set of responsibilities.

Depending on the experience the board member has, generally you have people who are much more experienced at a certain set of things, and they're able to contribute that experience to the company and to people who maybe are much less experienced in that.

We're hiring a CFO right now, and Jonathan Chadwick, who's on our board and previously with the CFO of VMware and Skype and various places like this, has been extraordinary helpful to us as we run that search. He's actually done the role at a public company, and that's where he's much more experienced in the domain than we are.

We also talked about with venture capital that you're getting a bundle of experience that the partner can bring.

Mike Moritz from Sequoia Capital invested in Stripe in 2010 and joined our board in 2011. It's been really fabulous from a company strategy and from a hiring perspective to have that experience. Which is a totally different set of experience to Jonathan's experience that we just mentioned, it's been really helpful to have that as we've built out the company.

When you're building your board, I think you're looking for a set of experiences that will be really valuable to the company, both in building the company and in occupying that governances — who are the people that you want ultimately accountable to the shareholders.

Yeah, I was reflecting on this...

I grew up in Ireland, I spent all my years there until I moved out to the United States for college.

I feel very culturally Irish, and there's something about acts of kindness I've experienced with Irish people, that's maybe different to that I've experienced with Americans. There's something about the culture there, just to give you two examples:

When first moving out to San Francisco, the person we stayed with was an Irish guy. We got to know him because Patrick had a going away part at MIT, and there was an Irish guy who came to the going away party. He didn't know that well, but he said: "Oh, sure. You're going to San Francisco, you can stay with my brother."

We had… I mean, barely met the guy, never met his brother, but this guy Lorcan, very Irish name, was willing to let us stay at his place for a week. And so we got there and it wasn't like one of his many guest rooms.

We get there and it's a studio apartment, and he's like, "Okay, you can take the bedroom," and he sleeps on the couch.

That was for me, kind of a very Irish act of kindness when first moving here.

Similarly, when I was in secondary school, we just had this incredibly understanding principal, where we always had various pursuits and weird things going on. We know we were serious about academia, but we were taking maybe an unconventional course or unconventional path.

This principal, a guy called Martin Wallace who's since passed away sadly, was always incredibly understanding that we had a path in mind that we wanted to take, and it might not be fully aligned with all the rules that were written down that they had for running a secondary school.

There was a half year of high school that I more or less skipped, when we were running a previous technology company prior to Stripe. He just kind of made it work, despite the fact that all their attendance requirements and things like that, he was willing to enable that because he felt like it was a good thing, or in the case of Patrick, Patrick just decided to skip the Irish end of school exams and do the British ones as well, because you could shortcut, you can go to college earlier.

This kind of extremely benevolent oversight of us and flexibility and understanding in a very unassuming and quiet way, where it never really came up as a big thing. I want to enable you on the path that you want to be on, even if it makes my life hard.

I think a lot of the acts of kindness that people have done for me and especially the Irish themed ones. Those are ones that are much bigger steps than certainly you would expect from someone in that position delivered really unassumingly.

Oh, that's so much pressure. I mean, the youngsters, there's so much to say...

Patrick actually wrote up a guide to this, it's actually pretty good that he put on his website of advice for youngsters.

I think for me, it is being willing to go down the rabbit hole. Whatever your particular rabbit hole is, and that I think all the institutions you are probably part of want to help you, want to bring you back on the normal track, as it were.

One of the things that was remarkable about the principal I mentioned before, Martin Wallace, was that he was incredibly supportive in us, wandering in all our weird and wacky ways. I'm really interested in how you help people wander and go down those rabbit holes.

Stripe invested in a company called Pioneer, which is helping people go further down the rabbit holes, rather than trying to bring them back on track.