



Oral History of Steve Chen, part 2 of 2

Interviewed by:
Marguerite Gong Hancock
Marc Weber

Recorded May 16, 2019
Mountain View, CA

CHM Reference number: X8933.2019

© 2019 Computer History Museum

Hancock: All right. Today is May 16th, 2019. Thanks, Steve Chen, for coming to continue your oral history. I'm Marguerite Hancock with Mark Weber interviewing you on behalf of the Computer History Museum.

Chen: Great.

Hancock: We had such a great conversation last time. We'd like to continue where we left off, and we were just talking about pitching to Sequoia--

Chen: Right.

Hancock: And there was a lot of strong interest in you and you were thinking about who you would like to work with as an investor. And I had asked you whether you knew about, or if you still had your pitch deck and you said you knew it was out there somewhere, so we found it.

Chen: Yeah.

Hancock: And for people really trying to understand the essence of YouTube.

Chen: Yeah, yeah.

Hancock: I would like to ask you if you would be willing to walk through those initial pages and tell us what you were thinking about as you made the pitch.

Chen: Sure.

Hancock: And then also any comments now in retrospect. Has your vision changed?

Chen: Right.

Hancock: Reflecting back, would you have pitched it any differently? You know and I'll just hand this if you want to refer to it along the way.

Chen: Well, it was great that you found this because this kind of a Flashback to what is it, 14 years ago? As I was reading this last night and the email attachment, just about every page was almost a chapter in a new novel. I <laughs> don't remember writing this or being responsible for it, but looking through it, it makes a lot of sense. However, I think one, I do remember that this was put together in 48 hours, right? We had been working on this, on YouTube, building it, sustaining it, launching it, and then scaling it virally for months. This took up less than half a percent of that time to actually create it. And I think that one thing that we constantly see now as a kind of an evolution of Silicon Valley and maybe the ease in which people will be doing from the angel investment side of things to VCs. I think they're all a little bit more relaxed than the rest of the world when it comes to writing a check.

I think the difference there is in 2005, we had at the end of this deck, the metrics. It's not to sound arrogant, but when we went into this presentation, even with Sequoia Capital, even with some of the top VCs where they only say yes to just a tiny sliver of the number of people that are actually presenting to them in their conference rooms, we just knew that with these decks, there was the first part of this high level purpose. It was one sentence about what the company is trying to do, the solutions that it's trying to provide to some problem.

And maybe just like patents you try to be as general as possible <laughs> and then see what comes out of that. And then, you know, there's a little bit more details on what exactly the definition of that problem is that you're trying to solve in the solution. And this is mostly just a little bit of photos and a little bit of bullet point text. The reason why we only spent two days on it was that we were so convinced that there was no way that we were going to leave that room without getting a check. And it was as you flip through the last few pages of the deck, it's just the numbers and the metrics. Specifically it was many times those numbers were doubling every week, every two weeks, so the number of views would go from 100. Early on, I think we talked about this last time, it's easy to double, when you're getting 100 views to 200 views--

Hancock: Yeah, easy.

Chen: Although in terms of pure absolute numbers, although that sounds easy, it is still an indicator that the application, the software is catching on. You know, maybe not at the 1 to 2, 2 to 4, but as it gets to even 500 views to 1,000 views, it does mean that over a period of seven days, the daily number of people grew from 500 views, 600 views, 700 views. And of course, you hope that that keeps up. But if the actual engineering side of things can sustain it, there's no reason that the actual app itself won't be able to continue that level of growth.

Looking at this deck, I remember the better portion of it was just talking about what we were trying to do with YouTube. But once you get to the thick of it, it was the metrics and it was talking about when we launched in mid-June and starting from then until looking at this. So, the last numbers here are about late September. During those three months, it was showing that for the key metrics we look at the number of videos uploaded, most importantly, the number times that all the videos are viewed on the site on a daily basis. And then just the number of registered users. Although the registered users was not a key metric early on, because there's no incentive to register on YouTube unless you were going to upload a video, you just watch videos and we were going to do recommendations whether you were registered or not.

Just those three key pages about the metrics was enough to say that there's something here. I think that I alluded to this before, too, was that YouTube is different in that it was basically fighting itself. It was challenging itself to say, "Can you survive?" There was no other competitor in the game. It was whether the internet could serve as the platform medium to be able to serve streaming videos at an economically feasible rate. So, I think that's different from maybe the typical deck that's sent now where there's a lot of going back and forth and many iterations from drafts to the final copy. I know we were having lunch and we were still making corrections, spelling mistakes and whatnot right before we actually took off to go to Sequoia for the presentation. But you know, there were a few interested parties there, and we were just

confident that the metrics were going to be convincing enough regardless of how much professional effort we put into the deck itself.

Hancock: So, the conversation once you were there was with Pierre, and was he there for the original? Or how did it work?

Chen: The way that it works is that you--

Hancock: Take us back to that sort of pitch. How did that conversation go?

Chen: So, the pitch generally happens with a few of the general partners there and then if you get the first stamp of approval, you go back to whether it's one, two, three more meetings to do the same presentation to be able to make sure that you are on site to be able to answer any of the questions and to present to all the partners. This makes it not just one presentation that you have to be prepared for to answer the Q&A, but multiple ones. I think that it speaks well for Sequoia and other VCs to make sure that all of the partners are in agreement rather than having maybe internal strife between certain partners believing and certain partners don't. And I think the wide variation between different venture capital is about how they approve or disapprove of the deals that they want to commit to.

Hancock: I asked last time, did you celebrate and I think you said not so much this part, <laughs> right? You came away with not an insignificant amount of funding commitment, right?

Chen: Right, Right. Well, in 2005 era, certainly. Some of the funding amounts these days are two orders of magnitude more than what we saw back then. But I think not just the amount. I think that's unfair to say. I think that just general market, it's not so much about small length of time during this private phase and then it has to grow quickly for potential acquisitions of the public. I think that the total timeline for YouTube was a year and a half between fundraising and acquisition, whereas now it's five, six, seven, eight years before potential acquisition or IPO opportunities. And there are a lot more private investments that are going on rather than just going public right away.

Hancock: So, just for the record, the dollar amount commit for Series A was at \$3.5 million, is that right?

Chen: Right. Right, right.

Hancock: And that was part of Sequoia Capital, was that Fund 11, I think, or something in that--

Chen: Yeah.

Hancock: And it was a significant portion at that time. You were confident going in. And what was different after you came out with funding? What was different for you then the next day now that you had increased capital to work with?

Chen: I think that there are just a number of changes from, for example, changing from an LLC to an S Corp. I mean, things became more serious. We had an office location and so we were no longer working from home but we were working at Sequoia Capital. They gave us a portion of their Sand Hill Road office building to be able to call it an office. Suddenly, employees started coming in and meeting together rather than just doing most of the work from home and then occasional coffee meetings. People were finally put onto salaries and taxes, and you're actually filing tax forms. It became an actual real company rather than just doing this stuff at home. And it's seeming like it's not just a, you know, an afternoon project rather than your full-time job.

Weber: Were there some people that quit day jobs at that point to go take it on full-time?

Chen: Yeah. I can't remember how many we had exactly, six, seven people at the time of the Sequoia Investment. I don't know -- exactly who was in what category. There are things where we had to file for somebody like an H1B visa, and we were able to finally do that. There's a lot of these things that we were waiting for, that we could only start checking off after the investment. We started looking for an office building, which we eventually found in San Mateo. We started looking for outside PR to come up with the communication, the messaging for what YouTube is. None of this really crossed our minds before the investing from Sequoia. It was just trying to build something.

Hancock: Can you say more about your relationship with your VC? Many people talk about Silicon Valley style Venture Capital being not only about money, but about all these other sort of value added, whether it's connecting to market or helping match with partners are building the team or mentoring. What was your relationship like with your Sequoia investors?

Chen: I think what a typical VC would bring to the table would be having experience, having seen both successes and failures, hundreds and hundreds of times for decades. And I feel similarly that if I were to be starting something again, I would probably avoid some of the mistakes that we made at YouTube and be more efficient at creating something new as well as advising new companies. I think that that's for a very short segment of time that I had and primarily working in a specific sector and primarily working in just a few roles. I think when you talk about somebody like Sequoia, who's just seen the growth of just technology and Silicon Valley all together, the entire spectrum of it, I think they are one of the top VCs in this in Silicon Valley altogether. They have just seen everything, and so it really helps to be able to send an email and give a call to be able to get the responses back for what we were trying to do. I think the number of connections that they've been able to grow over time, so if we needed something from an example is just scaling the sight. I alluded to this before as well but you know, YouTube's competitor was just market pricing, whether it could actually exist. And if you were to elaborate on that, it became technology. Whether the technology was cheap enough, bandwidth was cheap enough, or if there was a way to utilize the bandwidth and the providers to be cheap enough to be able to scale the site. But it's extremely helpful to be able to have others that have been in the game for a long time to be able to just ask questions to. A good example is Tony Bates, who was a like an SVP over at Cisco at the time. He was affiliated with Sequoia and Sequoia Capital, who gave us the reference and we were able to sit down with our networking team and Tony for a few meetings. Eventually Tony actually came and joined the board of YouTube. So those are the things that that they were very generous in offering. They didn't have

to. It was more an offering, and it was always a decision that we could make whether we wanted to work with whoever they supplied or not. But overall, that was very helpful. And then eventually, because of all the history and their experience with other companies that have either gone public or been acquired, they, either route that we wanted to go. Eventually we went down the acquisition route. But either route that we wanted to go, they have so much historical knowledge and experience but also hands on board seats <laughs> in some of these companies. That's something as well that Sequoia brings to the table that you would be difficult to get if you were just to get funding from an angel investor or a VC that has not been in the market as long as Sequoia has.

Hancock: All right. Thank you. So you're on this rocket ship, I mean, talking about viewers; I mean, this set of key metrics that you're looking at -- it's fast up into the right, really as almost any kind of phenomenon at the time. Can you talk a little bit more about the scaling part of the technology you described in some detail about figuring out how to get the codecs to work with all of them? How about the scaling time after that's just that period of rapid growth, how are you solving those problems?

Chen: This dives into a little bit of the details of what we had to do from the technology side, right? I think some of the services out there that were growing at the same time that YouTube was launching, they were facing some of the same challenges. But it was generally in a single category, whether or not it's scalability on just hard drive storage, or scalability in networking, just to be able to get faster caching in some of the CDN networks out there. And things like the amount of memory that's used. For example, there's some of this stuff by a company called Audible Magic at the time that we were working with that I would actually look at certain videos with audio coming in. And then within 10 to 30 seconds they would be able to detect whether this is a piece of copyrighted content and what the licensing was for that.

But that requires a lot of fast processing, a lot of stuff that's stored a memory and then fast response times with the networking. Just an example. But YouTube, it required everything on that list. It required storage. Every time you uploaded a piece of video, the original format is generally not compressed. A lot of the time it was motion JPGs at the time taken as photos. And so that's just 23, 24 JPGs every second. So, these files were enormous. We always wanted to retain the original copies of the videos because in case new versions of the video or audio codecs come out, we could reuse the originals to re-transcode. A huge cost for us because we had to keep these original large original videos. The transcoding took a lot of CPU power to be able to re-transcode this content to grab those image stills from this content. And just to do this, processing every time a video is uploaded and to be able to do it somewhat in real time. So, after you upload something, regardless of the size, within a few seconds, it would be available.

That required a lot of your uploading content into San Jose, for example. San Jose may find a server that's somewhere else that we have that has lower CPU usage. At the time we would synch it out there, the transcoding would happen out there. It would be replicating. It would be communicating back to the databases in San Jose that this was done. Another costly variable there was just network usage -- both downstream and upstream. I mean, at the time, YouTube was jumping exponentially in the amount of network that we were using. In fact, you know, I think we were the biggest network bandwidth users out there on the Internet by the time the acquisition happened by Google.

A lot of this was done in an era before cloud computing was even a term, before it even emerged, right? If we were to start that today, we could go and contract out with either Amazon, Google or Microsoft to do this. But I think that one of the real challenges with YouTube was to have to do both. You grow out this product and you build YouTube.com or you build the mobile product. You build the ability to be able to play these videos. But you also had to build and buy all the servers on the back and you have to actually go and find where the data centers are. You have to be there on the ground when this 42U rack of machines comes out of that truck, you wheel it out of that truck. You wheel that into your own cages. You plug in every single one of the actual racks. You figure out the power supplies, the backup power supplies.

This is stuff that as a startup these days you don't need to deal with. Not only was it a responsibility, but we were growing faster than anything else out there and we had a team of about three people <laughs> if you're just counting the network team and then four people if you count the network team plus the person that was actually doing a lot of a low-end system maintenance to bring these things up. These guys were traveling on the road all the time throughout those months. I mean, they were going to New Jersey and some of these data centers and they're not in the central Manhattan. It's not-- <laughs> it's not a good place to be able to put the cost per square foot. They were in the outer skirts of someplace in New Jersey and would have to stay in motels while they're bringing up servers for the largest video distribution <laughs> company out there. So, a lot of those early days was just trying to maintain the cost to be able to build out all those things that YouTube required.

Weber: I know there was no one doing what you were doing at all, but what were the closest? I mean, there were obviously torrents were around, but that's not real time.

Chen: Right, right.

Weber: The adult industry was doing videos; I think starting to do some sort of on demand by then. What were the closest sort of people dealing with trying to do real time video, which seems very different than a lot of what was going on?

Chen: There was Google Video at the time. There was Vimeo, which is still around. There was a company out in France that was doing something as well. YouTube already back in, September of 2005, after being around for just two, three months, had already been pushing, had grown to a point where it was pushing more traffic out than all the competitors cumulatively. I think that it still always came down to surviving and the faster you grow, in a way, the more costly is survival. And, you know, you're competing against the Googles out there. When it came to something that at the end of the day, you really need people on the ground with the resources to be able to connect to all the networks out there, to be able to build. And trying to guess, because again, it's not-- it's not AWS today. It's not Amazon where if you see growth coming next week or if you see growth coming tonight, you log in and then within 30 minutes you have all the servers you need. We had to guess four to six weeks in advance what that traffic's going to be four to six weeks later. And it's such a small checking account that you really have to get it spot on.

There were a lot of tricks that we pulled that ultimately resulted in, whether or not dead or alive, we managed to survive. And some of those just helped us because none of the actual ISPs out there, the service providers, had ever seen something like YouTube before. There's a company out there that we used early on called Server Beach. They were based out of Texas, and they promoted plans to basically rent the servers on a monthly basis, and it varied anywhere from about \$129 dollars to about \$229 dollars a month. And what you would get out of that is, you'd choose the processor you wanted, the amount of memory, and the amount of hardware storage, hard drive storage. But they offered you 2,000 gigabytes of traffic per month fully knowing that nobody was going to push 2,000 gigabytes of traffic a month. And when we saw that, that was perfect. It was, I guess, an early version of AWS in that you don't have to buy the servers. You pay \$229 dollars then within a day or two the server comes up.

It's much harder. It was much harder at that time to really prepare their servers. We tried to create our own way to be able to bring up a server at the time. But we played that 2,000 gigabytes to be the only subscribers, users, customers that pushed that 2,000 gigabytes, and we were tracking. And every time it came to 2,000 gigabytes, the credit card would come out to buy another server with 2,000 gigabytes. And soon, after a few weeks, they gave us a call and said, "We need to talk." The amount of bandwidth that they had coming into their data centers, they had one main line and then the other connection was their entire backup connection. And very quickly, YouTube took up their entire backend-- backup connection and we were slowing down their main connection. YouTube with our 40 servers eventually on their platform was overwhelming their entire company's incoming and outbound bandwidth. But it was, they were items like that that because we were-- we couldn't just buy our own data center like a Google could. We had to put together ways to be able to seemingly look like we were doing that, but these machines were all over the U.S. They all had different IP addresses. I think those were some of the most creative things that the engineering team did to be able to get by to compete with the Googles of the world on \$20,000 dollars a month.

Weber: There's two key kind of technical decisions it seems. One is do it all on the service side. You didn't want a player that people had to download, so it's all done in a browser.

Chen: Right.

Weber: And why Flash? What's the logic behind those two?

Chen: It's a combination of both, and it's the same answer. If you did it client-side, you generally still upload the video, and then it could be in the form of RealPlayer or QuickTime or all the other codecs that were out there. The problem was that, and you have to remember back in 2004-2005, much of the time you'd be looking on a web page and there would be a video player-- You knew it was a video player, but then there would be some icon inside that says, "Download this app." Or it would just not play and it would say, "This is just for Apple only" or, "This is for Windows only." We knew that for people to actually really adopt the service, we couldn't force them to have to download, install, write software for Apple, for Windows. The ideal way from day one was to have nothing downloaded; it had to work inside the browser. But the only way that you could get it to work inside a browser is to use a codec that was available on all machines.

At the time, Flash was embedded into all the browsers. You had to still download it, but it was the only way to be able to overcome some of the limitations of HTML4 at the time to make applications richer, to make them and to be able to play audio and video. In 2005, Flash was able to get an embedded video player with its own codec into Flash. All the browsers out there that had Flash installed could actually start playing videos. We knew that we needed to keep all the videos, the original videos on our servers. We also knew that we had to transcode all the videos into Flash.

The bulk of the time was actually spent in building these transcoders to be able to understand all the different hundreds of codecs coming in to transcode them all into one video codec, audio codec, whether to pull image stills out of it, to be able to synchronize the sound, the audio and video. There's a lot of little things required to be able to compress videos a little bit more. You don't have synchronization all the time with the audio and video and there's differences with the different codecs out there. In some of the early videos out there you could see the mouth moving, but the audio codec would just be slightly behind or slightly ahead of things. That was just the technology at that point; certain video codecs and audio codecs were hard to be able to transcode Flash.

Hancock: I'd like to follow up with a business decision. There were a lot of advertisers and you were thinking about the business model that you're going to have and your sources of revenue. And it seems that a lot of advertisers really wanted to make sure that the advertisements were necessary before watching. And you and Chad made a different kind of decision. Do you want to talk about your approach to that, the business and all that you had in mind of what you were weighing? How did you make that decision?

Chen: I think that at the time, we were always thinking that that Series A funding round was purely for scaling YouTube, purely for number of views and the company and everything else behind it, the staffing, the engineering, the actual hardware, the operational costs. It was not for building out a monetization strategy, but it was just for scalability of the website. The only metric we cared about back then, again, were the number of views a day. It wasn't how much advertising revenue we were generating, right?

At the time it was an easy decision. When we were starting to even brainstorm about marketing and advertising, the easy route would always be these pre-rolls, 15 seconds in front of the video, and the CPM rates on those pre-rolls. Because it's video, it's a lot higher than what you would typically get on a just a graphics ad. You can put interstitials, so as you're watching different videos, as you're going through related videos, you put another advertising video that you must watch for 8 seconds or 15 seconds before you close it. And there's different levels of ads that you can put with different CPM rates. Some of them are 30 seconds; some of them are 15 seconds; some of them are just a few seconds. But when I looked at all the services out there that were more or less advertising-driven, that being the revenue rather than some kind of subscription fee, I was most inspired by Google because I thought that you would search for something on Google and the actual results would be helpful. Sometimes the ads would be helpful because the ads would be coming from advertisers that were specifically buying ads for the keywords that you were searching for, so they were the most relevant advertisers, marketers that are actually in that market that you're searching for something.

In a way, I think that there are always three parties. There's, on YouTube specifically, there are the viewers; there's the content creators; and then there's the advertisers. And we had to try to create this sort of Holy Trinity between the three, where they're all happy with one another. By default, most of the services out there, it's not -- either the users dislike the advertisers; the advertisers have to work with the content creators, but the content creators don't really want the-- I mean, it doesn't work well. In a model where you have advertisers that have relevant advertising and then you're playing the video so that viewers want to see both the content as well as some of the advertising and then the advertisers do some kind of revenue share with the content creators. That way creates this sort of bidirectional relationship that everybody appreciates.

But that's jumping way ahead. I think that there were more conversations that we were having about how do you pull this off? How do you create this advertising with a video site without the users hating it? Because it is a serial experience: your eyes, your ears can only be watching one piece of content at one time, so you're either watching advertising or you're watching content. But that didn't come until much further down the line when it came to implementation. I think that just because the entire service was new as well in 2005, there were really no-- people were just in general, not even scared. They didn't even know what they were dealing with when it came to creating ads for an online video site. They didn't have all the marketing advertising agencies; they were not used to creating this type of content. They were used to creating content for commercials on TV, completely sitting back and there's no interaction.

There's not complete relevance in what you're watching and what you're advertising for. There's always this fear that it's user-generated content and we have no idea what's going to be on the related videos on the side, we have no idea if we put this ad on this-- on this video, whether we're going to be offended because these two are completely unrelated to one another. There's the legal side of things with the DMCA, the Digital Millennium Copyrights Act, that says you can't monetize with relevant advertising on the piece of content. And so in essence, it defines that in order to stay within legal limits, we can't actually implement what we wanted to implement, which is to take a look to be able to get the contextual reference for the ads based on what the user's watching, what the user's seen before, what the related videos are and then show the most relevant videos because that is the clause in the DMCA that we couldn't obstruct.

Hancock: We'll get to some of the legal issues, but I wanted to ask you about the path that you were following for partnership. The story goes, I think, that you were looking at Google and Yahoo and I'm not sure what other companies that you were considering. What were you looking for at that time when you were thinking about partners? Was there a certain Denny's in Redwood City that you--? <laughs>

Chen: Oh, but that would be fast forwarding to acquisition.

Hancock: Acquisition, yeah.

Chen: Right, right. I think probably the biggest challenge, to YouTube, Inc. itself, was not technology, not scalability. At that time by, fast forwarding a year after our first and second round of funding, we were confident that the engineering side of survival was-- Well, I wouldn't say that it was guaranteed because

that small team of 20-30 engineers, they were, <laughs> I mean, they'd been running on vapors for so long that--

<laughter>

Chen: It was going to be difficult and was a lot of excitement around it. There were always new applicants that were coming in that were highly qualified engineers. And I thought that if we wanted to with good management, with the engineering team, we could always scale that part.

Now the difficult part was on the legal side of things, and specifically in this case, it was the music studios labels inside the U.S. So, you have the Universals, the EMIs, Sonys. And whether or not the users knew it or not, you can buy a CD and you feel like you own that music, but you don't own that piece of content, you just own the private use of that content. You're sitting in your car and listening to this, that's fine. But if you want to play this, even just in the background at an event-- that's not legal for buying this. You have to get a license and you have to get agreements to be able to do that, which usually, that's not a problem. If you want to be playing this at a party, that's going to be fine. Once you start putting it on YouTube and you're getting 10 million views of this, then it starts getting problematic. And we worked with companies like Audible Magic out there and that was a company that got the stamp of approval from these music studios and music labels to say, if you work with them, then you can detect when a piece of content comes in with content with music that we own and then you can then tell the users whether to take out this piece of music, strip out the audio or work with us for potential licensing. As part of the DMCA in 1990-- which was created 1997, the policy should be, you know, if you actually detect a piece of content that is infringing, you're supposed to fax something to the infringing party. I think it goes back three times, or there's like three different times that you can fill it then. It was just completely using an outdated law to try to reinterpret it for, like almost a decade later what it meant. We had-- What was the other? Sort of each server-- There was another company that we were using just to host our web servers, websites and our, the database. And so, we had to centralize that because we actually had the web servers load balance and so physically they had to be in one spot. And then we had a database that had to be physically on the same local area network. And they ended up terminating our agreement because we were infringing on some of the DMCA laws and then they were the ones that were getting the notifications.

In reality, they didn't have anything to worry about. It was just us. But just because it was completely foreign to everybody that was engaged in this, they terminated our agreement. We had to eventually move and buy our own web servers and by our own databases and buy our racks and machines from Equinix and then install it in Equinix data centers. But it just goes to say, like, all throughout this period early on, as we were building out, the biggest problems were on the legal side of things. And nobody had seen anything like this before. Even now, to this day--

Hancock: It was unprecedented, right?

Chen: YouTube is the most popular way to be able to listen to music in the world right now. And that's surprising, given that it's a video site and not an audio site.

Weber: But this was right in the moment. Napster was a few years before. The iPod and iTunes store were starting to get big. Were those models at all? What was-- I mean, good or bad, looking at the music industry or popular music?

Chen: Yes, I think Napster when it came to exactly internet streaming audio, is a precursor to YouTube. And in a way, they also tried to shield themselves from legal troubles using the DMCA. And looking back, it really comes down to how the company defines what its mission is, what its intent is and how it communicates to the public about what it's trying to do. And YouTube was always about user-generated content. As we were working in tandem, as soon as there's a piece of content that came up that was detected by Autumn Magic to say this isn't-- this is not infringing. But there's a question about copyrights, you need to do something about it, we did it. And we worked in collaboration with all the artists and all the studios. Napster didn't and Napster was shut down. In the back of our minds was always, you know, this is really an ambiguous area of what you can do and what you can't do. And it's still the case, even today.

What is the EU trying to do with YouTube? What is the U.S. trying to do with YouTube? Should you have to—It's nearly impossible to do this, to be able to look at a piece of content that's being uploaded and to listen to maybe that song that's playing on the TV in the background and to know who's the singer behind this, who's the lyric writer, who is the composer of this song that could've been from the 1960s? Nobody even has that information, but we're supposed to be the ones that's responsible for revenue that's generated out of that. And we're talking maybe 25 cents out of 1,000 views, right? So, you're talking less than-- less than a penny, who to divide up that less than a penny to? And nobody has this information-- The difficulty in 2005-2006 to do this, it was impossible, but we were responsible for it. And even today, it's the case where in the EU, how do you really decide that this piece of content is too violent, too graphical? It's completely relative to the person that's viewing it. And culturally, I think, you have pieces of content that could be viewed as offensive in the U.S. that's fine in EU; that's offensive in Thailand, that's fine anywhere in the world; fine in the Middle East, but not in-- how do you really look at this and be able to interpret it in a way that is supposed to be objective for this website to be able to host all of this traffic?

And that was always a problem that we were dealing with at YouTube early on, that's still a problem at YouTube even now, as you start getting pieces of content with, say, fake news. How do you know a piece of news is fake? Are you supposed to take it down? Are you supposed to keep it up? Is everything that's supposed to be uploaded supposed to be authentic and genuine? How do you decide that? Do you just take down all pieces of content from Fox News? <laughs> Do you take down all pieces of content that's being uploaded for--? You can't keep everything up, but you can't take everything down either. So that spot in between-- there was always content that everybody would agree that we should be taking down. But there was a policy where you could flag content that says, "This content is offensive." We got that for just about every video. Everybody found every video-- at least one person found one video on the site offensive. You have to just ignore some of this and you can't expect that everybody working around the clock can make the same decisions when that comes up.

We ended up creating almost a sort of an encyclopedia <laughs> about all the types of content. You know, when it comes to anything related to sex, it's alright, what is educational versus what is, you know. And it's like okay, graphical is fine, but what is that even mean when it becomes educational versus not

educational? When it becomes offensive? Violence, same thing. You know what is exactly deemed violent? What is not? And then the copyright thing? It's completely on the legal side of things. And ultimately, these were the things that we were trying to face outside of engineering. As pieces of content came up, what do you keep? What do you take down? What are the policies that you take if users, continually the same users continually upload content that is offensive or copyrighted? And so, things like a three-strike rule that we implemented where anytime you upload a piece of content that was infringing on copyrights, we would give you a warning. If you get all three strikes of that, you get all the content taken down. But this was our good faith interpretation of what we could do best in abiding by the DMCA. And that's a key differentiator between what YouTube was doing and Napster. We were trying to do the best we could, assuming that a user-generated content video site could exist.

Weber: It may have been a sweet spot that people are generally less interested in user-generated music than they are in video. I mean, they want professionally produced music, whereas video, obviously, there's a huge demand for not full studio type stuff, user generated.

Chen: Yes, but I think there is that in between spot, which is user-generated video, video contains both the video itself and the audio and generally, you're not creating-- you're creating all the creativity and writing and everything and the acting, the composition of the video itself. But generally, people like to have some kind of soundtrack in the background of recognizable music tunes and that's when the music labels come in and say, "No, you can't do this." And so, ultimately, it came down to survival and it was not because of the scalability and the technology and the funding but it became on the legal side. Can YouTube still be around because of the sort of vague, hazy area when it came to the legal side and specifically the audio side of videos?

And that was still at the time, just the U.S. And so, at the time, it was just a little bit ahead-- all viewing traffic was coming from the U.S., but it was it was starting to slide the other way. So, it was almost 50-50, the 50 percent of the views were coming from the U.S. and 50 percent of the views were coming from outside the U.S. And the two countries that were number two and number three was Germany and Japan. And there was a lot of content that was coming from Japan, a lot of this anime content that people in the world would want to watch. But to be honest, there was even the content creators and the distributors.

Up until YouTube, there was no way for someone in Japan, even if they knew that there was a large global audience for this, there was actually no channel for them to distribute it. YouTube was a way to be able to just distribute it whether <laughs> legally or not. In the future, after the acquisition, it was working in collaboration to be able to figure this out. But at the time it was also, look, we're having enough trouble dealing with just figuring out how YouTube is supposed to operate with all these outdated laws. And then this was just within the confines of the U.S. And so how do we actually start expanding beyond the U.S. and that would actually be going country by country, working with the studios and the music labels country by country about how can we operate within-- How can we actually put data centers and servers?

And in order to monetize in a country, to work with the marketing and the advertising and the companies inside the country; we had to be legally operating inside the country. I think you can only get away with it so long to say we're a U.S. company and we can't-- we're not-- You know, it's great that there are people

coming in from parts of the world to view the content, and it's great that there are people that are in different parts of world uploading this content. We couldn't get away with that for long, especially when over the majority of the traffic was coming from outside of the U.S. For a lot of those reasons, we sought out maybe help from a bigger brother, right? <laughs> Help with somebody that's been in this market and have teams in all these different countries that have both, you know, relationship with the content creators and lawyers.

<laughter>

Hancock: Is there anything else you want to say about that? Thank you for walking us through the whole legal side of story and how important that was at that juncture. Is there anything else you want to say about the legal part before we kind of fast forward to your partnership in acquisition during this middle phase? This is such a compressed history, right, that we're talking about. So much happened in just a short amount of time.

Chen: Yeah.

Hancock: But you dealt with so many key issues. And we've talked about the technical part and the kind of the engineering scalability.

Chen: Right.

Hancock: We just talked about the legal issues, which turned out to be huge and unprecedented because of the outdated legal system. We talked a little bit about the business decisions you were making. Anything else in this, this time of rapid change that you want to talk about?

Chen: Well, I think at the high level what we've seen is internet without a YouTube or anything like it, internet with the early phases of YouTube, where people just didn't know how to deal with it. And it grew much faster than anyone had anticipated to the point where over a period of years, all of a sudden, the mass amount of your music content and your video content was actually being distributed on YouTube. There was more competitive content that's created just on YouTube that competes with the content that you've created inside your own studios. You have a lot of these content creators that the first reaction was always, "We don't know who you are, but we don't want our content on here. Take it down." And then fast forward, just measured in years, it's, "We need to work with you. We need to put up our content on your-- We need to work with you. We need to actually put our content on YouTube because that's the only place that people are watching content." The traditional media outlets, it's okay to also be putting it on TV on cable channels, but you do have to work with YouTube to be able to really get access to the mass audience. And those are sort of the three phases of that. And that all happened in the last ten years, right, to be kind of this complete revolution of who's creating the content, who's viewing the content, and how you're watching the content.

Hancock: Thank you. At this point, maybe we can talk about moving in toward these big brothers that you were looking to that eventually led to the acquisition. You were evaluating, there was interest from

many, and you had established relationships with several. How did you go about exploring those and then selecting and making the decision for acquisition?

Chen: When we were looking at the acquisition route and when it became the only route to pursue if we wanted to continue to build YouTube, we were looking at potential acquiring parties, and there were really only a few that could make the acquisition. It was the Apple and the Amazon and Google, Yahoo at the time, Microsoft. From the very beginning, when we were thinking about the acquisition route, we knew that if all equal, Google was going to be the party, the company that we would most like to work with.

I said this last time, but just about everybody on that team had come from PayPal and just about everybody on that team had directly experienced what it was like to go through an acquisition from the acquisition of PayPal by eBay. And frankly, that was a horrible experience for everybody that was involved, right? The engineers, their names became anonymous. It was just "We need 3-1/2 engineers. We don't care who it is. We don't care who's sick. We don't care their-- We just need 3-1/2 engineers to work for 14 days on this project, and then all we care about is that this product has to be launched on this date, and it has to be able to monetize. But we don't care the-- specifically about any of the actual individuals that are working on it." And then it became this anonymized workhorse and it didn't really get down to the layer of the individual contributors that are involved. And because it was such a heavy, engineering-laden company, we wanted to make sure that the engineers still contained the independence that they've always had working at YouTube. That was something that we always strived for was that we don't have any-- One thing at YouTube, kind of stepping back, is on the managerial side for me when we were building out YouTube, I-- there are a lot of key things that I noted when I was working at PayPal that I always said if I were to ever start a company I would never do this. And you know, who knew just two years later, three years later, <laughs> that came to fruition.

Hancock: What was on that list, I will never--? <laughs>

Chen: I think one key thing, I think is that granted, you have good individuals that pass through the whole application-resume-interview process. They are self-motivated. They do have creativity. Assuming, you know that's all checked. You don't want to put an artificial ceiling on that. If you define in too much detail exactly the date that you're supposed to finish something by, so even if you could stay up and even if you wanted to stay up to finish it a day, two days earlier, there's no incentive. There's no bonus. There's no applause. You know there's no recognition for doing this.

And what if you wanted to do something if you saw some mistake in the actual formal products spec and you wanted improve on it, there's no-- You would actually probably get into trouble for trying to do that or even be thinking out of the box. There was always this top-down of sort of whether it's from the VP, the business development all the way down to, you know, product down-- So, the engineers are sitting at the bottom, so they're not really thinking about the company and thinking about it from improving the metrics that are actually truly important for the company.

One of the things that I always wanted if we were to create a new company, was to bring in engineers that had a good product sense. And not all engineers have that, but engineers that have a good product

sense, knowing what the consumer wants, and then give them very high level but somewhat abstract metrics or goals and then just let them take it from there on. Instead of writing these 25-page specs, which usually amounts to what is this product supposed to be doing and why is it doing this, just leave it about what are we trying to accomplish? And then we have a few high-level meetings about it, but let them take it from there. And that's how we were able to get engineers that were motivated to be working overtime, right, that it was about getting these features out, experimenting. If you have an idea in your head, you're given full liberty to implement it and to get it out. And because of that incentive, they want to do it faster. They want to maximize the quality of it versus being looked upon as just a factory employee and this is all you have to do today and then you get your paycheck, right?

Other things of just not having too many people in the kitchen at once, and so it was, I think ultimately, it was just a very small team, but it was-- It was all engineers but engineers with a product design user interface flow sense. Leading these teams, leading these actual products and defining how the actual product would be used by the users were actually the engineers themselves. And then there was engineer-led teams leading other engineers.

And so, those were some of the things that we did differently at YouTube that was different from PayPal and eBay. And we also saw that when the acquiring party came along with Google, that was also a philosophy that was adopted and practiced at Google, a similar one where it cared about the identity of the individual contributors. It rewarded people that were able to contribute more, and it respected the engineers themselves. It respected the designers and respected the people that were actually core to building that product before it launched.

Hancock: About how many engineers did you have on the team at the time? Roughly, order of magnitude.

Chen: It's around 30 engineers at the time. Which, it's just a tiny number, but I think,-- I think always when it's a smaller number of engineers. A smaller number of qualified engineers are always able just to produce a lot more, generate a lot more productivity I think just because they're not constrained by anything.

Weber: When it came to think about acquisition as a solution, were all the founders in agreement? Did it change over time? And how did Sequoia or other investors feel?

Chen: I think there was always a little bit of contentious dispute between which route do you go down, IPO, acquisition and well, that's the big question. And then if you were to go that acquisition route, do you do it now or do you do it a year from now or two years from now? From there it's the actual party that's involved in the acquisition. And evaluating on pure returns for everyone, but specifically in the case of board members, board seats in the case where you have Sequoia Capital involved and for them to give the most back to their investors, it's going to be about going public. It's going to be about going IPO. Or pushing it off long as you can for additional funding rounds and to be able to continue to see that growth metric persist for a number of years and then sell it, not in 2006 like we did, but 2007-08-09-10.

But these problems that I talked about, they were just challenges and it wasn't that these challenges were only visible to us. It was visible to everybody that was on the board, everybody that was at Sequoia. I think it came down to whether their belief, their conviction that answered if we can solve this. Can we overcome these hurdles? And from the engineering side, I always said that we can scale, so don't worry about the engineering side, but from the legal side of things as you start expanding globally and as you start working with these music studios, can this company of 55 people survive beyond 2006? And I think that those were the discussions about can you guys do it?

Ultimately, the way that some of these agreements were written, we always needed, so it was mandatory that we get approval from Sequoia Capital before we could sell the company. We couldn't even consider an offer that was worth-- that was valued at less than \$100 million dollars. That was part of the contract. And, you know, luckily for us, we passed that pretty early on. But even when it came down to the actual \$1.65 billion- dollar offer, to accept that from Google we needed approval from Sequoia. It came down to whether this team could survive beyond 2006. And looking back in hindsight, I don't think we would have been able to do it without Google's help. We probably would have needed another big round of fundraising just to scale and then there's just so many-- so many bridges to cross that with Google's help we were able to do it. Without that help, internationalization, mobile and the legal, I mean, just scalability, all these issues that we had problems with, and Google helped.

Hancock: You mentioned an IPO route is an obvious option. Did you take that off the table early on?

Chen: No. I think both options continued to be on the table. As it came down to it, when we started discussing the next step, though, about do we-- do we fundraise some more or do you think at this point it is the time not just to sell the company, but to, I kind of think about it as working with and in collaboration with another party with more resources to be able to help us. And that was one thing that we had private meetings with Eric Schmidt prior to signing the acquisition and it came down to asking about will we replay that situation that we did at eBay and PayPal, where you just come in, let go of the senior executive team and then run things your way? Will you be letting go of the engineers? And will you be just realigning the the interests of what YouTube is doing with whatever the larger vision and the goals of Google were? Or, will you let this team that's been able to work so well together, will you let us continue to do what we're passionate about doing? I remember there was that afternoon meeting with Eric that he came in and said, "You know, as long as you guys can continue to increase number of users, number of users, number of content, amount of content that's uploaded, you guys are the captains of the ship for at least another year or two years on down the line."

And so, after we heard that, we-- You know, who knew what was going to happen after we signed the contract? But that was enough to say this is going to work out. And continue to this day, Google has offices all over the world, but in the Bay Area, the main one's in Mountain View, another one's in San Francisco; but continuing to this day, YouTube is still in the same location in San Bruno, so separate from Google. There was a lot of integration with YouTube to say, "Where is the mobile team that's going to be helping us?" And so, we were working with folks out of Seattle and out of New York, out of Zurich, out of Paris, out of London, all these teams all around the world; as we started expanding to Asia, teams in Hong Kong, teams in Japan. But we were the ones that were making the calls about what we wanted to

do rather than the opposite side of Google saying, this is what you need to do. And that was just the exact opposite of what happened, I think, with PayPal and eBay. And all the engineers that were a little bit cautious and cynical about another acquisition, I think in hindsight, they all thought it was the right timing and the right party to do it with.

Weber: That's sort of almost like being a separate division of Google. I don't know exactly how you phrased it, but that was not worked out in advance as a condition.

Chen: Oh, no. I mean, we didn't know what the organizational structure was going to look like after the acquisition. But it ended up working out well. I mean, the engineering side reports to the engineering side and so I was working with Bill Coughran, an SVP of Engineering over at Google. And then I was working with many of the other engineers from, say, the Google video side that came in the Google map side that came in to be able to help with a lot of the integration on the back end.

Weber: How far down the road did you get talking to other potential acquiring companies? Or at all?

Chen: We got pretty far. I think we got a few other offers. But still, I think, the best offer by a few definitions of just --- I think the team wanted to work with Google. They were most flexible with the actual offer. And then I think just in general, the way that their organizational structure was, it was a lot of the sort of the engineers that are strictly engineers and they would be able to still work as engineers. So, it was kind of a more vertical structure in that the engineers are engineers and the designers are designers, the product teams are product teams and then they work together on products together. I think everything just seemed like it would fit well with Google. And so, for everyone involved from the investors as well as the actual employees, they were happy with the deal.

Hancock: Let's talk about the deal. It's October, of 2006. Stunning news, by the \$1.65, is that right, billion-dollar acquisition?

Chen: Yeah, yeah.

Hancock: Less than two years old.

Chen: Was it? Yeah. <laughs>

Hancock: Right:

Chen: I think.

Hancock: We've just gone through the story. You're less than two-years-old. You have about 70 employees. And this announcement comes.

Chen: Yeah, the, I mean, I know that-- It's hard to remember it all. I know that--

Hancock: Is it just a blur, right? <laughs>

Chen: I know it took about a week. It was a very compressed period, to have that first conversation with Google to the point where you signed in ink the actual contract at the time that it was announced to Wall Street. It was seven days.

Hancock: Seven days from initial conversation to announcement--?

Chen: Right.

Hancock: Or to agreement? To announcement.

Chen: To announcement.

Hancock: Seven days.

Chen: I think we talked about it with the team at Google or it's public. It was the David Drummond, the Larry Page, Eric Schmidt, they happened on this Woodside Road here at a Denny's because we didn't want anybody on the YouTube side to know that we were talking to Google. We didn't want anybody inside Google to know that we were talking to YouTube.

Hancock: Denny's was not a common destination for either group, right?

Chen: Right.

Hancock: <laughs> Nobody goes to Denny's. None of those people, I should say, would frequent Denny's.

Chen: Yeah, it's odd. I think of it memory wise, it's all a little bit vague. But I remember everything that I ordered at Denny's.

Hancock: What did you eat?

Chen: I remembered should I be going to the bathroom when I leave? Or should I just <laughs> leave first and then go to the bathroom elsewhere? I think that it needed to be compressed together because of some of the legal stripes out there that it couldn't be-- We couldn't publicly auction ourselves just based on just where YouTube was at the time. And just working with Google, they understood exactly. They were able to place themselves in our shoes, and then they knew exactly where we're coming from. And it was, you know, it was a bet for them as well, because on the legal side, it wasn't that once you get acquired by Google, the legal problems go away. They still had to deal with it, and there are all sorts of-- Because essentially, in one week you turn from enemies to let's make up and we're going to acquire you. And I mean, things like a first-time meeting with the Google video team, who had been our most bitter enemies for a year and a half and in some cases the acquisition is a confession of defeat. <laughs>

To say you lost and we're going to acquire the team that beat you and now you guys work together. <laughs> There were cases where in Japan, Google Japan, the teams would go out there and they would meet with the big music studios out there and say, "Sign a deal with Google Video and we will help you defeat YouTube who is stealing all your content and broadcasting it to the world." And then, you know, a month later you're walking into those same <laughs> rooms, meeting the same people. Insane, <laughs> you know. "We didn't really mean what we said a month ago. We bought this party and let's work together."

And so, there were a lot of things like that that had to get smoothed over when you're acquiring somebody that you've been competing with for such a long period of time. But everything happened very quickly, very smoothly. You know, there was about three days, Friday, Saturday, Sunday, where we were at the Wilson Sonsini offices here in Palo Alto just going over all the paperwork, and they brought in all of the teams from the M&A side, there was the legal side. There was a big party from the engineering side they were looking at and they were making sure that, like, let's take a look at the server logs to see what are your number of views, to take a look at your traffic, network traffic numbers, to really ascertain whether it's legitimate, the number of-- And they were shocked at how much traffic we were actually using because we've always been a little bit scared that, implementing some of the AdSense, you know, ad revenue shared tools that Google was offering, that they would automatically already see how much contact that we were getting.

We only implemented AdSense on a fraction of the content. We didn't ever do it for all the YouTube content. So even for Google, they didn't exactly know the number of views we were getting or the amount of traffic that we were getting, so they were pretty astonished when they actually saw the real numbers when we actually unboxed everything and let them see what we had inside. They took a look at all the actual source code that we wrote, and it was all in, and it was all written in Python at the time. Nobody had written anything that was at that magnitude, you know, top two, three websites in the world, using Python as a programming language. Guido Van Rossum, the author of Python, was working at Google and he was shocked that we were using Python on the backend of things to be able to write all of YouTube in this language. He came over the day after the acquisition and gave a talk to the engineers. The engineers were just joyous that they could talk to the author of Python. But Guido was pretty happy that he was there talking to the YouTube team, all the experts in Python and using it every day.

Hancock: It's amazing coming together, sort of poetic.

Chen: But the acquisition, I mean, we announced it on Monday right after the market closed. There was a board meeting-- there was a call with analysts, and we were sitting in that room with Eric, Larry, Sergei. We made the announcement to the team right after or right before the actual call. And it was a surprise to everybody. Nobody knew about it other than our legal and financial, the CFO. And just out of pure coincidence, it was also the date that we had scheduled for a move from San Mateo to San Bruno. They completely coincided with one another without any prior planning. And so <laughs> it's, you know, people are trying to find their desks, trying to set up their computers and then we rush back and say,-- Because what was it? We had to-- We had to sign the paperwork there at Wilson Sonsini and then we had to be back in, not back, like visiting San Bruno almost for the first time to our new offices for 1:30 PM for the

close of market to actually do-- to make the announcement to the team, but then actually do the actual call with the analyst to make the announcement.

We'd already been up all weekend and then that, I think we penned everything finally-- It's how compressed that was to actually sell YouTube to Google from the Denny's breakfast all the way to actually signing the final signatures, to authorize that agreement in that amount of time. With all the meetings with all the various teams at Google happening over a weekend <laughs> rather than any week day. and then finally signing that and then driving probably 95 miles per hour across 280 just to get back to San Bruno to make the announcement and then get on to the actual analyst call. It's hard to even really remember the details of anything that happened during that time, but everything went smoothly. The call was the first time that I had been on a Wall Street phone call where every word was being recorded, and so things were told to me about things not to say and things to say, just getting coached about <laughs> what I should say as a spokesperson for Google.

Hancock: And the announcement to your team, describe where you were and the reaction, since that was big news.

Chen: Yeah, I think that the general philosophy has always been very appreciative of all the engineers. Knowing how much time and commitment that they were putting into-- And it's just like all else. I think that you have to sacrifice something to be working on weekends, sacrifice something to be able to generate 80 hours of work. And so, it was always being open. I mean, text messages, instant messages, emails. I was always open within the engineering team. There was an email alias just to the engineers and I was always sending emails there. Notes from board meetings, from some of these other discussions that I was part of, just to be pretty open, that all the engineers knew what was going on. I tried to explain to them the reason that we had to figure out the audio signature tools, the libraries for that, was because we needed to do this so we could work with the music studios and this is a key part of legally continuing to build out YouTube. It was pretty open to the engineers that everything that went beyond-- behind the deal, why we made it and then the actual deal itself. And then it was a few conversations just to learn whether the engineers would be happy with it. I don't think that we would have made a different decision, but it was up to me to make sure that the engineers actually felt they weren't getting cheated after working for, a year on something.

Weber: A small question of why were you in San Mateo and then San Bruno considerably north, where a lot of you guys had worked before?

Chen: You mean just moving the--?

Weber: Well, I mean, you were in San Mateo, then you moved even further north.

Chen: Right.

Weber: That's a long way from PayPal and some of the places a number of you had been.

Chen: In the San Mateo office, we were just pushing the fire hazard boundaries of how many people we can keep in San Mateo, so we had to get out of there. The San Bruno office was convenient in that it's kind of equidistant from people that lived in the city, people that lived in the Peninsula and even some of the people that were coming in from the East Bay. It's right off the highway there, right off of 280. You know, you can get on 280 and 380. And so, it was convenient for everyone in terms of location. It wasn't something that you could just walk outside to, like in Palo Alto or San Mateo, just to get a bite to eat. But I think that's more of the Google-esque model of having great chefs come in, having everything that you would be typically leaving the office for, trying to bring that into the office and bringing a higher quality version of it inside the office.

Hancock: I was thinking back, and you talked about that fortune teller's prediction--

Chen: Yeah. <laughs>

Hancock: That you would never be rich. <laughs> And you think about how many scares you and Chad had.

Chen: Now I remember that. It came out publicly, it was that 2006 *Time* magazine, the Person of the Year, and it ended up being YouTube and the actual content creators. But I remember making that same remark during that interview about that. I mean, not much to say about it, other than just that was strangely still on my mind as something that continued to make me almost disbelieve that it was happening. <laughs>

Hancock: Oh, really? <laughs> It wasn't real.

Chen: And in some ways I think it was good because it kept me grounded to say, don't get ahead of yourself. The finish line is still a foot away, <laughs> you know. In some ways it was the sort of energy, the fuel behind making sure that we always took another step forward to cross that finish line and then until you could really say the deal was not just penned, but after the deal, it's just like any VC investment. You don't make the announcement on Monday and then on Tuesday, you walk home with a briefcase of money in it.

Hancock: Yeah. No liquidity.

Chen: It comes over time. You're getting Google stocks. Your vesting cycle is also extended because of the acquisition. We made sure that the employees were well taken care of. There are things with acquisitions where it accelerates your vesting period. So, if your vesting period is generally four years, you can accelerate it. For most of these acquisitions, you move it ahead or you shorten it, or you accelerate it by a year. So, if you start in 2006 then you have to wait to 2010 to get all your shares., Now, after an acquisition, you just have to wait till 2009. But of course, as the acquiring party, they want all the senior staff to stick around for as long as possible.

And in this case, Chad and I just said we would be open to not taking any accelerations at all as long as all the other staff and all the other engineers were able to get that. They were offering us an additional \$10 million dollars to stay on board for another four years. And then this is way further down the line. I just responded with, if there's a way to be able to take that \$10 million and distribute it to the engineers instead.... I mean, I think the \$10 million would mean a lot more to the engineers than it would be to the actual founders. I always thought it was a little unfair that you have some of these engineers that are far smarter than I am that are working just as hard, if not harder, but just because of the time and the situation that they were in when they actually came on board, they get one- one-hundredth of what I would receive after an acquisition. You know? And I mean, it's just thinking about it from that way, it's always feeling grateful that the team stuck around for the same amount of commitment that that I did.

Hancock: So, let's talk about the post-acquisition phase. You did decide to stay and then there were other, legal challenges and other things that came. You had lived through and had the scars from a hard acquisition before. You had pledged yourself that you would learn from those lessons and then here you were. What was the post-acquisition time like? What were you working on, focusing on most?

Chen: My motivation never really took a pause. I think prior to the acquisition, it was always "we need to survive." We need to make sure that everybody that's committing themselves to this, they're able to get something, some reward out of their work. Post-acquisition, I always thought that Google paid way too much money for YouTube. And so, it was kind of wanting to make sure that they got what they paid for.

A large part of the challenges for me was internationalization. A large part of it was integration into the rest of Google. I think it's often cited that acquisitions can fail and even if they don't, the sort of total productivity of the party being acquired is always slowed down during that integration period. You potentially have to rewrite the entire application. You may have to migrate users using a new username and new password. There's always something-- from the point what the customer sees to all way to the backend.

And again, having gone through that with eBay and PayPal, I knew that it was going to be a challenge to completely integrate. There are so many levels of who the engineers are reporting into, starting to have to again write peer to peer reviews on a quarterly basis for all the engineers, trying to actually slot in each of the engineers and trying to match them up with the engineers and the different levels of engineers at Google reporting structures. And, you know, that's just organizational stuff. And then, just trying to figure out what teams to work with. So, the international team that we had, who did they work with? And we had so many phone calls and so many meetings and video conferences early on, and it would start with, "Hi, my name is Steve. I managed the Product and Engineering Team at YouTube. And who are you?" And it would be-- "And <laughs> where are you calling from?"

Hancock: <laughs>

Chen: And, you know, it would be, "This is your-- And this is the Engineering. This is-- And we're responsible for this." It's slowly figuring out how to integrate the teams together and the products together and the engineering together. I think that I always felt that if I were going to exit and leave YouTube, I

would still feel committed to at least making sure that this acquisition was carried out smoothly. So, a lot of the things that we were trying to do, were about to finish. And then if I were going to leave, I want to leave at a point where the integration was complete.

Hancock: As part of this integration there were all kinds of things about marketing and branding and culture. And you were in a different position, having built the company and now you're integrated in it. You mentioned a few of the people that you worked with along the way and that you just invited back. Gideon.

Chen: Right.

Hancock: Gideon Yu, your CFO. You've talked a lot about the engineers. Do you want to comment on any of these other people that were key for YouTube and as part of this transition? Do you want to mention any of those other figures that we haven't talked about yet?

Chen: I was most tightly tied in with this group of 30 engineers. They'd all been working for so many years together just to make sure that things went smoothly. I do remember that that was a key part of it; even if we went forward with the acquisition, we just needed to make sure that everybody that came along the way was happy about it. Oh, I remember the day after the acquisition, Google started sending truckloads of food to YouTube for lunch. And I think that for the engineers that had to go out for lunch, and if they weren't convinced that this was a good deal, when the free lunches came the next day, maybe that convinced them, you know.

We had a lot of things from them. We had a swimming pool in the new building, and so they were happy to have that. <laughs> You had a Google keycard. For every office that Google had around the world, including the ones in Mountain View, you can actually start working out of there and we started expanding the offices inside Google, so there was a YouTube division that was inside Google. So, some of the folks that were coming from the South Bay, they could sometimes work at Google instead. So that was a policy that I set that, look, at least three days out of the week, you have to be in San Bruno. If you want to work, you can't work from home. But if you want, you can work outside of-- Sorry. You can work in Mountain View and you can work at the Google offices just down the street, yeah. <laughs>

Hancock: Literally. Our next-door neighbors. <laughs> Well, the legal challenges continued, and then that became part of what Google was facing and responsible for. Do you want to comment about that? And was that--?

Chen: I mean, I think a big one. There are probably a lot of smaller ones that never reached my level, but the big one was this billion dollar lawsuit coming from Viacom. And I'm not sure exactly, I have some vague guesses, recollection of why it happened. I believe that it was negotiations carried on for a while. It didn't pan out. And then they said, "We'll sue you instead for a billion dollars."

Hancock: <laughs>

Chen: And, you know, it was they were interviewing just a legal team that was talking to everybody that was involved with YouTube. They took your computers and downloaded every chat message, every text, every email, everything that you had typed on the keyboard for a year and a half. And the ruling kind of went back and forth. But, you know, it's going back to this sort of middle ground legal ambiguity about user-generated content. YouTube is probably sitting at the top of this, but Yahoo messages, message boards and eBay,

There's so many of these services out there that have been created that's all about user-generated content. And you know, what if you sell something artificial on eBay? Is eBay responsible for that? What if you post something on a Yahoo finance message board that turns out to be fake news? Is Yahoo responsible for that? So I think when it came to Viacom, it was just trying to figure out this content that is popular. It's not just Viacom and YouTube, but it's just popular content coming from anybody out there that it's probably not uploaded by that party, but the person that uploaded it really has no idea what they're uploading, whether that's owned, whether they have the distribution rights to this content. It may actually get a lot of views and they may be incentivized to do it again, but that-- Much of the time, it's not that the user is trying to say, "How do I break the law by uploading a piece of content?" They're just trying to upload pieces of content that they like and they want to share and it just so happens that it's in that gray area between Viacom says, "They can't upload this content and if you host and you've created a service that accepts this and shares it and is visible by people around the world, we're going to sue you a billion dollars for it."

And YouTube's on the other side to say, "Look, we follow all the rules and all the laws that say whenever there's a piece of content that's uploaded on a user-generated content site, we take it down and in a more expedited manner than what the DMCA claims." But, you know, it's in that middle ground. All the emails that were looked at was trying to look at whether or not we created YouTube as a way to be able to distribute copyrighted content with this user-generated content site being more of a facade rather than the intention of the site. And Viacom was saying, "No, you guys created this just to be able to share Comedy Central videos."

Hancock: So with that, and we know how that resolved itself, there were-- As you look back on the sweep of your YouTube experience, it happened very quickly, but it seems to have been much up and to the right.... your user views. So many entrepreneurs talk about dark moments that they had, you know, challenges. Or they really hit a wall or had something where they were fundamentally questioning the capacity to move forward. Did you have some of those along the way that we haven't talked about yet?

Chen: Not really. <laughs>

Hancock: Isn't that great?

Chen: No, you know what, I want to say, for better or worse, my personality has always been "make the decision and act upon it before I think about what I'm doing." <laughs> So when it came down to-- I mean, there's so many instances of this. When I moved to San Francisco, it was my first property, house I've ever bought. And I looked at it on Sunday and I made the offer on Monday and then Monday came and

they said, "There are three parties that are actually bidding at the same price. Do you want to bid more? But it's all anonymous. You don't, you know--?" So, I bid again, and I ended up winning that. When I moved out to the Bay Area, a lot of these things just speak about-- And then thinking about what did I just do? In some ways I think it's a characteristic of an entrepreneur to be able to take some risks. Often times you would make a pretty darn good decision just knowing what you know at this time. Surely, you could do more evaluation and analysis and you can probably make a slightly better, more informed decision. However, I think most of the time that first guess tends to be right. I think as a startup, as an entrepreneur, it just makes sense to make that decision earlier and then work around and maybe evolve the product around that.

So we had a lot of those things at YouTube, but we made changes quickly to the point where I think the problems that we face never really blossomed into-- blossom's probably not the word, but, <laughs> never expanded to a point where it construed this idea that YouTube was going to fail. And so, things like when we originally launched the site as a dating site. We joke upon it, but it was only a dating site for a week. In fact, I remember that we launched it knowing before we even launched YouTube.com that this dating site idea is never going to work. But what the hell, let's get it out there. It's a few commands. You type it on the keyboard. You launch the site. If no users use it, it doesn't matter. Nobody knows about the service anyway. And then as soon as we type in the keywords, the commands to launch this, we started already working on changing this dating site into something else. It's a problem in that we had to somehow change the direction of what the company was doing. But it wasn't a problem in the grand sense that it really slowed us down for months.

There were a lot of these decisions that we made. A lot of them on the hardware side that even to this day, if we didn't make those decisions quickly, the site would have just crashed. I mean, the site would have never survived past September-October-November. There was the incident with I don't know if we talked about it before with MySpace and how it was trying to just stay on MySpace. But it was a fight to whether the users of MySpace was going to continue to let YouTube--whether they were going to be fighting and arguing and supporting YouTube to be continued on MySpace. Just like everything else, we've faced a lot of the same challenges that other startups do.

But just given the timeline of a year and a half from, from launch to selling, it's just everything from three days of <laughs> actually working out a deal, say is it \$1.2 billion or is it \$2 billion or is it-- All right, let's settle in the middle for \$1.65. That's like a telephone conversation, you know? <laughs> Everything was so compressed that I think we underwent everything that every company goes through. But it was just on one-quarter of the time.

Hancock: Yeah. <laughs> So you made the decision to leave. But what was behind that decision and what came next?

Chen: YouTube launched 2005, sale 2006. And I ended up leaving around 2010-2011. It was for personal reasons mostly, and it was kind of a life changing thing. It's out there on Wikipedia and after YouTube I wrote this sort of autobiography, but it's in another language that I can't read or write. And so, it's an autobiography written by, I don't know, not even a ghost author. It was, <laughs> it's an author

because I can't. She just had to translate everything, but everything was from the first-person perspective. And even then, I wasn't sure if I should mention this, but it's all in there and so the short of it is in 2007, CNN and YouTube were sponsoring the Democrat and Republican debates. And this was in North Carolina, where it was with CNN and we had all be out there. We were on CNN doing interviews. We were meeting with Hillary and Obama. We were just sitting in one room shaking their hands. They won-- I mean, I think it was just more formalities. I don't typically drink, period and that was three days of the actual events, but then also waking up at 5:30 AM to do interviews, local interviews. You had all these actual trucks out there that's broadcasting all this content, live content, stuff that's coming in from-- Oh, actually stepping back, the reason why YouTube and CNN were collaborating was that instead of the questions coming from just the moderators, it was playing a video on this front-projected screen on the stage that was coming from YouTube users. And just to make it a little bit more, genuine, closer to the experience, to actually see the background of the person that has that concern and is asking that question and that it's-- It means a lot more to be able to see and feel and hear that rather than just coming from a moderator reading off of a transcript.

But I was flying back, and on that flight before it took off, I ended up having this seizure event. This was on the runway before the plane took off. And luckily, the woman that was next to me was a doctor and she was there the whole time, so she had a good sense of what was actually happening. And then the Atlanta General paramedics came in and took me out and put me in Atlanta General for the day, for the night.

I think after one of these general tonic-clonic seizures, you have no idea how much time passed and you're under a fluorescent light the whole time, wherever, so day or night or how many days had passed, no idea. This was in July of 2007, so this was a year after the acquisition. —After that, I came back to San Francisco, and I think while at the emergency room there, they said through one of the CT scans that they had found something in there. But with the CT scans, with technology, we have no idea what it is. Coming back, it was through Ron Conway, who was able to actually connect me with the neurology team at UCSF, and luckily, I was living down the street from one of the top neurology hospitals in the world. — Unless they actually went inside your brain, there's really no way to tell based on just MRIs and CT scans and, you know, just Q and A, exactly what that amorphous black thing is.

And so, a lot of things came back. You get these extreme cycles of you create something in 2005 that ended up being as big as it is. And you sell it. You travel around the world. And then this thing happens. A lot of ups and downs during the compression of those few years. Luckily, they ended up putting me on this medication called Dilantin, which is a pretty strong medication, and that seems to have controlled it. But there's this notion of a seizure threshold that everybody has and if you cross that, you have a seizure if-- And for healthy people that don't have seizures, it's generally a pretty high threshold. But, you inch upon that threshold if you do things like not sleep, if you do things like drink a lot, if you have a lot of stress. For example, there's a large percentage of seizure cases where it's a college student, that is maybe their second semester as a freshman, and they have four finals the next day. And they're just on just coffee, a lot of stress on no sleep and then they would have a seizure. And this is a pretty frequent occurrence. But the idea is that in my case, that threshold was lower. In normal day to day operations, it was fine. It was you go to work, you-- Everything was okay. But if those variables that I'm talking about

were all raised at the same time, then the likelihood of a seizure increases and once you go over that threshold it occurs. So, the first time was everything. It was a lack asleep, tons of interviews, meeting Anderson Cooper and being on CNN at the time, meeting all the Democratic candidates and then flying back and operating on East Coast time. All those were checked, and I think that's why the seizure happened.

And unfortunately, in 2008, so advancing by a year, those 12 months, two more seizures happen. A at the end of 2008, there it was I was coming back from Thanksgiving in 2008, where the last seizure happened before the surgery. I went over to the Neurosurgery Department over at UCSF and it came down to do you want to go forward with the surgery or not? It's an area inside the brain that-- I think with these seizures it's not-- we're not exactly sure what the cause of the seizure is. It's generally one area. Well, it could be a lot of things, but it's generally one area of the brain that is firing off electrons, and it could actually stop at a certain point or it could completely cover the rest of the brain and it goes into these general tonic-clonic seizures.

In my case, luckily, it was an area where through the CT scans, MRIs, I don't even know, angiograms and all these different tests that you do, they were able to figure out that it was in a certain part of the brain. And then you go through all these other tests. There's a lot of tests where they turn off your left side of your brain and then the right side of your brain, just to make sure which side of your brain is responsible for what. And even that, it came back ambiguous, like we're not sure what the left side of your brain is doing, and the right side of your brain is doing. And so, if we're going to be operating on the left side of the brain, we don't know exactly what's going to happen if there's some mishap.

What it came back to it was November. I had my final seizure before the surgery, and it was during Thanksgiving. And again, it was during that period where it was flying, lack of sleep, stress, all these things, being at home, which is stressful, as with parents. So, coming back, it was in December when I ended up meeting with Dr. Michael Laughton there at UCSF and we started talking about what do you want to do next? We can put more medication on you, but we advise that, you know, you're relatively young. We know exactly where the seizures are coming from, which is kind of lucky. And two, it's in this temporal lobe area that we could actually get to and do the surgery. And I remember asking them, so how difficult is the surgery? How safe is this? And just out of a score from 1 from 10? And he still gave me, like, a 6 out of 10 which, I don't know if that means it's--

Hancock: He only gave it a 6?

Chen: And, like, does that mean--? <laughs> Is that an easy search? Or is that not? But, you know, maybe it's like everything I said earlier about all right, let's just make that decision and we'll figure out whether that was a good decision later. I said, "Why not? Let's do it."

Hancock: This is December of--?

Chen: Of 2006, so--

Hancock: 2006.

Chen: We did the surgery on January 30th of 2009. I did remember, all right, let's get this over with. Let's do it as soon as possible. So, it was shortly before Christmas. He had pulled out his calendar and said, "What about next week?" you know. "Like no. I mean, when I say as soon as possible, I don't mean that soon. Let's wait at least-- <laughs> Let's wait at least a month." We ended up putting it on January 30th of 2009 when we did that surgery. Looking back upon it again, you know, I know I'm not the only one to have gone through, you know, a major, surgery. And I really didn't-- I don't know. It just felt like I needed to do it. And in the worst-case outcome, you know? Yeah, and the worst case, you know, it's you're under general anesthesia. <laughs>

Hancock: That's kind of a cavalier description of the worst case.

Chen: <laughs>

Hancock: There are lot of worst cases in this case. You know, this was a big deal.

Chen: Actually, worst case under general anesthesia, if critical air happens and you die during the surgery, that's probably not the worst case.

Hancock: No. That's not the worst case, right.

Chen: Right. I think it's when you wake up. And there's just things that they still don't know about neurology, where with all the tests that they do, they still don't know exactly what was part of that left temporal lobe. They don't exactly know. The obvious things are peripheral vision. There's a high a chance that you lose peripheral vision. But, you know, like seeing color. Certain spots just in your general vision that you can't see. I mean, general memory, period. There's a lot of these little things that they just don't know. - This is called, like, a giant thrombosed aneurysm. So giant means anything that's over 3 centimeters. Thrombosed would mean that there's an actual-- well, aneurysm, more important, aneurysm is just through the actual blood vessels. It starts , for whatever reason, expanding. And so instead of blood flowing through it, there's a spot of that vessel that it starts expanding. And then the thrombosed part just means it's completely calcified, which is a good thing, assuming that that aneurysm, although it's big, it's 3 centimeters, if it's calcified, then it won't be growing any larger.

And then there's sort of capillaries, that over time, have grown and been able to push around that. If you get an aneurysm over a 24-hour period, that is almost, guaranteed that even if you were to survive, something's going to have some permanent damage because you have to be rushed into the hospital because a blood vessel just bursted in your brain. In this case, it seemed like it was calcified over a long period of time and then capillaries kind of grew around that so the blood was still actually moving from one side of the brain to the other, and none of it was actually leaked out. And so, the surgery ended up going in there and kind of decalcifying it, removing what was 3 centimeters down into maybe a small raisin size. And you put these two aneurysm clips on both sides of this raisin. So, in the case that the blood begins to flow again, it doesn't get out and it's actually clipped.

Hancock: How long was the procedure?

Chen: Again, I was going to say I have no idea.

Hancock: You have no idea, just--

Chen: Because you wake-- and it's general anesthesia. They countdown, you know. There's always preparatory work beforehand, and then you go in there and it's just the actual surgeon, you don't even see him. There are all these meetings in preparation, but the day of the surgery, you're getting all this preparatory work done before the surgery room. You're getting put into the operation room. And there's just people milling around. But you have no idea who's who, what people are doing in there. The anesthesiologist, that's an important one.

Hancock: Absolutely.

Chen: And they come in and then they count down this, you know, you have 5 seconds, 5-4-3-2-1. And I just remember 3; that was the last number. And then you wake up some so many hours later, and then--

Hancock: What did you think when you woke up?

Chen: I don't know if I was really thinking much. I would say that it's amazing how you can have a scalpel inside your brain and then in 45 minutes after they patch it up you can be engaging in a conversation again. Like that somebody's inside our brain cutting up parts of it, decalcifying it, putting clips in there. And then as soon as they patch it up, you just wake up and you're talking again. But, you know, I was put into ICU for a couple days and then everything seemed to work out. They were doing all sorts of tests. I think you have to do so many, walk around so many steps before you get, I think you can get taken out of the ICU, and walking up and down stairs before-- Or, you know, before you can actually leave the hospital. There are all these checks on you throughout the time while you're in the ICU. And things looked like everything was going well. I think within three days I was out of the hospital and yeah, to think that you can go inside the brain, cut it up, and then be out in three days.

Weber: Oh, what a relief. Boy.

Hancock: It's incredible.

Weber: You have to feel like--

Chen: But I should, wait, because that's just the beginning. <laughs> That was 2009. I think in Western medication, whenever something like this happens, there's basically two avenues to go down. There's containment of whatever the problem is using medication, but it doesn't fix it. It just maybe raises your threshold, makes it a little bit difficult, more difficult for the seizures to occur, but it doesn't fix it. The only way to really fix it is to go in there with a scalpel and cut out whatever the cause is. So if you go through the operation and if any time after that you still have an event, that is indicative of something that

compelled you to go ahead with the surgery in the first place, that means that the surgery wasn't 100 percent successful. And so, unfortunately, in 2009 for a couple more occasions there were seizure-like events, you know.

The only thing that could be hoped for at that point was that, okay, albeit it wasn't 100 percent successful, it improved things and so can you still get back on to medication maybe at lesser amounts than whatever it was before? Compressed together and summarized, it's that I don't really think that I got much better. I mean, now I'm thinking back from, like, 2018-2019, and so I have a far better analysis and a far better view of the actual events and what happened. I don't think it got any better. And this is getting into the details of it.

You stopped having these tonic-clonic seizures, but you started having smaller seizures that are only about 10 seconds in length, but it is still the brain being rendered inoperable during that time. If you were there, if you're a casual observer that's not educated in this area, you would actually have no idea. It would just be seeming like someone was just staring blankly for 10 seconds. But my wife, for example, Jamie, she knows exactly when something's happening. A doctor, a neurologist, they would know, especially given medical records. So throughout that time as it kind of went from 2009, 2010, 2011, still was working at Google at the time, still was working at YouTube, although after the surgery, I took some time off and even going back, it was, it, I think maybe the silver lining is that it puts a different perspective on the priorities of what we're living for in a way.

It's uncontested that I am honored to have been the person that created something like YouTube; but at the same time, had this not happened, I would probably be, I just turned 40 this year or last year, I would probably still be working 80, 100 hours at YouTube right now, today. I don't know if I would be married. I don't know if I would have kids. I don't know if I would be doing anything other than, every year going to do more Democratic debates or Republican debates, traveling and doing all the things that I was doing. So, I think in some ways, even though eliminating specifically the actual aneurysm and the surgery altogether, I'm healthier for it. And so that's kind of the silver lining. At least that's what I try to say. All in all, it's probably net positive.

But throughout that, there was a grand transition. The beginning starting line being the surgery, but after that, it was things like, you know, getting married, kids, thinking about doing something other than just 100 percent focused on YouTube, right. I think there was still a part of me that still says that if health was not an issue, if there was no fear that I could push all these things, I can go three days with very little sleep or I could go with a lot of stress and a lot of travel and all these things, I would probably still,-- I think there is still a passion for being an entrepreneur and just trying out new ideas and trying to create solutions through whatever, through technology for problems that people face. And in fact, even after leaving Google and YouTube after this, a year and a half or so after the surgery, I still got back together with Chad to create another company. Still got back together with some of the ex-YouTube and ex-PayPal guys that I'd worked with in the past to create another company. So there's still something there that you know, I think call it, like, almost a personal, selfish passion that when I'm not doing, when I'm not taking care of the kids, when I'm not, mowing the lawn or whatever it is, what I like to do in my free time is

to create and program and build something. But I know that it just won't ever be at the same level of energy and time commitment as it was during that PayPal or YouTube time.

Hancock: Well, thank you very much, Steve, for sharing in such a personal way here with us about that experience and--

Chen: Oh, but oh, shoot. I should say, wait--

<laughter>

Chen: Before that.

Hancock: You have more to add.

Chen: Yeah. Chapter two is throughout that period from 2009 to 2018, exactly, actually, May 18th 2018, things didn't really completely get better. And so, there was a neurologist. I moved down from San Francisco down into the Palo Alto area. I went from UCSF to Stanford Hospital. There's just so many changes, so it's really hard to say. Having kids, having a family, moving, working, medication changes, the surgery itself. So, who knows exactly what were the causes of some of the results of it? But what I was saying is that instead of having these what are called tonic-clonic seizures, they turned into complex partial seizures. And so instead of being out for a few hours and then having to sleep for a few days, you have something that's 10 seconds, you kind of wake up. You still probably feel a little bit like you need rest. But after 10 seconds, you're back, and you never even fall. You're on your feet the whole time.

But the frequency increased, to the point, where-- and it was gradually increasing to, you know, it was maybe 2009, the year of the actual surgery, 2 times, 3 times. But then it started gradually, increasing to the point where 2016-2017, it was almost happening every say, like month and a half or so. And then it started getting to the point where coming from this scientific-engineering background, you're trying to almost evaluate every single second of your day to figure out. And some of the doctors don't think that there's any causal effect of this. It's just a pointless exercise to try to deep dive into. You have a seizure, but don't look at what you did the hour, two hours, the day, two days before because it has no relationship. Frankly, I think that that's BS. I think that there's definitely a causal effect to it, that not every day is the same. Just because I know that in the past it's always been a matter of stress and sleep and, you know, alcohol is a big contributor to it, especially when the actual alcohol leaves the system, when it's even exercise, when it's the exercise, you're actually putting a lot more stress on your muscles. But then it's actually regrowing, and that's-- I mean I think there's a lot of these, and only because of the seizure events have I actually started deep diving into this.

But it started happening a lot more frequently. And so, the reason I said May 18th, 2018 was because that was last year, I think, exactly 363 days ago. So, we're almost a year from, exactly one year since my second surgery. I actually went through a second surgery last year at UCSF, and this was a lot harder to decide on, because I think the first one, yeah, worst cases, you know, you don't wake up. But I think it's different when you have a six-year-old and an eight-year-old Then it's all right, worst outcome is you don't

wake up, but, the impact for the family and specifically, you know, for the wife and the two kids. And remember, my brother's a doctor and he also said that you have to go talk to your kids before this. They may-- a six-year-old has no idea what a neurosurgery is, but you have to have this conversation with them that there's a chance that, you know,--

Hancock: You had a conversation.

Chen: On Friday. It was on a Friday. Both surgeries on Fridays. And so, you know, "Daddy's going to get this surgery done on Friday." And you know, Ethan, my younger one, he had no idea what I was talking about after I told him I was going to have the surgery, "And I just want to tell you that, you know, Daddy loves you and--" And he just went off and I was like, "Oh, that's--" He gave me a hug and then he went off and jumped and played. Jaden, my older one, he had a lot better-- and he's eight-years-old. He had a lot better idea of what I was talking about. I mean, he understood and he was there for a while, just trying to soak it all in. You know, unfortunately again, it doesn't seem like it-- Well, so the first surgery was very, I think it was still going into the brain and operating, but it was a surgery that didn't remove anything from the brain. It was more like mending something that seemed to have been developed strangely over the years. This surgery, this last surgery 363 days ago, was a lot more serious. It removed a part of the left temporal lobe. And that sort of looking at the hippo campus area. That's even a bigger question as to, "All right, we're going remove a part of your brain this time and when you wake up," forget, like peripheral vision, you know. <laughs>

Hancock: Yeah. <laughs>

Chen: Like, are you still, like, anything? I mean, things like just vocal speech, vocabulary. There's all this that could be impacted. And again, the state in which neurological research is, we don't really know until we finish the surgery, you wake up. And even for three, four, five, six months, your brain is still in this recovery phase, so it's not a good time. You're supposed to go and see them right away, three months later, six months later, 12 months later, just to do more tests.

Luckily, the surgery went okay, and peripheral vision was fine. And being able to answer all the questions that were asked of me. And again, it is such an odd experience I mean, the same thing, counting down 5-4-3-2-1, I was again on 3. I don't remember anything and then you just wake up and it's a completely white room. Everybody's dressed in white and, you know, it's a unique color in there. But as I was getting carted, wheeled out on the bed, it was a different surgeon, a neurosurgeon named Dr. Eddie Chang, this time, still at UCSF, one of the top epileptic surgeons in the country. So again, lucky to be in this area. Waking up from that and the first thing I said was, "Good to see you, Dr. Chang. When are we going to do the surgery?"

Hancock: <laughs>

Chen: And again, I have no idea how long that surgery took. I know it was multiple hours. I knew it was a four, five-hour surgery and with general anesthesia all throughout that process. But again, you know, you go in there at 6 AM. You start preparing and you're in the hospital the whole time. Everything appears the

same. I really don't have any idea whether it was 1:00 PM that I woke up or 6:00 PM that I woke up. Again, 45 minutes ago, he's in there cutting off pieces of your brain. And then 45 minutes later, you're asking, "Dr. Eddie Chang, when are you going to begin the surgery?" And he was happy to hear that and say, "We're done with the surgery."

Hancock: So, he's really happy to hear you say--

Chen: And I was so happy to hear that we're done with the surgery. <laughs> I'm glad to hear that answer.

Hancock: That's wonderful.

Weber: And that you're talking and-- <laughs>

Chen: Yeah, yeah, yeah. And the kids were there right afterwards. But it's, again, and maybe this is diving into sort of something that's not relevant here, but in September 30th of 2018, there was another daytime seizure that still happened. I have these Nest cameras in the kids' rooms and I was putting one of my kids to take a nap. And so, it happened in that room and it was caught on the Nest camera. And so, there was something that you can share, and it's viewable by other professors or doctors and it's indisputable that there was a seizure event. And again, it was like a ten second seizure event. I think that again, if I were to draw a silver lining, it's that it's good that it keeps things a little bit more anchored and grounded to say that just don't go too crazy with what you do in life, but do enjoy the experiences, the day to day. And so, I think that the lucky thing is that that threshold has been increased quite a bit. I'm still able to start working on companies again, investing, meetings, doing all the things, doing travels, doing talks and so forth. But I do know that at the same time, if I go for two or three days without adequate rest, for example, something-- something may happen.

END OF THE INTERVIEW