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Hey, everyone, and welcome back to FYI, the four-year innovation podcast.

I'm Michael Kroemer, a product marketing manager here at Arc. On today's episode, we will be featuring a public live on which Associate Portfolio Manager Nick Grouse and Autonomous Technology Director of Research, Sam Corris, discussed the ongoing streaming wars between the likes of Netflix, Disney Plus, and others. Their conversation was originally recorded on August 4th, 2022. Thanks for listening to FYI, and we hope you enjoy today's episode. Today, we're doing back-to-basics streaming wars. Nick, what did you stream this weekend? I've been watching the animated Clone Wars series. I've been recently going back to all the Star Wars content on Disney Plus, and now I'm in the Clone Wars animated series. It's actually quite good. Interesting. Disney Plus. I've never even asked a friend for a Disney Plus password. Because you already have it from your parents, right? Maybe. This weekend, I still have 30 minutes left of it. The Gray Man. Oh, that was good. I watched that as well. Just nonstop running and gunning. I saw a great take on Twitter. It was someone saying that the Gray Man is what Dolly, which is that open-source AI service, would create for an action movie. That it's all action, no real character development. But I thought it was good.

Interesting. That take. The first time I felt like an algorithm wrote a movie was bright. Do you remember that? Which movie? Bright is 2017. Oh, Will Smith. Yeah. RIP, Will Smith. But Will Smith and the blue guy. Yes. That was an interesting one as well.

Enough about our recommendations. We're here to talk about the business side of it. Streaming wars. We got a lot going on here. Netflix, which has historically always been subscription-based. People share passwords. They try and cut down on people sharing passwords. They start losing subscribers, and now all of a sudden, they're turning to advertising. Are there too many people streaming? What's happening in the broader market here? This is a great place to start. There's been a lot of news here. We'll first start with Netflix, because I do think it's important to your point. Netflix has always really been the poster child of the streaming movement. They started in 2010 with their streaming initiatives and have really forced all other players in the space to develop their own streaming services. I think the title here is appropriate, but really walking back a few years is when you had the bulk of the streaming wars playing out. It was actually in 2019 when you had Peacock, Disney+, HBO Max all launching into the market. There were concerns about, is Netflix going to be able to grow through this competition? Actually, what we saw is continued growth. One, because of the pandemic boost, but also because I think if you look at what the competitors did for the space, was draw more attention to streaming services at large. Netflix probably benefited from all of that news attention from the beginning. Now that you have the COVID hangover, people are back to work. People are

back to school. People are outside traveling. You're seeing increased churn as well as increased competition with the likes of Disney+, HBO Max. There's a ton of content. People are calling this really the golden age of television, PeacTV. You hear all of these terms to really describe the amount of content we are subjected to and just how easy it is to get access to it. I think what we're seeing now is this shift from subscription video on demand, and that's to shorten that term up. It's typically referred to as ESPOD, and now we're seeing the shift toward AVOD, which is ad supported video on demand services. Both of these are not new. AVOD is now getting a lot of attention because the business model itself for subscription video on demand services come under fire. We're in this tough market environment. Investors are wanting to see profit. They're wanting to see growth on the bottom line. Now we're seeing all of these services take aim at ad supported video on demand. It's a time test and proven business model showing advertising is what we're all used to from the linear TV cable and broadcast, and you're also paying a subscription. That's actually what we think Netflix is going to roll out here. We'll see a service that costs probably a third or maybe a guarter of the price of Netflix premium. You'll see ads with that service. I think Netflix is approaching this from two angles. One is obviously on the revenue side, to help drive profitability, but also to help drive new user growth. In one of their previous reports, they actually disclosed for the first time this password sharing and just how prolific it is. We were just joking in the beginning there, but Netflix reports over 100 million households are using the service for free or password sharing. I think their aim with the ad supported service is to drive some of those users. I think you'll see simultaneous password sharing crackdowns by Netflix along with the rollout of their AVOD service. Interestingly here, Netflix, their DNA has always been in the subscription video on demand. Even if you go back and listen to a decade plus of Netflix earnings call, they have always been focused on subscription video on demand. I have really slighted the idea of advertising saying consumers do not want this, but now you've seen a 180 from them. You actually do see services have a lot of success with advertising. Hulu is actually already where Netflix wants to be in that Hulu you can pay for a premium service, see no advertising or pay a little bit less on the subscription and up front side and see advertising. Actually, I think the number here is around 70% of all subscribers choose that ad supported tier paying less and being subjected to advertising. This seems like we unbundled. Are we about to start the re-bundling phase here? Whenever I watch normal linear TV now, I'm like, I can't believe I have to watch this ad and now that's where we're going back to. It comes down to consumer preference. There is really no reason for these services to turn away from advertising. There's going to be demand in terms of advertising dollars and there's going to be demand from the consumer and people are willing to pay a lower price than watch advertising as proven out by Hulu and some of these other services that have split tiering. What I was going to finish with here is just a last point around Netflix, not really having the DNA for advertising. They've gone out and picked Microsoft as a partner to develop their ad technology. Microsoft acquired Xandar, which is a sell side platform. They're going to work with Microsoft to develop their advertising technology and work with them to develop this advertising tier, which is a really interesting choice. I don't think a lot of people expected them to choose Microsoft. Xandar is a relatively recent acquisition for them and not to mention from our point of view, we don't believe that Xandar is really up to the task yet. There's going to have to be a really big lift within Microsoft to get Netflix ready for prime time and to be able to support the demand we think is out there for their advertising tier.

Now, it's interesting you say that. You say there's strong demand for an advertising tier and that brings us to someone like Roku who got annihilated on the advertising side of things. How do these two fit together? You're trying to twist my words around on me. I'll do my best to kind of explain the story and maybe break it out into the short to medium term picture and then the longer term picture. In the short to medium term, you are right. There has been a pullback from advertising in the digital space at large. This is going off multiple earnings reports. You spoke about Roku. I think that's a great example, but you also have Snapchat. You have Pinterest. You have Facebook, Google, all of these different behemoths in the digital advertising space reporting that somewhere in the middle of Q2, there was an abrupt pullback by advertisers. This is probably right around when recession fears and talk started to pick up in mainstream news. I think advertisers are very quick to pause advertising when there are unknowns in the market. They're also very quick to turn that advertising back on once they feel like they have a grasp of what the next few months are going to look like. Digital specifically is a place where advertisers are going to cut guickly. One, because these relationships are mostly done programmatically, the advertising is done in a short term manner. You're not advertising for content out six months. You're actually buying the advertising slots for a week or a day ahead of time. It's very easy to toggle that type of spend on and off. You have a great ability to maneuver that spend and protect yourself from this uncertainty in the market around recession talk and fear. That's the short term picture. You're right. Just to give everyone a frame of reference for Roku. Roku was previously in Q1 reporting and guiding for full year growth of around 35 to 40 percent. In Q2, they saw that abrupt pullback from advertising and they've decided to pull their guidance for the full year and guided so the third guarter just to growth of 3 percent year on year. A big surprise to the market. This again has a lot to do with what's considered the scatter market. The scatter market is what I was just describing there in terms of the spend that happens on a day-to-day basis or a week-to-week basis. It's the spend that's not a part of the upfront. The upfront is important to understand here especially within the connected TV and TV landscape. The upfront is a few months of advertisers and the TV ecosystem

getting together and deciding to spend around content that's planned for the fall and winter. So it's advertisers spending around content that's planned months into the future. And so that is typically harder to pull back on. They're planning to spend around content in the future so you don't typically see that type of abrupt pullback around upfront spend. And Roku actually did have a nice note here for Roku as they actually saw a billion dollars in commitment for their upfront this year which actually represents 16 percent of CTV ad spend. What's CTV?

CTV. I know I'm throwing a lot at everyone but this is a very complicated space and there's a lot of moving pieces but CTV just refers to the connected TV landscape so really all of your streaming services, all of your OTT which is over the top again just another way to refer to streaming

CTV or OTT. And then so that one billion dollars is 16 percent of upfront CTV ad spend and five percent of total upfront spend.

Can you kind of explain to me? I agree. One it's pretty complicated but so it's like you have Roku. Roku is a TV but it's also an operating system. On those Roku TVs it's like I watch Netflix on my Roku TV. I watch HP on my Roku TV. How does Roku fit into this in the competitive

landscape versus all of these other streaming competitors?

So let's double down on the Roku talk here because I do think it's a really important story to understand when you begin to look at the CTV market or the streaming space as a whole. So you're correct. Roku is an operating system. It's a purpose built operating system for television. So in the same way that you have iOS and Android or purpose built operating systems for mobile, Roku went out and built a purpose built operating system for television. This has a few advantages. It means that when they partner with TV manufacturers, so I will correct you on one statement you made, they actually don't produce any of their own televisions. They work with partners. So typically if you go to Walmart, Amazon, Target, wherever you're going to buy your television, I'll throw in Best Buy there too. You'll see Roku TCL or Roku Hisense or Roku Sharp. So they work with OEMs and this purpose built operating system gives them advantages over say a Fire TV or even a Google TV because it means that they're able to operate on cheaper chips and also run with lower memory costs. So Fire TV, Google TV, Apple TV, these are all forked versions

of either iOS or Android. And so that has its own complications. Typically these systems run out in terms of you won't receive any new updates as time goes on. Maybe people have that problem. You're not able to download some of these newer services if you have older televisions, but Roku because of this purpose built operating system has the ability to continue to send out over-the-air updates and actually allow TV manufacturers to build cheaper televisions, which is very important because consumers are very price sensitive when it comes to televisions. Roku as the operating system functions in the same way that an Apple or an Android would function within an App Store. So you have the Google Play Store, Apple, iOS or the App Store and they're both taking a cut of spend. I think the typical take rate for both of those is around 30% and that's actually where Roku looks to take. But the difference here is Roku will take 30% of the ad load of these ad supported channels and they'll look to take a percentage of subscription fees if a user signs up for saying Netflix or through Roku. They operate in that similar platform like manner, same way Apple and Google do for mobile App Stores. We spoke about the short term. So then short term turbulence, why is the long term different? So in terms of the short term, what we're seeing is advertising pullback across the board. It's not just CTV. It's not just social. It's across the board. We're seeing advertisers pullback spend where they can. But typically what we see when we come

these periods of uncertainty is increased spend on the most efficient platforms. And so we always like to point to 0809. When you had the great recession, what you saw was again, same type of pullback across the board from advertisers. At the time the dominant platforms are where most of the advertising dollars were flowing to. It was going all into print. But at the same time you had a ton of people probably canceling their newspaper subscriptions and moving over to the digital space. They were spending more time watching television. They were spending more time on social media. And at the same time you had those platforms building out better capabilities in terms of advertising efficiencies. But during that period you saw a cutback across the board in advertising. But as we came out of 0809, you saw continued decline in print, but acceleration and growth in both TV and digital spend. In the pandemic we saw this same type of phenomenon happen where you saw broad-based cutting as we came out of the pandemic

and as we came out of that period of uncertainty. You saw increased spend on connected TV

platform

coming from linear television. So that's your cable and broadcast. Now what we're seeing again is that cutback across the board, so linear broadcasts, cable, connected TV, digital, all being cut. If you look at the guidance from a few of these names, everyone's guiding to low single digits growth or potentially negative growth for Q3. So this is not just a Roku phenomenon. It's not just a Snapchat, a Pinterest, a Facebook. It's happening across the board. But what we think will happen now is what we've already witnessed coming out of the pandemic, what we witnessed in 0809, and that's going to be increased spend on the most efficient platforms. And we think connected TV offers significant efficiencies over linear. You have the ability to spend programmatically. You have the ability to target audience with much more accuracy than what linear offers. Roku has the capability of automatic content recognition. So being able to understand what the consumer is watching, when it's watching it, being able to anonymize that data, send it out, have that first party advantage, which is what you would want to see from advertising platforms. That's how Facebook and Google really paved the way within digital. They have these first party walled garden ecosystems. And we think Roku has that advantage as well, given that you have to opt in, you sign in with a Roku account, you upload your credit card information, you upload your address. So they have all of this data on you. They're able to target you much more efficiently than say linear. It makes sense to me. Maybe I'm biased here. Short term issues, but a secular change is happening from linear to streaming. And really that alone is enough. But then you also have these added features and smart shopping capability that could come in. It's not just the efficiencies on the advertising side. It's also the size of the audience you're advertising to. To give just a guick example or data points for this past guarter, Comcast reported that they dropped, I think, around half a million cable subscribers. Meanwhile, you have Roku, which added 1.8 million new active accounts. We like to say that the TV operating system is the cable box of the next generation of television, meaning that it really becomes the gatekeeper, becomes the endpoint distribution to the consumer. So it operates a very important space. That space used to previously be occupied by cable companies and broadcast companies. But now you have TV operating

systems stepping into that role. And you're seeing scale, which was never capable with cable or broadcast cable because it's very capital intensive. You actually have to lay cable across the country. And that typically doesn't scale to a global level. But when you are dealing with connected TV and dealing with over the top and streaming, you are able to reach a global level. And you see that in the data from Roku. Roku is the number one TV streaming platform in the US, Canada, and Mexico by our stream. That is a very important piece to this story because streaming as a whole is not just a national opportunity or a US opportunity. It's a global opportunity. You see that with the numbers from Netflix and Disney Plus and HBO Max. All of these platforms have the ability to scale to a global level, which means that the opportunity here, the way that we look at this TAM opportunity is to look at the number of broadband households globally. And that's around a billion households globally and growing. When you look at the numbers from Netflix and Disney Plus and Roku, Roku is at a little over 60 million active accounts. Netflix is over 200 million Disney if you combined Hulu, ESPN, and their Hot Star entity, over 200 million. There's a ton of runway here to continue to grow. You're going to see choppiness in that growth. But long term, the opportunity is global. And we think it's really important to focus on this opportunity being global because that changes the number of dollars out there that are going to flow to these

platforms at the end of the day. So Nick, you know how this works. Five-year prediction. This is a great time to plug our five-year prediction for Roku, for the streaming space as a whole. We just recently put out an open source model on Roku. So I know I've been bouncing around from CTV, OTT, SVOD, AVOD. I've been throwing a lot at everyone and I do apologize from that.

My brain gets a bit scattered when we talk about this because there's so many different pieces. I mean, all of these pieces are equally important to the story. But to see the concise, I think, a very well-structured thesis around Roku and connected TV, you can head to the arc-invest.com website. I apologize for the shameless plug, but I think the team, myself, Andrew Kim, and the rest of the arc team are really proud of the work that we put into this. And we think, even with the disappointing earnings around Roku, the long-term story is still intact. We do firmly believe that the opportunity here is still that global opportunity I just spoke of. And you'll see all of that really broken out in the open source model. We have all of our TAM projections. So you'll see those broadband numbers. You'll see the number of connected TV households. You'll see all of this broken out in the open source model. And then the blog details in depth, all of the different components we've already talked about today, and more specifically geared towards Roku. So I won't spoil the blog. A long way to not answer the question there, Nick. Yeah, exactly. I agree. I should go check it out. Exactly. That's a long way of saying I'm not going to give my prediction because I want everyone to go see it and drive the views to the open source model. All right. So Nick, now that we're done business, we'll go back to the personal anecdotal here. Do you pay for Netflix? I do. I think another show that everyone should watch. This one slipped my mind when you asked me that question. But The Bear on Hulu, phenomenal

show. It's about the restaurant industry. It stars, I don't know the actor's name, but I remember him from Shameless, which is on Showtime. He plays Lip on Shameless, and he does great job. Jeremy Allen White. Is that the guy? I'm going to say yes. I don't know. The other one people keep on telling me is the guy from Nathan, for you, Nathan Fielder, is New Show. People say that's funny. Yeah, that's on my list. That's on my list. The rehearsal. But Nick, how much would you pay for

Netflix a month? What's the price point where you say, okay, maybe this is worth it? I think if it gets over \$30 a month, you have to begin to question the value of the service. They're trying so much in terms of gaming, advertising, to continue to grow here. But at the end of the day, they just need to provide great TV and movies. When you think about it, so for me, it's like, all right, if I didn't have Netflix, would I get by with just Amazon Prime? Yeah, probably. It's like, Amazon Prime's got enough good content. It's like, not great, but it's good enough. And then YouTube. Is YouTube brought up in the stream wars here? I feel like they're not spoken about, but obviously a huge amount of content there. Well, what's interesting is, and this is something Netflix will talk about, in terms of competition, Netflix doesn't just compete against HBO Max or YouTube. They compete against all leisure activity. I remember one quarter when they talked about, we're competing against sleep. At the end of the day, all of these platforms on the consumer facing side of the internet are competing for eyeballs in time. So Netflix doesn't just have to compete against HBO Max and Disney Plus. To your point, they have to compete against YouTube. They have to compete against TikTok, Snapchat, Facebook. This is a very competitive market. And I think, to your point, would people be fine if they weren't subscribed to Netflix? They'd probably get by

most of the year until maybe one of the shows that they were committed to, like Stranger Things, then you sign up and then you cancel again. I think you see that in some of the second tier services where people will take the free trial, watch the show they want, cancel the free trial, or pay the \$7, \$8, \$9 fee for a month and then cancel. Maybe you see something like that continue to shape up in these services as there's so much content out there. I mean, you think about what's coming in terms of getting people excited on this call. You got The Lord of the Rings show coming. You have the preguel to Game of Thrones. There's so much great content out there. Nice. All right. Any last words before we wrap it up with the disclosure bookend? Oh, I'll end on this. If anyone has any questions, I know I was all over the place. I tried to get as much information as I could in this short period of time. But if anyone has any questions, feel free to reach out to me either here or on Twitter. And I'm happy to answer all questions here. I love talking about this stuff. I'll end on that. Sounds good. And if anyone wants any streaming recommendations, also feel free to reach out to Sam. Yeah. It's Nick's job. Nick watches it professionally. All right. So the information provided in today's session is for informational purpose only and does not constitute an offer solicitation or recommendation regarding any investment product or service. Any references, not endorsement by art nor recommendation by seller or hold. We cannot discuss any private or non-public material information of any kind. Participants should determine for themselves whether a particular service or product is suitable for their investment needs or should seek professional advice for their particular situation. Certain statements on today's call may be statements of future expectations or other forward-looking statements based on art's current views and assumptions and involve both known and unknown risks and uncertainties. That could cause actual results, performance or events to different material from those expressed or implied. Art does not assume any obligation to update forward-looking information and all information discussed today is subject to change without notice. In addition, certain information was obtained from sources that ARC believes to be reliable. However, does not guarantee the accuracy or completeness of information obtained from any third party. That's it. Thank you everyone for joining us and we'll hopefully see you all next week. Yeah. Thank you everyone. ARC believes that the information presented is accurate and was obtained from sources that ARC believes to be reliable. However, ARC does not guarantee the accuracy or completeness of any information and such information may be subject to change without notice from ARC. Historical results are not indications of future results. Certain of the statements contained in this podcast may be statements of future expectations and other forward-looking statements that are based on ARC's current views and assumptions and involve known and unknown risks and uncertainties that could cause actual results. performance or events that differ materially from those expressed or implied in such statements.