# Deutsche Bank 2020 Technology Virtual Conference

## Company Participants

- Colette Kress, Executive Vice President and Chief Financial Officer
- Stewart Stecker, Director, Investor Relations

## Other Participants

- Ross Seymore, Managing Director, Deutsche Bank

## Presentation

### Ross Seymore {BIO 20902787 <GO>}

Hi. Good afternoon, everybody. We're pleased to start the next presentation at the DB Technology Conference. I'm Ross Seymore, Semiconductor Analyst here at DB. We're very pleased to have Colette Kress, the CFO; as well as Stewart Stecker from Investor Relations from Nvidia today. Obviously, a very, very exciting day for Nvidia with its announcement last night of the intention to purchase Arm, and this will be mainly a fireside chat. If you have any other questions, you can email them to me within the webcast system or directly at ross.seymore@db.com.

Before we get started in the fireside chat, I want to pass it over to Stewart just to run through some of the disclosures from the Nvidia side. Stewart?

### Stewart Stecker {BIO 17308457 <GO>}

Great. Thank you, Ross. During this call, we may make forward-looking statements based on current expectations. These are subject to a number of significant risks and uncertainties, and our actual results may differ materially. For a discussion of factors that could affect our future financial results and business, please refer to our most recent Forms 10-K and 10-Q and the reports that we may file on Form 8-K with the Securities and Exchange Commission. All our statements are made as of today, September 14, 2020 based on information currently available to us. Except as required by law, we assume no obligation to update any such statements.

With that, I will turn it back over to you, Ross.

## Questions And Answers

### Q - Ross Seymore {BIO 20902787 <GO>}

Thanks, Stewart. So, Colette, why don't we jump right into the Arm deal, and I have some strategic questions, some financial questions and then some regulatory ones?

So, why don't we start on the strategic side of things? You held an investor call this morning at 8:30 Eastern Time. But just to go over some of the highlights on that, what's the strategic vision you guys have for the combination of Nvidia and Arm?

## A - Colette Kress {BIO 18297352 <GO>}

Yeah, absolutely. So, correct, yesterday afternoon was our announcement of our plans to acquire Arm. This acquisition we believe creates an opportunity to become the premier computing company for the age of AI. This gives us the combination of Nvidia's leading AI computing platform along with Arm's vast CPU ecosystem. And it positions us in the right way for the next wave of computing as we move into the age of AI.

Our hopes are to expand Arm's IP licensing portfolio with Nvidia's technology into some of these large end markets that Arm has, including mobile as well as PCs. We also hope to turbocharge Arm's server CPU roadmap pace and accelerate it into the data center, edge, AI and IoT opportunity. This gives us the ability to reach even a larger overall developer community than we have alone. Our developer community, for example, is about 2 million folks that use CUDA as well as many of our other platforms for gaming and otherwise. And now, we have the opportunity to address more than 15 million developers that are on Arm. This deal is financially attractive to us. It has a high margin, reoccurring revenue platform business and we expect at close for it to be immediately accretive to our non-GAAP EPS and gross margins.

## Q - Ross Seymore {BIO 20902787 <GO>}

Great. Thanks for those details. If we delve a little bit deeper into this, it seems like you can bring the Arm IP up to a higher level of processing power, servers, data center, that sort of thing. And then as you said, you can bring the Nvidia IP down to the broader market of mobile devices, et cetera. How do you envision the Nvidia IP going into those mobile devices? If I go back into the past, you had an IP licensing model to a certain extent, it was much more narrowly focused with Intel at one point and then I believe you tried to do a licensing model after the Intel deal ran its course. So, talk a little bit about how you plan to bring that Nvidia IP to market via this Arm acquisition?

## A - Colette Kress {BIO 18297352 <GO>}

Yes, that's exactly our plans and focusing on Arm's IP portfolio, which is broad, probably one of the broadest ones out there in the market. They have the focus in terms of licensing their architectures, licensing their cores, which comes back as overall royalties. The overall devices, IoT devices, phones or other way that have been sold or in market is probably a market of more than 180 billion. And per year, there's about 20 billion devices and such that are overall licensed with overall Arm. But what is unique is Nvidia has the world's best GPU technology and something that the billions of mobile users can likely benefit from.

So, right now, they have overall mobile compute capabilities and now we have the ability to both still provide availability to their existing overall GPU for mobile, but now add an additional overall licensing technology with our overall GPU technology. This can be things that can assist in terms of AR, VR, gaming, AI, there is a huge sets

of opportunities out there, even working with the overall data centers to add this as well.

Now, we had tried in the past working on licensing our technology, but we know that Arm has a tremendous leadership in being able to package up what is necessary to serve this overall market. There's a lot of work in terms of supporting that infrastructure once you start licensing it and making the instruction set are usable and easy to work through. So, our focus is going to now be taking that expertise of Arm together with us. It's not that we don't think there is an opportunity, but there was certainly a opportunity here to use Arm to help us get to market, and that's where our focus is going to be after we close this deal.

## Q - Ross Seymore {BIO 20902787 <GO>}

So, strategically, do you see the benefit of this being more the ability to combine the IP and offer it as one bundle more like the Arm business model or taking what Arm brings and allowing it to accelerate Nvidia's ability to deliver actual silicon with that IP, which direction do you think is most beneficial or is it actually both?

## A - Colette Kress {BIO 18297352 <GO>}

Well, stepping back, this isn't about a bundling situation, this isn't about that, this is really knowing that Arm already has a great following for the architecture and the license cores that they provide and we can provide another option to overall customers in expanding their choice of what would be available through that. So, you're right, it can go multiple different ways. That says, what is the overall customer needing, is the customer needing the overall architecture and an opportunity to develop their own, customize their own and take a chip to overall manufacturing, do they need the overall license cores already built out and what kind of capabilities do they want in those overall cores or do they want something that is completely already taped out, completed overall chip that they can put in times of their systems or our systems together. So, you're right, the optionality there is a both, there is many different types of solutions that can be brought together with Nvidia and Arm.

## Q - Ross Seymore {BIO 20902787 <GO>}

If we think -- and maybe this is the last strategic question, if we think about this asset historically, even before it was sold to SoftBank, it appeared to be one that most believed could not be owned by another merchant silicon provider because of the inherent conflict of interest that would be perceived for anybody that wanted to license from Arm and then could potentially be competing against the owner of this architecture. How do you get around that either real or perceived conflict of interest?

## A - Colette Kress {BIO 18297352 <GO>}

When you think about what Arm and Nvidia are as a foundation of companies, both companies are quite an overall open company and overall agnostic to their overall ecosystem and relatively neutral overall in terms of how they support their overall markets. For example, Nvidia supports each and every overall CPU that is in market today, whether that'd be x86, whether that'd be Power or any other such as Arm and our work that we've been doing with Arm. So, very similar in that manner of both

being quite neutral to their ecosystems and being able to provide their products overall.

The best things both of our companies want to do is make sure that they integrate into all of these different platforms that are out there and creating platforms together for the next generation of AI or something in terms of energy efficiency, like Arm does. So, we believe that Arm and Nvidia are actually quite complementary in total. We believe when we articulate well to our -- both customers that we have as well as the customers that Arm has, they will truly see the benefits that the two companies can now do working together.

## Q - Ross Seymore {BIO 20902787 <GO>}

So, why don't we pivot over a little bit to the regulatory concerns on this. I think much like that potential conflict of interest dynamic that plays into the regulatory concerns as well, it sounds like you've had customer conversations already, Jensen mentioned on the call this morning that Simon had already talked to a bunch of the customers. When you think about the regulatory environment, first, it sounds like an 18-month close, which is at least six months longer than the average deal to close. So, it's -- that seems to endorse that you believe it will be complex, whether it's because of the structure of the deal or the sheer size of the deal. But more importantly than that when you think about customers and competitors on one side or the governments trying to ensure employment and those sorts of things in their given regions, which side do you think is more complex to get this deal done? And how have you engaged with both of those sides, the customers and competitors and then the government side, to get to the point where you were willing to announce this deal last night?

## A - Colette Kress {BIO 18297352 <GO>}

Okay. So, let's first start with the overall regulatory side of this deal. We expect to go and get regulatory approval beginning in the US, probably the EU, the UK and probably overall China. As you know, we have most recently been through that regulatory approval process as we've worked on Mellanox and we're very familiar both with the regulatory teams in each of these jurisdictions, their process and we've actually learned a lot. And I think they have learned a lot about Nvidia during that process as well. So, we believe that, yes, likely under 18 months and sometimes a little bit similar to what we have seen when we did Mellanox. And I think we're basing that based on the work that we did through that overall deal. Mellanox did work on a lot of the data center business. This is a little bit of a larger scope because there's many different overall markets and that is why we've probably added a couple of more months versus how long it took us to overall finish the Mellanox acquisition.

When we think about that regulatory approval, it is really about assuring the availability to customers today and maintaining the overall competition in the market as we go forward. So, when we talk about the complementary mess of overall Arm and Nvidia as well as our plan to commit to the Arm's existing licensing model and essentially preserve Arm's customer neutrality, I think the overall regulatory process will move through quite well. We believe the deal in total is pretty much pro-

competitive in terms of what we have outlined. Nor do we think it will affect any customer and/or any country' access to overall Arm's technology.

So, the second part of the question was really talking about the different jurisdictions around the world and focusing on areas such as the UK. The UK is the overall home of Arm right now. They are based in overall Cambridge. And if you saw in terms of our announcement, we truly want to keep that as their home in terms of where they have developed this technology for over 30 years and where so much of their RP is based. But we believe we can help them and add to what they already have there in the market, focusing on that next wave of AI.

Our plans are to build a AI center in Cambridge, like they're in their home and add to it a set of high top overall researchers that we can have from the overall Cambridge area, Cambridge University and focus on building a supercomputer to build out some of their work that they are also doing in the data center to bring a CPU to such an important workload. So, I think we are focused not only on the jurisdictions, we are focused on the needs of providing the neutrality, the competitiveness and the access that each of all these regions and customers may need.

## Q - Ross Seymore {BIO 20902787 <GO>}

Thanks for all that color, Colette. Why don't we wrap up the Nvidia-Arm discussion with a couple of financial related questions. I believe in the press release and the slide deck, you said that in the last 12 months ending in March, this asset had about $1.8 billion in revenue, 94% pro forma gross margin and about 35% adjusted EBITDA margins. As we look forward on the revenue side of things, we talked earlier about bringing the Nvidia IP to kind of the more mobile end of the spectrum and the Arm IP up to the more data center and server end of the spectrum. Can you talk about the revenue growth assumptions and/or the vision you have for what the revenue growth can look like for this company?

## A - Colette Kress {BIO 18297352 <GO>}

So, that is correct. In terms of what we are purchasing, we are purchasing the overall IPG business of Arm. What will remain with SoftBank is the ISG business, which they have announced earlier of an area to bring to them and potentially sell that overall business. But what we are focused on is the high quality business, the high gross margin and that reoccurring revenue platform that comes with the IPG business of Arm.

What we believe is we have a great opportunity to expand into the current markets that they actually are working today, mobile, data center, infrastructure, automotive and IoT by the instruction of our focus of our technology and being able to license our technology into that market, but we also see an opportunity in working on new projects, addressing markets in the data center and turbocharging the work that has been done there to expand into that business as well. So, it's a little early to talk about what size overall growth that is, but it can benefit I think both sides in terms of growing the markets that each of us are in.

## Q - Ross Seymore {BIO 20902787 <GO>}

And then you mentioned about turbocharging Arm's investment, given Nvidia's greater R&D capacity, I think a lot of that was targeted towards the data center side of things, but it could be a broader statement overall as well. How do you think about the profitability, that 35% number you're looking at, as you're turbocharging that, is that something where the OpEx is going to rise? How does that relate to the revenue? Any sort of target profitability or kind of roadmap on the profitability side of things would be helpful as well.

## A - Colette Kress {BIO 18297352 <GO>}

Yeah. I believe the business of Arm, the IPG business is continuing to improve their overall financial metrics, both their margins as well as the overall revenue on the top line. So, even through the overall 18 months, I think we'll see them actually improve through that period. I think the investments are really helping them build the opportunities in terms of the top line, and I think both of those things driven together could have an improvement in the margins over time. There could be a possibility of getting back to higher margins, some of the ones that we had seen back in the 2016 time before they went private working for SoftBank.

## Q - Ross Seymore {BIO 20902787 <GO>}

Great. And then the last question on this is -- actually two final questions. I'm not sure you're going to answer either of them, but I got to give it a shot anyway. When you talk about the gross margin accretion upon the conclusion of the deal, I think everybody gets that at face value. The EPS accretion seems like it's a little more complex potentially. Are there any significant revenue growth and/or margin expansion assumptions behind there? If you're not willing to give any specific numbers, which I suspect you're not, any sort of assumptions being more dependent on one side versus the other, the revenues versus the margins?

## A - Colette Kress {BIO 18297352 <GO>}

No. There's no specifics on there. Again, the business will likely continue to grow between now and the overall close of the acquisition, which can be accretive. We're buying a business that is profitable right off the bat and I think that will help our overall EPS. And you're correct, the gross margin is an easy piece because it is mostly software. And that does absolutely turn to be positive gross margins versus where our corporate company averages.

## Q - Ross Seymore {BIO 20902787 <GO>}

Great. Thanks for all that color, Colette. Why don't we give you an actual break from talking about the deal today, which I suspect you're going to continue to do after you and I are done chatting and let's go over to different parts of your business and pivot specifically to the gaming side of the equation here. You just announced a week or two ago the RTX 3000 family, the Ampere 7-nanometer or 8-nanometer, I guess, in this case based on Samsung. Talk a little bit about that launch. It seems that performance benefits are quite enormous, but the strategy on the go-to-market side seems to be a little less about the pricing side than the Turing generation or the

Pascal generation and much more about performance and seemingly going for unit growth. So, talk a little bit about the technology benefits that you're delivering and then the pricing and growth targets that you have strategically for the RTX family?

## A - Colette Kress {BIO 18297352 <GO>}

Yes. So, Arm has certainly been exciting over the last 24 hours, but we can't forget our exciting launch of our Ampere architecture for gaming as well. Our GeForce RTX 30 series, the GeForce RTX 30 series is probably one of our biggest generational leap in gaming that we have had. It is 2x the performance improvement versus Turing and it is 1.9x the power efficiency that we have with overall Turing. A unbelievably compelling lineup kicks off our Ampere architecture product cycle in gaming. This will be our second generation of RTX, our real-time ray tracing, which extends our overall leadership in ray tracing with GeForce. It also has 2x the performance that I think you referred to with the overall same price bands or overall price points. This is also our second generation of our RT cores with 2x the throughput versus the previous generation and it's our third generation of our Tensor cores with over 2x the throughput over the previous generations.

So, your statement regarding given that the performance is increasing quite strongly with the overall price points, what can we expect in terms of both the units or is there also an ASP position in here. So, focusing in terms of the growth of the market and the ability to attract both a refresh of their existing overall desktops and/or PCs is definitely an opportunity as well as attracting new overall gamers to this market. Right now, this has become one of the most important entertainment mediums that are out there. A lot of this has been influenced by a change, which may just be the new norm going forward. Many of us are looking for live overall entertainment as we work from our homes, as we teach from our homes and therefore play from our homes or game from our home. And a lot of that has influenced the excitement that this new generation of cards will provide.

The second thing that is very key in terms of why people are coming to the market are the new games coming to the market. Not only did we launch the overall Ampere architecture, we also launched a significant amount of software that will help influence that gaming experience, the gaming experience whether or not you are just a normal gamer and we have new games coming to market using our ray trace technology and/or our DLSS improving with AI that ray tracing experience or you're a broadcaster and looking for keys on how to better represent your work in terms of gaming on the web. So, so many different things to bring people into the market right now to buy gaming.

The price points though are an opportunity for us to continue to raise the bar of that entry level and/or your refresh on where do you want to game at. So, for example, we're really looking about our overall average ASPs for overall gaming. In the past, we've had some volume SKUs, volume SKUs that are very important around the world that allows whether they be first entrants or refreshers that are common for them to both get access to ray tracing at what their overall affordability. But what's been interesting is our top overall performance cards has taken up quite nicely because of the performance and the increased content that we have in terms of with ray tracing. So, we expect probably an increase in the mix of the types of cards that

people are buying and towards the overall higher end. With that, we can also continue to have an increase in average ASPs also influenced by the increase in units from new users as well as those that are refreshing.

## Q - Ross Seymore {BIO 20902787 <GO>}

That's very helpful. You mentioned in answering that a little bit about potentially a structural or secular change to the consumption of gaming in general during the unfortunate COVID pandemic, but I guess there can be some upsides from the gaming side for you guys. About a year ago, you had talked about the base business for gaming at Nvidia being about $1.4 billion a quarter. You then upsided that, did about $1.65 billion, you're there now and now you're guiding to a little over $2 billion. If we think about that increase, about 25% year-over-year or even more versus that $1.4 billion base that you talked about a year ago. What do you attribute the upside to? And how much of that do you believe is sustainable versus some sort of COVID-related pull in that is nice for now, but might actually not persist going forward?

## A - Colette Kress {BIO 18297352 <GO>}

Yeah. So, it's amazing what a year can do in terms of changing so many things here on the planet. So, for one thing, yes, our baseline business and the pieces of growth that we've seen continues to just both change the overall market, but better overall expand the overall market for gaming. So, keep in mind, we have three different overall platforms within our gaming business. We have our overall desktop platform, which we sell cards to our AIC, our add-in-card manufacturers and they put them in the market either through retail or e-tail.

Our second overall market is our notebook business. Our notebook business is currently a very important business, where OEM manufacturers have concentrated in bringing high-end laptops to market for specifically gaming. And with that, bringing that thin and light and the high-performance business that we can provide. Additionally, we have our overall consoles, and our consoles are focused on our Nintendo partner and they are doing quite well with their overall Switch that has been market -- have been in market for some time.

Now, what is interesting is the mix just keeps changing within that business. So, yes, during COVID, there were some changes. The access to the overall retail market at the very beginning of COVID was shut down and things had to move towards what we saw in an e-tail market. We were able to swiftly move with our manufacturers to the e-tail market to address the overall demand that was there. The demand was about working from home, it was about playing from home, it was about teaching from home, but it also was aligned to what we've been seeing over several years that gaming has become an entertainment sport. It is not just about playing the game and winning the game, it is about the overall conversation with your friends, the collaboration with your friends and the connections that gaming provides. We do believe that in this world, everybody will become a gamer at some point.

So, we've seen a shift in terms of COVID, in terms of how those things happened. Yes, we have seen a very interest in this entertainment area, but I think this is just a

continuation that we'll see from now until we get to a new norm. We have a big overall holiday season in front of us, a big holiday season which is fueled with new games coming to market, new games, many of them also focused on ray tracing as this is also the time where overall consoles will endorse overall ray tracing.

Our two-year head start on overall ray tracing can be extremely helpful as we look at the overall holiday market in front of us. This is a time where gamers are in market to buy games and our two years still puts us with one of the top overall GPU technology to really enhance overall real-time ray tracing, not only with the hardware, but with the software. So, overall, yes, there have been a lot of shifts associated with COVID, but more importantly, I think there's just been a shift of gaming to an entertainment medium.

## Q - Ross Seymore {BIO 20902787 <GO>}

Last question for you on the gaming side of the equation is competition. It doesn't sound like the pricing decisions that you made for Ampere had anything to do with competition, but with both Intel coming and not only on an integrated basis, but next year on a discrete basis and AMD launching new higher-end parts within its stack, how do you view the competitive landscape within discrete and notebook GPUs and is it changing at all as you look into the back half of this year?

## A - Colette Kress {BIO 18297352 <GO>}

When you look at either of those two markets, whether it'd be desktop and notebook, we have quite a good hold on the market of gamers. Gamers love our brand. They love our overall working with the ecosystem and all of the in -- technology innovation that we seem to bring to the market each and every single time. Our overall 30 series of GeForce that has come to market couldn't have been a better launch, it is going quite well. The reviews are solid. The excitement is even better. So, we're really excited for this gaming holiday, this gaming holiday with the games.

Games are not necessarily written specific to a platform, games are written so that they can reach as far as they can to all of the different platforms. So, we're well positioned with our overall gaming cards that is really bringing ray tracing and ray tracing that has then continued to improve since the very first day that we announced ray tracing to play those types of games. So, we're excited for this upcoming market in front of us. It's going to be a great holiday season.

## Q - Ross Seymore {BIO 20902787 <GO>}

So, why don't we in the last five minutes that we have pivot over to the data center market, which I think this is the first time that the data center market has ever only been worthy over the last five minutes, it shows how much other excitements you have going on. Talk a little bit about what you're seeing in the end market. There is a relatively active debate about the risk of entering another digestion mode amongst the cloud players. The last time that happened in late calendar '18 and early '19, it hit pretty ubiquitously across the industry, even Nvidia who has great secular tailwinds had a little bit of a pause, temporary as it might have been. So, talk about how you're seeing demand going right now from the aggregate cloud customer base of yours.

## A - Colette Kress {BIO 18297352 <GO>}

Yeah. So, it sounds like we've done a lot of announcements. We've done the announcement that we plan to purchase Arm. We went back a couple of weeks and we announced GeForce 30 series, but keep in mind we've also just recently brought out our Ampere for the data center with our A100. So, we are in the early stages of ramping our A100 architecture for the overall data center. We've probably had a quarter, quarter and a half of results there.

We began that work while working with our hyperscales in the A100 rollout. It was one of the fastest rollouts and speed in terms of getting cloud instances up and running. Google was able to get their cloud instances up in about a month and we've now seen overall Microsoft also up in availability. So, we're in a great position with overall A100 and it's roll out. Next to come is focusing on server manufacturers that have designed and ready to go 50 different designs incorporating A100. This is an ability for those to both have the overall hyperscales, but also the enterprise and the enterprise verticals out there to absorb overall A100.

Now, A100 and its launch is different and our overall work over the last several years has been a true test to both understanding the market, our customers and their needs and it influenced in terms of how we went to market this time. Went to market as we have a breadth and depth of overall customers that both are aiding in terms of the work that they are doing to define their projects to find the overall products that they may need to support the projects that they're doing.

That connection from an engineering standpoint, our assistance in determining the products that would be best for the completion of the projects has really helped influence our both visibility and working together with each and one of our partners as well as customers in this market. We've provided over the last couple of quarters previously our overall visibility for the next quarter, and this is enough of a case in terms of our visibility with our overall Q3 data center revenue and our plans.

We will be up sequentially and we will be up strongly versus a year ago, probably 150% from a year ago with the combination of Nvidia compute as well as Mellanox and it's networking. So, we will continue and strive to keep those relationships with the customers, so that we can help them plan effectively and us to plan effectively in terms of meeting their needs, and I think that is where our focus is. From time to times, projects certainly can be volatile and different, but right now, our visibility for the quarter that we're in is what we're providing.

## Q - Ross Seymore {BIO 20902787 <GO>}

Well, Colette, that's a perfect answer and a great way to wrap it up. We are exactly on time. So, thank you so much for taking the time today to attend our conference and chat with me. I know it's been a very busy and exciting couple of days for you, and it's probably going to continue for a few more, but we appreciate your time. So, everyone, that wraps up our fireside chat with Colette Kress and Stewart from Nvidia. Thank you all.

**A - Colette Kress** {BIO 18297352 <GO>}

Thank you for having us.