UBS Global TMT Virtual Conference

Company Participants

- Colette M. Kress, Chief Financial Officer, Executive Vice President
- Simona Jankowski, Investor Relations

Other Participants

- Tim Arcuri, UBS

Presentation

Tim Arcuri {BIO 3824613 <GO>}

Good afternoon. Thank you. I'm Tim Arcuri. I'm the semiconductor and semi equipment analyst here at UBS. And I'm very happy to have NVIDIA with us in this next slot. We have Colette Kress, who is the CFO, and I'm going to have Simona read the safe harbor beforehand, and then we can launch in this with some questions.

Simona Jankowski {BIO 7131672 <GO>}

Thank you, Tim, for hosting us. As a reminder, this presentation contains forward-looking statements and investors are advised to read our reports filed with the SEC for information related to risks and uncertainties facing our business.

Questions And Answers

Q - Tim Arcuri {BIO 3824613 <GO>}
(Question And Answer)

Perfect. Thank you, Simona.

So Colette, I'm just going to ask you questions in a sort of a grouping first on the gaming business, and then we can talk about data center and then I want to talk about your autos business, and then I have a few other categories of questions as well.

So, let's just start with gaming. And I guess, the first question is that, obviously, demand has been very strong, revenue is up 2x since launching Ampere, you're still growing mid-30s year-over-year based upon your guidance. The question I always get is, how sustainable is this through calendar '22? And maybe you can first sort of

talk about that. But also, more importantly, walk us through the growth drivers for that business as we head into next year.

A - Colette M. Kress {BIO 18297352 <GO>}

Yes. So, a great set of questions. And first, again, thank you so much for hosting us. We look forward to speaking with everybody and being able to answer all of your questions about NVIDIA.

When you think about our gaming business, remember our gaming business has been with us from the very, very beginning. Our gaming growth has continued to evolve over the decades. Gaming is now a broad entertainment sport and influences many different types of participants. It has been an important piece of adding ray tracing, it's been essentially a game changer for the industry. But we've also seen a large rise of notebooks, notebook gaming, high-end types of notebooks. These influence a thin and light type of configuration that also allows you to do great gaming, but allows you to do that gaming, no matter where you are in mobile to take your gaming experience with you.

Additionally, we have seen many additional types of users in gaming. This has been an area where we have seen creatives, we've seen broadcasters and we see many different types of students in the stem population focusing on different configurations, using ray trace cards or just using also their infrastructure for gaming. Now when we think about going forward and we're looking right now at the holiday season that's in front of us, I think that's the most important and closest to us at this time. And we're excited to continue to provide our gaming cards to the market for the holiday in the western world as well as we turn the corner into the new calendar year.

But it's early to speculate in terms of demand trends as we go forward into the next year. But we do believe demand is strong. We believe, right now, the channel inventories are very lean. We believe we still have a great opportunity in front of us to continue to upgrade gamers to that Ampere architecture as well as ray tracing. More and more we see that decoupling from gaming. What we see is all these additional types of opportunities to use the high-end cards and using GeForce to do so. The company as a whole will take the appropriate work to continue to procure more supply, because right now we have situations where that demand exceeds our overall supply. We've been able to grow quite well during this year, each quarter sequentially growing and we do continue to plan to do that for Q4. So, we believe we'll be in a better situation in terms of supply when we look at the second half of next year.

Q - Tim Arcuri {BIO 3824613 <GO>}

Great. Thanks for that, Colette. Can we just talk also about crypto for a moment? I know it's a very difficult question for you to answer, because you really don't know how much, if any, is being bought by the miners. But sort of what feedback are you getting from the channel? Do you -- can you just sort of maybe give us some anecdotes about feedback from channel that convinces you that crypto is not a big factor or makes you worry that maybe it is? And maybe just the potential for the

miners to be flashing the old firmware onto the RTX cards, because I still hear about some of that happening, but it's sort of hard to really determine how widespread that is.

A - Colette M. Kress {BIO 18297352 <GO>}

So, NVIDIA developed a strategy. NVIDIA developed a strategy for lite hash rate types of cards to be coupled with our CMP products, our crypto mining processor products to help steer more of our supply, more of our gaming cards towards gamers, and also to provide those CMP processing cards to our crypto miners. You're correct; it's difficult for us to determine how much maybe crypto mining. But our low rash -- lite hash rate cards only work with our game-ready drivers. Our game-ready drivers that we poster back in May when we announced the lite hash rate card and beyond.

Our lite hash rate cards are also here to target Ethereum. Ethereum is the most popular card that, excuse me, crypto that we see using GPUs. We've heard of reports of software that can be partially improved by the performance of the lite hash rate card GPUs, but it's not able to fully restore. And we understand it would not be effective for those hash rate strategy as an effective way to reduce the value of these cards to miners and steer that supply to gamers. It's been difficult for the miners to buy Ampere GPUs in large quantities. Our CMP is targeted at large Ethereum installations, and for reasons we discussed, we are seeing Ethereum 2.0. And some of the government policies that are out there that has affected our overall desire for CMP out there. We'll continue to watch this overall carefully. We believe that our strategy can be successful in doing the best to really produce these GeForce cards for our overall gamers.

Q - Tim Arcuri {BIO 3824613 <GO>}

Yes. I think maybe just to your point, I think the thing that people often miss when they hear about that is that you can improve the performance may be of lite hash cards, but you're not going to get it up to where it would be. You're not going to get it all the way back up to full performance. So, thanks for that.

And then I guess maybe can we just talk about the trajectory of the supply-demand balance. Obviously, if you look at the pricing in the channel, it's still well above MSRP, which tells you that the channel is still very tight, to your point not a lot of inventory. Can you talk about sort of the trajectory of sort of where you see supply-demand imbalance through 2022? Do you think that you're getting enough supply now? I do want to talk about your purchase commitments. But part of that obviously is for gaming, probably not a huge piece, at least part of it is. So, just talk about supply-demand imbalance and sort of how do you see that manifesting itself throughout the year?

A - Colette M. Kress {BIO 18297352 <GO>}

Sure. So, when we have looked each in quarter, we're trying to make a good understanding of what we're seeing out in the channel, what those levels are in the channel, and how we can continue to procure more and more supply to meet that need. That's an ecosystem piece of work when we think about how to improve our

overall supply. We have to think not only of the supply that we procure to create the overall cards that we would want to put into the channel, but we also have to think about our add-in card partners, our OEMs, which are also integral in terms of getting (Technical Difficulty) of gamers. That takes us working not only in procuring inventory now in the next couple of quarters. But as you've seen us, we are also now procuring longer term. Longer term can be more than a year, and you've also seen a snow enter into agreement that will take us out many years in terms of long-term capacity needs.

We believe the ecosystem as a whole needs better understanding of what do we think the possibility will be in the future to help them build out this capacity. So, that's where our work is today. We'll have to wait until we finish the holiday season to see how that inventory in the channel is looking through the holidays. And we'll get back to seeing when do we feel we'll be able to really get to a stabilization point of supply and demand.

Q - Tim Arcuri {BIO 3824613 <GO>}

And is the thing that you're monitoring for that, Colette, is it the same thing that the rest of us are looking at, you're just sort of looking at these sites and you're looking at the secondary market pricing versus MSRP? Is that what your team is doing to sort of ascertain when you get to supply-demand balance?

A - Colette M. Kress {BIO 18297352 <GO>}

We are looking mostly at our AIC distributors and how they are working on creating that for the channel. That's the best that we can do is manage that part of the channel. The second hand cards, it is going to be a case that from time-to-time that maybe there, particularly when things are in short supply. There is an opportunity to potentially do the resale on that. The overall pricing that we see in that market is not something that we can control. We can control in terms of the price that we sell our cards to the AICs or to the OEMs, but then the market essentially defines that or the channel market determines those price that we see out there. We'd love to bring that back down. We believe bringing that down really takes just providing a reasonable amount of supply in the market versus the lien amounts that we have today.

Q - Tim Arcuri {BIO 3824613 <GO>}

I guess Colette just last thing in gaming before I move over to data centers. Is there any way to determine how much of your growth, say, from when you introduce Ampere, how much of the growth -- obviously, revenue is up about 2x, is there any way to think about how much of that is mix versus how much of that is pricing?

A - Colette M. Kress {BIO 18297352 <GO>}

Well, we have been providing GeForce cards into the market for decades, looking historically, over the years in terms of that compounded growth rates. We have seen the -- both factors of increase in terms of units from either upgrades and/or new gamers coming onboard to purchase as well as an increase in average ASPs. That average ASPs is a reflection of people buying up the stock and buying some of our higher end cards. So, this has consistently been over time to both be important

drivers and even today when we look at this time with Ampere, it is consistently driven both by units and ASPs.

Q - Tim Arcuri {BIO 3824613 <GO>}

I think just -- sorry, maybe just one more question on gaming. I think you recently gave us that 20% of the base has upgraded. And I think when you sort of think about what that number means, at least when we've looked at it, historically about half of the base seems to upgrade to the new generation card. So if drew that curve out, this sort of asymptote is out in the 50% range roughly. So, A, is that fair, and B, would you kind of in that light characterize a 20% upgrade rate as indicative of, hey, weren't like not even halfway there yet in terms of what the upgrade opportunity is?

A - Colette M. Kress {BIO 18297352 <GO>}

So, what we had announced was we believe looking at our installed base, about 25% of the installed base has upgraded to either the Ampere architecture or is participating in ray tracing cards. We look at that and look at the strong growth that ray tracing has influenced on our installed base, but additionally, we also look at the opportunity in front of us. But there is still a great opportunity of nearly 75% that still have that opportunity to get to ray tracing. Whether they do that with Ampere or in the future, it is a great milestone for us to keep focus on.

What this really means is people are looking now to benefit from their existing cards for installed base, very common that our installed base will include multiple different architectures over the generations. So, we will have those focused on Pascal, those focused on Turing, and then now focusing even on Ampere. When you think about the upgrade opportunity of our installed base of two generations of architecture, it is a great power for them to think about that upgrade. Now, all we have to do is continue to build up the cards to meet that overall demand that we think is out there.

Q - Tim Arcuri {BIO 3824613 <GO>}

Got it. Thank you for that.

Let's shift over to data center. First, I want to ask a question on the networking and then we can talk about core compute. So, just on the networking side, obviously, you said the demand exceeds supply. It sounds like the constraints are worse on the networking side given the substrate issues and whatnot and that's a pretty consistent message from others too. But it sounds like maybe you did between $550 million and $600 million, again that's my number not yours, in networking in the data center segment last quarter. But the question is, can you sort of help us quantify how much demand there was? In other words were you several hundred million dollars short of demand, because obviously also you said that that's -- that demand still exceeds supply even in January. So, maybe can you help us quantify the number or maybe when do you think you can start to ship to that demand level?

A - Colette M. Kress {BIO 18297352 <GO>}

Yes. Within our Q3, the networking demand was much, much stronger than our supply that was available in Q3. And we probably expect something similar as we

move into Q4. The company as a whole continues to work that supply situation and hope to improve it by the second half of next year. Nothing really different in terms of networking as we have focused on many of the supply challenges. It's not necessarily any one thing. When you have to think about the complexity of our products, when you have to think about the complexity of the ecosystem. You really have to work from beginning of the builder all the way to the ecosystem that are the end construction of our products and getting that to market. So, it is really a focus of the whole company. We've done a tremendous job given how strong the demand has been to improve the situation. And we do believe we can really get this to a strong position by the second half of next year.

Q - Tim Arcuri {BIO 3824613 <GO>}

Great. Maybe just moving over to core compute, you're growing over 60% year-over-year again in fiscal '22 and it looks like we can grow another 50%. I mean you're not guiding to fiscal '23 core compute, but it looks pretty reasonable that that business can grow in the 50% next year. I mean, obviously, Ampere is really hitting the beginnings of the product cycle. But again, a similar questions what I asked you in gaming, is there any way to characterize how much of the growth you're seeing on the compute side is units versus pricing? I get that question a lot, and frankly, I don't know to really how to answer it.

A - Colette M. Kress {BIO 18297352 <GO>}

Sure. When you look at our data center business, our data center business can be broken down primarily by the different types of customers that we have. We have been a big part of the overall hyperscale growth and the hyperscale customers still represent about 50% of our overall revenue today. The other half of it is selling to enterprises through OEMs and/or ODMs.

So, what this means is over the years, we have expanded both breadth and depth in terms of what we're able to sell. Our hyperscale is not only a building for their internal workloads or workloads that are needed in terms for monetization of the data that they have coming through their networks, all focused on AI and acceleration, but they also set up cloud instances. The cloud instance is a really important area for enterprises to begin their work of moving workflows to acceleration and taking advantage of how AI can really help the businesses.

We have great momentum also on inferencing. If you remember, several years ago, we were still in the early stages of inferencing and now we have the ability not only to provide inferencing-specific platforms and cards, but we also have with the A100 to really be dual allowing them to partake in training and inferencing. But inferencing has been an important driver of the revenue and it likely outgrew the data center of revenue as a whole in terms of the growth that we're seeing in inferencing.

So, our sales, when you break this out by whether or not it is a price point or unit, I think that's a really tough way to look at it, because we're here to supply to our overall customers, any different version that they want. If they want a full end-to-end system or if they just want the card and they want to choose the type of system, we

can enable each and every single one of those. We can even provide it to them in the cloud, provide that on-premise, and types of hybrids of world. So, there's so many different configurations that probably not the easiest way to discuss the business based on ASP and units.

We will continue to focus on trying to be a data center scale type of provider. What we mean by that is, we now have the ability not only to focus on GPU acceleration, but overall acceleration of the data center as a whole. We've incorporated work from systems, but also focusing on the three different components that may be there, whether that be the CPU in the future, the GPU as well as our current DPU in the field as well.

Q - Tim Arcuri {BIO 3824613 <GO>}

Got it. Can I just ask about enterprise? People talk about cloud and I think people get the drivers in cloud more, because it's just frankly you can see the big seven hyperscalers and you can look at their CapEx trends. It's just a more visible underlying growth trend. But in enterprise, you've been doing very well with a few milestones, the availability of the software stack for AI enterprise, the VMware partnership and the expansion of LaunchPad and DGX running the whole stack. So, can you talk about that maybe sort of what some of the milestones are there in enterprise? And do you think that the growth on that side can keep up with the cloud such that the mix is still roughly 50/50?

A - Colette M. Kress {BIO 18297352 <GO>}

Sure. So, our enterprise strategy is to democratize AI and make it mainstream type of workload. In order to do that, we enabled with NVIDIA AI enterprise, which is a software suite that contains those tools that they need to both develop and deploy AI. This allows that to be supported and maintained in the ways that enterprise require. Enterprise is really important for them to have the software capability, the service capability so that they can continue to run these on their mainstream servers and run side-by-side instead of siloing these types of workloads or infrastructures.

This has also been an important part in terms of our work with partnering with VMware, for example, to help drive both DPU adoption as well as data centers increasingly becoming multi-tenant and implement, for example, a zero trust security. These are important parts on how enterprise thinks about deploying the acceleration in AI on their mission critical types of jobs that they may have. We've also launched something to be referred to as LaunchPad, which is an on-ramp to NVIDIA AI. When you want to think about it is it's a try before you buy for enterprises. We are continuing to serve these different options to ease the adoption, to ease the learning through many different ways, whether the infrastructure is fully complete with a system software stack, so for them to continue to work on the application and stitching that together, that's one way or if they wanted to start with a base piece of infrastructure and build as they go, we will enable all of those.

We have DGXs, for example, base command for development of AI or we have Edge workloads that we engage with EGX running deployed AI or managed by a fleet command. So, many different types of software offerings, all of them are tending to

be on the NVIDIA-certified OEM systems, ODM systems or cloud offerings. In the future, I believe, we think the growth of all different types of AI workloads, whether they be training, whether that be inferencing, whether that be edge computing can all be great sizes. The enterprise is an important area of focus. We already know it being 50% as a standalone. We know that the cloud participants are also enterprises, so our growth and what I think in terms of the future, the enterprises would be very important part.

Q - Tim Arcuri {BIO 3824613 <GO>}

Got it. Thank you. So I want to ask about DPU and timing on BlueField-3, you did mention BlueField. I know in the past you said that the SAM for BlueField in 2024 is ultimately the entire server TAM. But I mean you can get some really big numbers by taking the server TAM and you multiply by $1,000 ASP. So, have you provided any sort of insight in terms of how to think about what your ultimate share of that SAM might be? And like is that the right way to even think about what the SAM is just to take the entire server TAM and just multiplied by $1,000 ASP?

A - Colette M. Kress {BIO 18297352 <GO>}

The discussion about a DPU for the data centers has become such an important topic and enterprises hyperscalers continue to focus on this zero-trust, a place to stage data, to encrypt data for multi-tenant environments to have been and safely already be there. We have been not only talking about our current availability of BlueField, but also our future generations will continue to improve. We have many customers trial and working to qualify the DPU in terms of now as well as in the future. So, we'll continue to see this to be an important area of a data center as a whole, and we'll probably just see this ramp in terms of revenues next year.

Q - Tim Arcuri {BIO 3824613 <GO>}

Got it. And then maybe just the last thing on data center before we kind of go on to autos. But Jensen has said last calls, again, about whether it's really realistic that all servers will ship with an accelerator, and obviously we're still below 10%. And he thinks that ultimately the penetration will get to 100%. But I guess the question is, how does your Arm road map help you get there? Can you talk about how the sort of interplay between the what you're doing on the accelerator side and your Grace road map helps you kind of get there?

A - Colette M. Kress {BIO 18297352 <GO>}

Sure. The way you want to think about the discussion about your long-term will every server likely have acceleration in AI, can that be a GPU? We believe in this. We believe that long term this will be how data centers are driven. But it's not a one for one. As many times, we have multiple different types of solutions inside of a server. Again, multiple GPUs, we can have many different types of configurations that support that.

So, as we think about the opportunity in front of us and where we are right now, we think we are in still the single digits in terms of that type of penetration. But the more and more that we are seeing at-scale types of deployment, so many different

industries looking at AI solutions and now having readily available software that gets them -- gets up to them. We believe we will continue to be able to penetrate not only the enterprises, but future work that we're doing in terms of the hyperscales as they dug out larger and larger models and new workloads. New workloads that focus on conversational AI, recommender types of models as well. These are important things as well as what we see in terms of Omniverse in the future.

Q - Tim Arcuri {BIO 3824613 <GO>}

Great. Thank you for that. I do want to ask you about Omniverse, but I want to first talk about autos. So obviously, you have a huge pipeline, you have $8 billion pipeline and you've said that most of that is parked out into the back half of the decade. So, that's not -- so that's clear. But I mean, obviously, the Mercedes, partnership that's going to start to manifest itself, probably, I would think in 2024, certainly in 2025. You have a number of other partnerships. You've done very, very well, with a lot of the Chinese start-ups as well. So, I guess. Can you talk about the timing for Mercedes, number one? And then and then number two, if you look at how the market is valuing some hardware-only vendors I mean ADAS, the market is putting a very high multiple on some of the hardware-only vendors. And there seems to be this debate as to whether the Tier 1s, who want to control the software stack or the degree to which they're willing to basically hand the keys over to you. So, can you also talk about that?

A - Colette M. Kress {BIO 18297352 <GO>}

Okay. Different questions there, but an important area for us. We've been working on autonomous driving and really led the way helping folks understand the complexity of autonomous driving in terms of the compute that's needed and the solution of AI to really help the deployment of autonomous across a lot of different types of vehicles. So, we have discussed an autonomous pipeline going forward of $8 billion out to 2027 and this includes our design win that we have today across the transportation industry. I think it's important to understand, there's a many different types of industries in that pipeline. First, it is our established OEMs, it is Mercedes, Hyundai, Volvo, several others. It also includes electric vehicles, neighborhood electric vehicle types of companies, Nio, Xpeng, Li Auto, several others.

Trucking is also an important area of safety for autonomous driving. And then we can't forget robotaxis. Robotaxi start-ups that have been across the world are also included in our pipeline. We see there to start to be a reflection of a revenue growth associated with this pipeline probably starting in the second half of next year and a larger round as maternal corner to calendar year '23. Our Mercedes deal is important part and a healthy part of that pipeline. And this is an ability for us to not only sell a hardware, but also participate in the software and the software monetization that Daimler will have and will split it with us. We think this is a very important deal.

I know many people have been focused on such a unique way to work together with an OEM and how we share the benefits from that kind of deal. We're excited to be working with Daimler and many of these others across the world. We have a full stack, an end-to-end type of solution that can be hardware, that can be hardware

with a system solution and we will work with anyone in terms of how they want to complete the overall software. Daimler is probably one of our stronger relationships that we have here, a quite a long fleet to work with. But again, we're working on software with many of these different suppliers.

Q - Tim Arcuri {BIO 3824613 <GO>}

Great. Thank you for that. I mean it seems that as Orin starts to ramp and ship in calendar '22 that, that's really going to be a catalyst to start to open up the backlog; would you agree with that?

A - Colette M. Kress {BIO 18297352 <GO>}

The Orin architecture is expected to start shipping in 2022 calendar. We have discussed on Orin architecture a while back and it is now coming to live. The Orin SoC features 17 billion different trends -- and is delivering probably 7x the performance of the prior generation in Xavier. Orin will support not only autonomous vehicles, but it's also there for embedded platforms including robotics. The interest in Orin is very high. Orin-related design wins comprise probably a good amount of our autonomous design winning pipelines. And these wins are broad-based, everything from the OEMs, trucking robotics all very exciting terms of Orin. It will be in part in terms of continuing the development work that they are doing to build these platforms for production, but we look forward to shipping out next year.

Q - Tim Arcuri {BIO 3824613 <GO>}

Got it. This is probably a good question to sort of pivot to a question that I'm getting from investor. There's a lot of things, this is just one piece this Mercedes partnership, it's just one piece of an effort for you to move more revenue to recurring models. There's the VMware partnership, more directly licensing software, obviously, Omniverse as well. So, just from a very, very high level, can you sort of outline the strategy for recurring revenue and software-like business models, particularly in gaming and in AI. Thank you.

A - Colette M. Kress {BIO 18297352 <GO>}

When we think about software at NVIDIA, software is not new to us. We've been talking about it probably for 10 to 15 years. Just the onset and building of CUDA had really delivered probably a very influential software package to folks, but not necessarily for separate monetization, could have been our development platform across all of our GPUs has been essential. But we have added a significant amount to all of our software today and now we may offer in terms of separately. Why offer it separately, why monetize it separately, this is important to enterprises. Important to enterprises that they know that their mission-critical applications in work has a service component to it, that's something that they can count on in terms of both continued innovation, support to fuel the work that they are doing in AI. So, we're here to assist them with that.

We will continue to provide a lot of different software in our application, in our overall stacks of infrastructure as well, but focus in key areas, where we can monetize this separately. Infrastructure as a whole across the company, whether that be with

gaming, data center, professional visualization is still a very meaningful part of our revenue monetization. And now this addition software separately can be really helpful to us in the years to come, but we're still in the early days of monetizing it separately.

Q - Tim Arcuri {BIO 3824613 <GO>}

Yes. I mean GeForce now is part of that. I saw that the announcement from EA that they would go with you a couple months ago, seemed like a pretty big deal. I mean, it's pretty simple math to take several tens of millions of users at $10 a month or some nominal number and you can get a pretty big number even given how large the company is today. So, can you just talk about that as well?

A - Colette M. Kress {BIO 18297352 <GO>}

GeForce NOW is another great opportunity of providing optionality to the building out of cloud gaming. GeForce NOW, we have not only our own infrastructures with (inaudible) and a service on top of that. We've been working with partners across the world to include it with other types of software packages that they have and building out their infrastructure to enable that. And we will work with many different providers out there to assure that, yes, we get to expand gaming to as many gamers as we can. This is a great opportunity for those that have not been able to reach gaming, whether the price points of an individual device for gaming or just using a different type of package such as a MAG that will allow them the availability to many of the PC types of games that are out there. So, GeForce NOW, many different ways to procure it, make it available to the gamers and we'll continue down that strategy to just try and influence more and more gamers in the world.

Q - Tim Arcuri {BIO 3824613 <GO>}

Yes, that's all obviously part of moving more revenue to current models. And just in that vein, if we can talk about Omniverse for a bit. And we can talk about Omniverse for more than just a bit. But I guess you sort of laid out three -- sort of three monetization areas or three verticals that you can attack. I guess the first one that you've talked about clearly is -- are the creatives and the engineering and the CAD, the design people, there's 40 million of those and you sort of talked about that as the most realizable near-term opportunity. But then there's also the digital twin stuff and there's also the intelligent agent stuff with avatars and those are very, very big TAMs as well. So, can you just talk -- a part of the success of Omniverse is getting the CAE vendors on board with that -- with a platform, because you're trying to push it as a standard. So, can you talk about the push-pull between, do they see you as a competitor? Do your customers see you as a competitor? So, just kind of talk about the evolution of Omniverse.

A - Colette M. Kress {BIO 18297352 <GO>}

Sure. So let's start with what is Omniverse to us. Omniverse is our hardware and software platform here at NVIDIA that we will be able to introduce 3D design collaboration for building out virtual world and building out digital twins. Building out virtual world and distributed collaboration will be investment across many different types of companies at all different levels. We stand to benefit in this case

from not only our computing and graphics technology both for infrastructure and software, but as a whole working on delivering an end-to-end solution to help the industry.

Now when we think about the TAM and we think about the TAM in front of us, we're still in the early days in terms of outlining that, but you are correct, there's a lot of different collaborative designers out there that we can target. 40 million designers, we think, are available now. Those 40 million designers will be working on stitching together what they do today in their collaborative productivity applications and moving that from a 2D world to a 3D world. We could license, for example, to each one of those users $1,000 by user per year to start building out those 3D environment. So, that's one form of monetization that we can do. We refer to that as Omniverse enterprise in terms of purchasing that seat, per user, per year and it is, in general, availability today.

Additionally, we have the opportunity of creating digital bots, creating these for customer support, calls centers, car assistance. This is a large opportunity in front of us that we see improvement. This could also be taking our Omniverse avatar, for example, and pricing it approximately $1,000 per avatar per year. This is also in beta and will be available soon.

So, the software revenue not only is the one piece of Omniverse. This has a multiplier when you think about the systems, the infrastructure and chip revenue that will also be necessary. Your designers would likely need high-end workstations in order to do their design work. Additionally, building out these complex large models for a 3D or virtual environment or new data center level type of infrastructure to influence that as well.

So, building metaverses, it's already started from content creators to cloud gaming infrastructures. Enterprises will continue to start the work in building digital twins as well. We look at this TAM opportunity to be in the buildings. We'll continue to refine it in the next couple of months, but a contribution from both are software and hardware.

Q - Tim Arcuri {BIO 3824613 <GO>}

And can you just talked about the relationship you have with your customers and your partners. I mean part of the success of this platform is getting the CAE vendors on board with partnering with you and you don't have any of your own CAE capability. I guess, is that a piece that you view you do you need that? That's not necessarily been the ammo in the past. But do you feel like maybe you do need to have your own CAE capability for the platform to be really successful, at least for the lowest-hanging fruit, which are these 40 million engineering and just -- people?

A - Colette M. Kress {BIO 18297352 <GO>}

Yes, when you look at our ability to engage with enterprises of so many different industries. We will continue to follow the path that we have done. The first thing was working with OEMs and ODMs on all of the different types of infrastructures that are being built for these industries. We continue to fine-tune those certified systems so

that they can support all these different industries that might be out there. We've begun working with financial institutions on what they need, manufacturers, e-tail, retail, the list goes on. Omniverse yet now another example of an important infrastructure that we have now connected all of the partners and the ecosystem. We look at the current existing software applications of these designers work with, we're here to connect with those software applications, Omniverse, taking the exact same work that they are doing and just moving it to 3D.

That overall path to get to the enterprises by understanding each of the industry's ecosystem, software partners, infrastructure programs is how we'll go to market here. So, it's not exactly incremental, it is more of the same as we build out of both our software and engagement with these partners.

Q - Tim Arcuri {BIO 3824613 <GO>}

And then I guess also how have your cloud customers, they all have -- they all want to build the metaverse to each of them means a different thing, obviously, but they also want to build their own platforms as well. So, how do you view that tension between big cloud customers also with what you're trying to do with Omniverse?

A - Colette M. Kress {BIO 18297352 <GO>}

Our approach to accelerate a computing and AI solutions has always been agnostic. We will work with just about everybody in the market as we can in assisting them. We have software application specific to certain industries. We also help with the hyperscales as they may be working on certain frameworks, certain large models to stitch that together, to make it optimized and more efficient for them. We have, for example, right now more than 150 software development kits available for all of these markets. We support them all. We support all the different types of hardware providers that may be there as well, whether they be a CPU hardware provider, storage, memory, these are all important things that are fine tuning. I think our support from the very beginning has been supporting the world of acceleration and AI; and whatever we can do to put that together, we will do.

Q - Tim Arcuri {BIO 3824613 <GO>}

Yes, thanks for that. I just mentioned that because certainly in cloud gaming, the issue there was not so much whether the technology was ready, it was more just whether the gaming interest -- put their titles in the cloud and things like that. So, it was more of a sort of a behavioral thing. So, I -- it seems like that's the hurdle that you sort of have to get over now. So, anyway, really, really appreciate the time. And thank you very much, Colette.

A - Colette M. Kress {BIO 18297352 <GO>}

Thank you so much for hosting us. Appreciate it. Thanks.

Q - Tim Arcuri {BIO 3824613 <GO>}

Thanks.