NVIDIA Corp at Raymond James Institutional Investors Conference

Company Participants

- Colette Kress, EVP & CFO

Other Participants

- Hans Mosesmann, Analyst, Raymond James & Associates
- Unidentified Participant, Analyst, Unknown

Presentation

Hans Mosesmann {BIO 1522582 <GO>}

Good morning, everybody. I'm Hans Mosesmann. I cover semis for Raymond James.

I'm delighted to have Colette Kress, Executive Vice President and Chief Financial Officer of NVIDIA. And we're going to have a fireside chat. And Colette, thank you.

Now NVIDIA is one of those stories that has transformed over the past several years. There's still a fair amount of confusion. Maybe for our audience it would be helpful to give a little bit of the history of NVIDIA and how over the past several years that transformation has made it into a very, very intriguing story.

Colette Kress {BIO 18297352 <GO>}

That's great. So NVIDIA, NVIDIA is the leader in visual computing 20 years and continuing our leadership position in there. But our focus has overall changed in the last five years.

Our focus for the first probably 15 years was focused on the overall PC platform and providing the best graphics across all different types of PCs. But we saw an opportunity to better leverage our overall technology across four key specialized markets and focus not on an overall chip or component of an underlying PC or other type of device but really focus on a platform approach, a platform approach that focuses on the best technology and innovations at the hardware level, also focuses on a development layer, a development layer that's both programmable as well as developer tools but also a key software component for many of these markets.

Now the four markets that we're focused on right now is gaming, primarily PC gaming; number two, Pro visualization which talks about graphics for the overall enterprise; data center, data center including high performance computing, artificial

intelligence as well as cloud graphics; and number four, automotive. And two key pieces of automotive, both infotainment centers but also autonomous driving going forward.

So a lot of discussion in terms of, wow, those are four very, very different markets, how can the exact same technology be leveraged across there? But we've really been able to unify that overall investment and architecture across them and really focus on the go-to-markets for each one of those.

So our success, we just finished our fiscal year at the end of January and that year produced 7% growth in terms of on the top line and reaching record revenue levels of $5 billion. In the Fourth Quarter alone each one of those four markets grew both year over year as well as sequentially in this market. And when you strip out just those four markets platforms that we're focused on that represents now more than 85% of our revenue and the growth of those four markets alone is more than 25% and has been for the last two years.

We've continued to also grow overall gross margins. Our gross margins reached record levels in both fiscal year 2016 as well as in the Fourth Quarter and now over 26, approaching 27 -- I'm sorry, approaching 56%, 57% and our overall operating margins increasing over this last year as well as for the last two years growing more than 400 basis points. So we're very pleased about the results that we've seen across this transformational event.

Hans Mosesmann {BIO 1522582 <GO>}

Okay, let's delve down into some of these growth vectors. I get a lot of questions on the gaming side specifically with virtual reality. What's the timing, what's the hardware configurations necessary to make this VR experience compelling and what's the growth implications of this cycle or megacycle or what do we have here?

Colette Kress {BIO 18297352 <GO>}

Sure. So our gaming platform right now represents more than about 50% of our overall revenue size at the company. We've been growing quite successfully across many different drivers, drivers that are really influenced by the overall games that reach the market.

Our ASPs have grown. Our overall units have grown, our overall number of gamers entering this market have overall grown.

Virtual reality as we see it is just another bonus opportunity for us in this market to expand gaming. The next generation of reality type of gaming is ahead of us. It's a little unsure in terms of how fast it will grow in the very beginning but the exciting part about it is the high-end gaming with virtual reality will require one of our high-end platforms.

So that will be a 970 or higher. So we have about three different cards right now in the overall desktop that would be abling overall VR as well as some in terms of the notebooks. We've actually come out with a set of notebooks and desktop GPUs that we call VR ready.

So we can enable any type of consumer to know which types of GPUs would be great for that overall experience. So we're excited about the opportunity. We do think long term it's definitely a growth enabler but right now we look at it probably just as a bonus for the year.

Hans Mosesmann {BIO 1522582 <GO>}

Okay, last year the GeForce, the gaming side of the business was up quite a bit. Is it possible that there was a lot of pre-buying into the VR dynamics that we'll see this year? And if so could there be a speed bump or an air pocket I should say this year?

Colette Kress {BIO 18297352 <GO>}

Yes, I'm sure there are cases where a gamer went to market with their three reasons in terms of why to buy. And one of them was that I can justify or think about also the VR experience coming forth. But I still think there is a tremendous opportunity for future buying of our high-end cards but there definitely could be a possibility that they could buy.

Hans Mosesmann {BIO 1522582 <GO>}

Okay. Any questions from the audience on the gaming side before I go into other topics?

Questions And Answers

Q - Unidentified Participant

(technical difficulty) what creators of the VR content have you been dealing with or have you not been dealing with the capabilities of (inaudible) without having to deal with the content (inaudible)

A - Colette Kress {BIO 18297352 <GO>}

So it's a good question.

Q - Hans Mosesmann {BIO 1522582 <GO>}

Can you repeat the question?

A - Colette Kress {BIO 18297352 <GO>}

So the question was regarding what do we do to actually enable VR. Yes we have a great chip in terms of its performance, its ability in terms of its frame rate to enable

that but what else do we work on?

Very similar to what we do right now in terms of working with software developers worldwide in terms of upcoming games that is a multiyear process for future games coming out that we enable additional features to work with those overall games, features that better enable some of the hard aspects of graphics. Things such as hair, smoke, water, fire, those are very key design features that we work in terms of our game works adding additional.

And even now with virtual reality, we've come up with technology that actually improves the perception of the speed of that overall rendering, focusing on what is directly in front of the eye and then rendering the overall peripheral part of that VR experience. You'll continue to see us add more and more features for VR and we are working with probably more than 100 and 150 different startups, small; and medium-size gaming developers on VR.

Q - Hans Mosesmann {BIO 1522582 <GO>}

Okay, let's move on to the cloud data center part of the business. A lot of investors don't realize that the fastest say supercomputers in the world view the combination of processors and GPUs that are accelerators if you will and there's this trend within the data center to use that kind of concept of heterogeneous computing to apply to various new workloads and the topic of deep learning comes up quite a bit of late. What is that, how does it play out for architectural designs going forward and how does NVIDIA play in that space of deep learning?

A - Colette Kress {BIO 18297352 <GO>}

Sure. So a data center is a very exciting market for us both today as well as going forward. We had been a key component in high-performance computing for some time where we've been working with key supercomputing arena as well as key applications in that space to essentially do the parallel processing, moving workloads off of just the CPU and levering the GPU which is also programmable to speed up the overall application and use.

Supercomputing 2015 back in the fall was really a heightened discussion about the use of accelerations. And we're now seeing in the top 500 supercomputers more than 100 of them are using acceleration for that main reason in terms of the improvement of the throughput of their overall applications in these data centers.

But you talked about the expansion and the excitement around deep learning and what is deep learning. So deep learning application that has been coming out in a lot of research as well as higher education focus. And the focus really on using a GPU with deep known network training to train a set of data and information for better use cases for consumer types of applications.

Let me give you some examples. What you see in terms of the amount of data on video, images, voice recognition, voice translation, very, very key large data sets that they are able to use a GPU as the coprocessor, in this case to better mine that

information and serve up a set of instructions. Just by throwing the information at the GPU and a lot of information at the GPU, millions and millions of different data, it can train itself in that application.

You're seeing this looked at as kind of the artificial intelligence of the year 2016 and the focus on continuing to improve the computers, better performance and actual human capabilities in terms of recognition. You'll see applications such as search be very common using overall GPUs in this. So both with the overall hyperscale web service providers has been a large focus of ours and application by application or workload by workload they continue to roll out GPUs in these environments.

Q - Hans Mosesmann {BIO 1522582 <GO>}

And these are high-end GPUs, is that correct?

A - Colette Kress {BIO 18297352 <GO>}

Absolutely. These are overall mission critical, server level GPUs in those environments.

Q - Hans Mosesmann {BIO 1522582 <GO>}

Okay. Segueing into the competitive dynamic. Intel recently acquired Altera, presumably for their acceleration capabilities, to integrate that into their server products, their other accelerator-type solutions, their custom chips.

How does NVIDIA and the graphic side of the competitive dynamic win that game? Or is there an inherent advantage that you may have versus some of these other solutions?

A - Colette Kress {BIO 18297352 <GO>}

Yes, Intel did approach the market in terms of acceleration in this last year with the overall integration of their M&A for Altera. Altera is a different form of acceleration using FPGAs. FPGAs are definitely an opportunity but not necessarily in the same manner of what we're seeing in terms of in the deep learning space.

FPGAs although we talk about being programmable are probably more configurable as we have a full development language, development platform and also very key libraries and things to help developers in the space of deep learning. So FPGAs are at probably different level of really coding more at the hardware level where we're focused more of the high-level software and the ability to change that algorithm quite quickly based on new information makes GPUs very helpful to work with. The overall performance on GPUs is quite, quite high, quite higher in terms of what we're seeing in terms of FPGAs.

So in summary, probably when we focus on our hyperscales and the works that we're doing on deep learning we haven't seen FPGAs really been talked about in that area. Mostly GPUs have been used in most of these environments.

Q - Hans Mosesmann {BIO 1522582 <GO>}

Okay. Any questions from the audience on data centers, deep learning? Okay, let's move along.

Automotive. So if you would have asked me three, four years ago if NVIDIA would be a key player in the automotive business I would've told you that you're crazy and I don't (inaudible), right?

So what happened here? How all of a sudden does NVIDIA move at CES from the gaming and the PC side of the floor to right between Mercedes and Audi? And why don't you give us a little background on how this all happened, it's fascinating.

A - Colette Kress {BIO 18297352 <GO>}

So we've actually been working with auto manufacturers for eight to 10 years. Our focus today in terms of what drives our overall revenue size more than $300 million and in this last year it actually grew close to 80%. But that's been a focus on infotainment systems and center-consoles as well.

And those are in key cars such as Audi, BMW, all of the Teslas, Hondas in Europe, Bentleys and all of some different types of manufactures, where they are really, really focused on changing the overall experience to the driver of a console which are graphics that meet the overall needs of what they driver has been. But what you've seen us talk about at CES for the last two years is our focus on taking exactly our learnings from the data center and applying that to the overall automotive for autonomous driving. Our focus is to supply the overall central computing platform or essentially the supercomputing underlying that overall car for future autonomous driving.

A little bit different than the focus of ADAS or assisted driving in terms of what you see today and a focus on a repository for all the different information that may come in through the car through cameras, lidar, radar, any types of sensors and processing it exactly as we do the hyperscale data centers and with enough information assisting that car to drive in the future. We're working right now with more than 50 to 70 different auto manufacturers, Tier 1s and startups who are concentrating on autonomous driving.

Autonomous driving as you look today, do a search on the web is probably one of the more exciting areas of focus. And even in the last couple of years the speed of the technology and those focusing on autonomous driving this will definitely be something in the future of increased intensity.

And in intensity of how quickly can we move this technology to real cars that are on the road. But our overall platform approach that we did with DRIVE PX and DRIVE PX's focus on a scalable open platform that we're enabling to work with the manufactures collectively on both that development platform and the software that's going to be necessary to take this forward.

Q - Hans Mosesmann {BIO 1522582 <GO>}

Do you have competition in that, space autonomous driving?

A - Colette Kress {BIO 18297352 <GO>}

I think there is a lot of interest in autonomous driving, a lot of different forms of technology. We haven't seen anybody approach it in the same manner of a computing platform to be that central place for the overall car. There is a possibility that others may join this but so far we seem to be the only provider right now on that supercomputer approach.

Q - Hans Mosesmann {BIO 1522582 <GO>}

Okay, the reason I ask is that it comes up quite a bit that you guys compete with Mobileye or companies like that. And can you please compare and contrast what your solution is which is like the supercomputer of the car and what some of these other players may be doing?

A - Colette Kress {BIO 18297352 <GO>}

Yes. And kind of stemming in the discussion about there is ADAS, assisted driving or assisting with signals and things to the overall driver, many of the companies today are focused on computer vision for the car with overall smart camera approach and providing a set of algorithms based on what they see to the driver in a system. Our approach is a little bit different. Instead of an add-on from the overall camera or a sensor or a lidar is really talking about putting that all collectively together and we will work with anything in the car.

So they can be complementary right now. You may see us together on some of this but our focus is really the underlying computing platform, not a single piece of ADAS.

Q - Hans Mosesmann {BIO 1522582 <GO>}

Okay. Any questions on the automotive side? Eric?

Q - Unidentified Participant

I was wondering would you think that the car manufacturers you are currently engaged with or the Tier 1s share that vision right now on the autonomous design (inaudible) to determine what track of the (inaudible)

A - Colette Kress {BIO 18297352 <GO>}

I would say --

Q - Hans Mosesmann {BIO 1522582 <GO>}

Can you repeat the question?

A - Colette Kress {BIO 18297352 <GO>}

The question was the manufactures and/or the Tier 1s, are they centered on this exact technology for autonomous driving going forward? Or is there still room for technology differences as we go forward? And I think definitely there is a lot of focus today on our approach in terms of those that we're working with.

Many of the startups that you've seen, many of the self-driving cars that you see right now are leveraging a GPU technology to even gather the data and process the data that they are doing. They have seen tremendous improvement in terms of the throughput of how quickly they can reach in terms of algorithms with their software, using the GPU. Very similar types of results in terms of the acceleration that you see in the data center, that acceleration in the overall design process for the cars.

But the market is very open still. There's no anyone provider that will both define that future going forward and we will probably work with a bunch of providers all the way through this as we go forward. But we do see our platform as being very, very well received with those that we're working with right now.

Q - Hans Mosesmann {BIO 1522582 <GO>}

One other question.

Q - Unidentified Participant

You mentioned the difference between the assisted driving approach and your approach. (inaudible)

A - Colette Kress {BIO 18297352 <GO>}

Sure. So --

Q - Hans Mosesmann {BIO 1522582 <GO>}

What's the difference between --

A - Colette Kress {BIO 18297352 <GO>}

What's the difference between ADAS and that approach and our approach in terms of the supercomputer. In many of the ADAS they will depending on the regions some are focused on a camera approach. Some are focused on lidar or radar taking in information around the car and serving a single function.

For example, letting people know when your car has moved outside of its lanes, whether with a vibration and/or a light. So step-by-step telling a driver about things that are going on around the car. But the driver is still driving.

So you're assisting the overall driver in the alertness of what is going on. Our approach has been on an overall central computing we'll take information from around the car all over and take the possibility of a sensor radar and/or a camera

and using that information together, not necessarily just from an identification of what is surrounding the car but how to process that information for the car to actually move such that the driver is actually not driving.

The approach takes a with so much information and so much data on all of the different roads you can overall teach this computer to drive by itself and using that overall deep learning application. So focus is not on silicon that may be behind anyone of these outside sensors but really focus on the central computing to overall get that job done.

Q - Unidentified Participant

So what you need for all these (inaudible) systems and then you take the data from all the systems and apply it to --

A - Colette Kress {BIO 18297352 <GO>}

It will take and can take information from all of these different inputs as well as probably new inputs that will be added into the car going forward, correct.

Q - Hans Mosesmann {BIO 1522582 <GO>}

Okay, let's move forward. On the IP side you have a crosslicensing agreement that ends soon with Intel. You have other monetization strategies on the legal front with Samsung and Qualcomm.

How does that play out over time? How should we look at that on the IP monetization side of the business going forward?

A - Colette Kress {BIO 18297352 <GO>}

Sure. Our Intel licensing agreement is approaching five, six years and it does come up for its end at the end of Q1 of our fiscal year 2018. We'll continue to follow this.

It's not sure if it will renew at that time and most of our thoughts on that is to say we're fine if the assumption is that people assume it's zero as our real focus is on our four key market platforms. And so we've done those as business groups that we can continue to grow and overall grow our operating margin.

And that's how we look at our overall IP, not necessarily as a business unit but a key approach for us to both defend our IP and have people recognize that using our IP or infringing on it without monetization is not what we'd like to see. So we took that case for an example with Samsung against Samsung and Qualcomm and took them to the ITC.

Now those cases haven't exactly moved in our right manner so far. But we'll continue to see those through and approach anymore IP really as a business case, can we look through and ensure that we will have the profitability that we want to if we take any more cases forward.

Q - Hans Mosesmann {BIO 1522582 <GO>}

Okay. On the M&A front then, what kinds of assets out there do you think you might be interested in or is it at this point more organic now that you have everything pretty much in place?

A - Colette Kress {BIO 18297352 <GO>}

Yes, I think we're definitely locked with our four platforms that we're working on and it provides us tremendous opportunity and a TAM going forward for us to capture. We will look at M&A but we've tended to focus on early stages or things that can add to our existing platforms easily and incorporate those. So I think you'll see us focus on that continuing going forward.

Q - Hans Mosesmann {BIO 1522582 <GO>}

Okay. We have a few more minutes. And Colette if you can just let the audience know and those that are listening on the webcast what is the most exciting aspect of the next several years as you see it and as senior management looks at the environment?

A - Colette Kress {BIO 18297352 <GO>}

I think when we look forward we've been so dazzled with our overall performance in this transformation to the 4Q market. But even when we think about the overall TAM opportunities of them there is tremendous opportunity going forward as well.

What I think is also quite unique is when we think about some of the key disruptive technologies that are in front of us, both virtual reality, deep learning and artificial intelligence and autonomous driving going forward. We are underlying technology across three disruptive technologies that will probably transform each of those industries quite substantially. So we couldn't be more excited about our approach to these markets with the platforms that we have and the technology that we're bringing to market.

Q - Hans Mosesmann {BIO 1522582 <GO>}

Okay, we have time for maybe one or two questions if there is any. Okay, kind of quiet out there. All right, Colette, thank you very much.

A - Colette Kress {BIO 18297352 <GO>}

Thank you. Thank you. So much.