

Stifel Technology, Internet & Media Investor Conference

Company Participants

- Colette M. Kress

Other Participants

- Kevin E. Cassidy, Stifel, Nicolaus & Co., Inc.

MANAGEMENT DISCUSSION SECTION

Kevin E. Cassidy {BIO 15420688 <GO>}

Good afternoon and welcome to the Stifel 2016 Technology, Internet and Media Conference. My name is Kevin Cassidy. I'm one of the semiconductor analysts at Stifel. And it's my pleasure to introduce NVIDIA's Chief Financial Officer, Colette Kress.

Colette M. Kress {BIO 18297352 <GO>}

Thank you.

Kevin E. Cassidy {BIO 15420688 <GO>}

And we're going to just start with our basic format of getting a company overview of NVIDIA for people who haven't heard of NVIDIA and just the general competitive advantage in the market and your growth opportunities. Then, after that, I'll open it up to the floor for questions or I'll continue on with my own set of questions.

So, first, Colette, thank you again for being here.

Colette M. Kress {BIO 18297352 <GO>}

Thank you. Thank you for hosting us. So, let me kind of get started about NVIDIA and what makes up NVIDIA. NVIDIA is the world leader in visual computing and it's been through quite a bit of a transformation over the last several years.

We started out as a focus on one of the key applications of use for a GPU, being gaming and for graphics. And we've now moved into four unique market specialized platforms, the first one being still for PC gaming; the second, pro visualization; the third, datacenter; and the fourth, automotive. And I'll kind of break down each of our goals within those four markets.

But the goal in terms of our strategy is the exact same existing technology under each four of those markets. The (01:44) technology being the GPU, the GPU either used for overall graphics capability or used for overall compute capacity as a coprocessor in many of these cases.

So, first on the gaming, the gaming business still represents probably more than 50% of our business. It has been growing quite strongly over the last couple of years with a long-term CAGR over the last couple of years of more than 30%. Really being influenced by a host of things in the market.

The overall expansion of PC gaming as the higher production value games over the last couple years needing the overall performance of the GPU, the overall expansion of gaming industry as it moved into eSports, moved into multiplayer strategy games and just the overall social platform that is now associated with PC gaming and focusing online.

And then thirdly, we have seen the growth in terms of number of gamers coming on board as broadband access has actually expanded worldwide and those are coming more online to do the entertainment for PC gaming.

We just recently came out, with about a month ago, two new gaming cards for high-end gamers. Our 1080s and our 1070s and those have started shipping some of our Founders Editions on our Pascal architecture and folks were extremely excited, both reviewers and overall gamers in terms of what these cards will bring. This is the era of probably future virtual reality and the use of also GPU to enable a lot of the high-end performance that is necessary for the virtual reality.

We consider virtual reality should essentially be a bonus on top of our platform and another reason to get into the overall PC gaming market. We can take the overall gaming market and move to our enterprise side and our enterprise workstation where we have our GPUs under our Quadro brand for professional visualization. So, essentially, all of the key design in the world and the key work stations and high-end work stations, we are also a leader in that position with our overall GPUs.

Our third business, move to the datacenter. You know our datacenter business for the last several years has been focused on high-performance computing. And the overall supercomputing world, where high-end mathematical computations and the parallel processor that the GPU brings in terms of improving the overall speed of the workload on many, many cases. We are number one, use of acceleration in the supercomputing. But what has been very, very focused over the last couple of years is the new emergence of deep learning and the deep learning framework for artificial intelligence.

So, deep learning framework is a new way to think about artificial intelligence from what we have seen in the last 20 years, within the use of deep neural nets, and the use of significant amount of data being applied to the overall computer to actually train it and get it to understand and produce key algorithms.

So this has been a big focus of us over the last couple years in terms talking about the emergence (5:14) in the field. We've been working with tremendous amount of hyper-scale providers around the globe. Have they've also been researching this in higher-end research institutions that have fell into the hyper scales. And this is a big part of what is driving our overall growth in datacenter.

Our third piece in datacenter is our overall cloud and cloud virtualization. This is essentially a one-to-many type of position where the GPU is located in the cloud and you're able to stream down to different applications or different use cases where the GPU is necessary. This can be used in, essentially all of the streaming, gaming situations or otherwise where the user interface is important in terms of the ideal graphics for the underlying application.

Our fourth market is actually automotive and it usually follows right after what we talk about in terms of the datacenter because it is really a focus of our long-term strategy on autonomous driving. In autonomous driving, we've looked at the approach of exactly what we learned in the datacenter and what we understood as using deep neural net to actually train the overall, underlying compute function within the car for self-driving cars of the future.

So we've put together a platform, a platform that we call DRIVE PX that we announced back at CES. And we are working with more than 80 different car manufacturers, Tier 1, start-ups, focused on autonomous driving a net (6:49) central compute. So, central compute is about centralizing all the work around the car from cameras to lidar to radar and all the different types of sensors into a central compute and a set of algorithms that can drive the cars of the future. We'll probably see a car with the overall platform on the roads in probably the next 12 months based on our autonomous driving platform.

So, those are our four businesses. Our results, just finishing our first quarter of the fiscal year, grew more than 13% year-on-year. We also reached record levels in terms of gross margins in first quarter and managing to keep our overall OpEx within a good investment level and producing profitability growth of more than 40% or more than 470 basis points year-over-year.

We continue to stay focused on these four markets. They have large TAMs in front of them for us to go and deliver. And the great thing about it is the same unified technology, same architecture under each one of those, okay. So, that's a pretty high-level approach to our business right there. Let me know if you have any other questions.

Q&A

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

Yeah. Sure, Colette. So, that's - I would say NVIDIA is in the sweet spot of all the hot topics in technology today, your PC gaming, your virtual reality tied into that. And I

noticed you did say future virtual reality, but you're not saying that it's happening right now?

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

Yeah. I think virtual reality is not yet what we'll call good enough. I think it's in the initial phases of what we're going to see in the future. And it's a situation where the technology has finally reached a position where it is a good experience for the user with the overall performance of the GPU matched together with a set of headsets. You now have a great position.

It is likely the future of next-generation gaming and we have surrounded in many, many aspects, not just from delivering the overall performance of what we can do from a GPU, but also working with our content developers that are building content for virtual reality to assure that the software that comes to virtual reality, we can actually better ourselves as well with our understanding of the use of the GPU. So, it will continue to improve. We're excited versus what we see right now. A lot of people are engaged on it, but we know there's many years to come in terms of virtual reality.

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

Okay. Great. And also the - your move into the datacenter, I will add that with all this great growth you've had and high gross margins, your stock has doubled in the past year. Is that about right?

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

It's about right. Yes.

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

And, but - that you're now getting adoption in the datacenter, can you talk about that? What was your competitive advantage? How did you get there?

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

Yeah. So the GPU and the datacenter, a lot of our focus, for example, as you've seen us over the last couple of years, has been discussing deep learning. We actually used two GTC conferences, for us to discuss the field of deep learning and a lot of its use cases. The GPU is just extremely well positioned for overall deep learning. Its position as being a tremendous performance and capable of also great power efficiency, but also the key thing about it is its overall programmability. So, those three things mirrored (10:37) together in a field of what they were looking for in terms of building algorithms and building training algorithms for these applications has been very key.

We've been continuing to grow that with our work with hyper scales, the beginnings of other industries and enterprises over the last six months. And you'll see that all come together. So it's a position of increased breadth of the overall customers that we're working with, but also the depthness within those customers in terms of the projects that they are rolling out.

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

Good. Can you talk about the competitive landscape?

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

So, competitive in deep learning. There's different form factors to complete accelerated computing. Accelerated computing has been a driver a lot of the supercomputing era. We tend to hold the majority of that share in the supercomputing world. But in the deep learning, they're really working on an improvement in their overall TCO, improvement in terms of how the speed of the training and the training of the data can take place. So, there hasn't been a significant amount of competitors really working on that level of performance. There's other different forms of accelerated in terms of custom ASICs or what you may see in terms of FPGAs or others. But the use of a GPU has generally been one of the leader types of technologies that have been in use for deep learning.

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

Okay. And just maybe we take a step back into PC gaming and talk about the competitive landscape there. You've introduced the new architecture and there are reports from John Petty Research and Mercury Research says keep track of market share, that's units, so.

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

Yes.

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

That they track. And can we talk about the difference between what you're doing in PC gaming versus what some of those market share numbers might show?

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

Yeah. So the market share partners that we see out in the market, what they can see is relationship of the number of GPUs that are sold in the market with the denominator essentially being the number of PCs on that piece. So, we do participate in what we'll refer to as a mainstream PC or a general purpose PC that is sold.

The price points on those types of GPUs are probably double digits type of range and their profitabilities are probably even lower. That's where there is a significant volume (13:23). As you think about the size of the overall PC market in total 200 million to 300 million PCs a year, many of them not customized for apps that require super high-end graphics. Now, when you think about that we still have a significant hold of the overall share of the market even in those factors. But what we concentrate on is the market that we are focused on is gaming.

Now, gaming is a subset of the overall PC market and the majority or the lion's share of what we sell into PC gaming market that is not necessarily a PC that is sold. What I

mean by that is, generally, a PC is owned. These are usually self-built types of PCs, and they are just improving the overall components as the overall gamers whose wish (14:11) in terms of in the add-in card market. So the majority of our revenue in the gaming is in the add-in card market.

When you break down that market for gaming, we have a large lineup of different cards for gamers. We tend to want to provide a gaming card for every type of gamer that may be out there, ranging from \$100 GPU up to \$1,000 GPU. We launched a new set that is geared more towards the higher end of the gaming market. We see the production value of games continuing to get better.

We continue to feed that market with better performing products, and our current performance of the Pascal architecture is one of the best performance increases from a prior architecture that we've actually had. So that part of the market, we've been in a leadership position for quite some time and a significant lion's share of the overall PC market because of that.

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

Yeah, okay. And with that, the Pascal, you're - also you've changed the architecture and you're going to a different process mode. In the past, that's resulted in lower gross margins, for the first couple of quarters for NVIDIA. Can you say why it's different this time?

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

Well, at the time that we looked at - over the last five years, we had been on the 28-nanometer for some time. So, we've continued to improve the performance even at 28-nanometer. We felt this is the time to move to a new node with 16-nanometer. So with that combination of a new architecture and a node change you've seen the substantial improvement of performance.

But you're talking about a new process. With the new process on day one, there's something different than what you realize on whatever date or five years of the last type of node. If not, anything different than any of our other product transitions that we've gone through and we master the bring down of our current architecture as well as the bring up of our next architecture about as smoothly as we can.

And again, at this stage in terms of what we've seen, we feel very confident that again the experts that we have within the company will manage through that well and we still have an opportunity for gross margin and gross margin focus as we go forward.

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

Okay. And you had mentioned that the PC gaming market is growing at 30% CAGR, your growth within. What about going forward, I guess do you expect the same type of growth rates going forward?

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

So, the overall PC gaming market, there's a couple outside firms that have focused on trying to look at the overall money within PC market going forward. A lot of them look in terms of the high-single digits, double-digit types of growth rates going forward. Some of those are the same numbers that we have seen historically and we've been able to grow a little bit faster or maybe a little bit more faster than the overall market as a whole.

Again, we're very pleased of the excitement around our Pascal architecture, the opportunity for Maxwell users to move to the new Pascal architecture, and then also to realize the gains that are coming out there. We don't have a long-term look, what people look at is about double digits in terms of the total market, and we'll see how we perform.

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

Okay. Maybe - we didn't spend much time on automotive. You talked about what you're doing for the self-driving car. What's your revenue today in automotive, and where does that mostly driven for (18:20)?

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

Sure. So, we had another record level in terms of automotive with our Q1 results, and it grew more than 40% year-over-year. We finished last year in the plus \$300 million, almost \$350 million range for automotive. You're correct, the majority of that is our infotainment systems. Our infotainment systems where we focus on premium infotainment in a premium lineup of cars where we have digital dashboards or digital cockpit in many different types of those high-end models going forward.

We continue to focus on new models, new model wins on that premium side, and that's a focus on our business of the 10 million cars that are on the road, as well as the additional models that we'll have going forward. Our long-term focus and strategy really takes those relationships that we had built with the automotive, and understanding one of the more exciting and challenging areas which is focused on autonomous driving, and the strategy that's going to be necessary to build that out.

In our discussions in terms of working with the automotive, they understood the need for a significant amount of compute capacity for autonomous driving going forward. For many years, they were focused on man-years-written algorithms that would write scenario by scenario on how to drive a car or essentially some of the ADAS work on how to signal to the driver or how to stop the car. But when we showed them some techniques focused on deep learning, focused on using those types of techniques for autonomous driving, we were actually able to cut the time down significantly on the time that was able to build those overall algorithms. So, focused on a platform that they can continue to bring the algorithms that they have, continue to write on our DriveWorks developer platform as well for that center computing platform going forward is our strategy as we go forward.

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

Okay. Yeah, I'll open up to audience. Any questions? I guess not. We'll continue on. So, also, I remember a time when 40% gross margins was almost unthinkable for GPUs more than 10 years ago. But now, you're hitting record-high gross margins. Can you talk about what the components are for your gross margin expansion that you've had?

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

Yeah. I mean, our focus on gross margin has really been about delivering the value that is incorporated not only in the GPU or the underlying chip architecture, but the value that we deliver in the development platform across each of these four markets. We have a significant amount of software work, building that development platform, developer tools, developer libraries for each one of those markets that would be considered GameWorks, DesignWorks, and we've talked about what we do for automotive as well as what we do in CUDA and CUDA DNN that we do for datacenter. These additional development platforms, is what helps the adoption of that full platform within the markets that we're looking after. That improves the overall value of what we're delivering. That enables us to maintain our overall pricing and the gross margin improvements that you've seen over the years. But it's still going to be our focus in terms of increasing the value that we deliver inside each one of those platforms, and therefore, also increasing gross margins hopefully as we go into the future.

We have a set of growth markets that have higher gross margins than the company average. If they continue to grow faster than the company average, there's an opportunity as well for additional gross margin. We just can't play through that mix perfectly to see where that's going to land.

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

I see. Yes?

Gaming and specifically eSports is starting to get a lot of, what I guess, perhaps attention. Maybe just sort of go through with how you think about the opportunity there and how NVIDIA thinks about the opportunity there. How big can this really be? Or is this just evolving sports phenomenon sort of like a flash in the pan (23:12)?

I'm going to repeat it for the webcast. The question is around eSports and how big can this get to be? We've seen pictures of full stadiums with watching gamers play against each other.

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

Yeah. So, eSports is a key base of the gaming community. I think it's a key part of the overall social platform that has brought more and more to the overall PC gaming industry.

It's brought folks online, brought them together. It brings the friends together. It brings the peers together in that type of scenario. They see the equipment that the professionals are using. They see what their friends are using in terms of equipment as well, which continues to drive more purchases both of better games for them to play, as well as the underlying performance of the GPU.

We'll continue to work to provide more performance and a continuous ecosystem around eSports or the overall social platform. So, just as we have in the other parts of our portfolio with our overall GPU for gaming, we have an ecosystem of working with game developers, working with the actual gamer and assuring the downloads of the games that they're doing, the configuration, the drivers that they need to play their favorite games is a simplified, easy process and making count on the brand of NVIDIA to assure that, that experience is great. So, we continue to work the whole ecosystem from the game to the actual experience in terms of what they're playing in terms of games.

The work with the gaming developers is to help them on features. Years ahead of the games actually coming true to life, we've been working with them to master the overall graphics that they may want to put in terms of those games. So, eSports has continued the social platform, continued the expansion of the overall market just as the expansion of better games and a better GPU has done.

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

Anything else from the audience? Yes? In the back, Chris (25:41)?

Can you just talk about the potential for the enterprise market (25:45-25:57)?

The question was what's the potential for the enterprise market which I would say ties in to VMware and Citrix virtualization of a GPU?

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

Sure. So, there is a couple areas where we focus on the enterprise. In first piece, when looking at our workstation business and the overall design field, there's a couple different areas. When you think about design as we go forward, design in terms of the time for rendering and the time that it takes in the full design process from what they see in a drawing to what they see from a prototype. If we can improve that process with the libraries of materials, the overall ability to prototype on your screen, it's a great overall feature for the overall design community. You can also see the application of virtual reality in terms of the enterprise.

You've seen a lot of things start to come out in terms of automotive showrooms instead of actually stocking the overall cars, you can go into a virtual reality experience with a high-end workstation and feel the next car that you may purchase in terms of VR (27:12). It's very popular also in terms within the medical field. How do you train overall surgeons? And train surgeons in terms of a virtual reality experience can also be the future of what we see in terms of virtual reality and not just on gaming, but in the enterprise.

But our focus in terms of expanding the collaboration of design in enterprise is also a very huge focus.

So, when you think about anything that is designed, it's rarely that it happens in one room or one development group. It's often shared by development groups that are located all over the world. Sharing those different designs across the world through a cloud experience has made it much easier in terms of the time to, overall, complete that.

You could actually complete the design of the building, do the actual structure here in the State of California but do the HVAC for the landscaping through another part of the world such as India and share those designs, overall, together. That's some of the basis in terms of our virtualized experience.

It's also very important where people want to keep the overall computing capabilities in the datacenter and that is only streamed down in a VDI experience so that the application is running in the cloud. Our use with the enterprises has been a huge focus in terms of our virtualization as well.

And then thirdly, as we think about what we've done in terms of deep learning, with the hyperscale then in the datacenter, there is absolutely a focus of how this applies and is applicable to our overall enterprises as well. When you think about the significant amount of data that many enterprises are looking for the data analytics, the deep data work on a lot of the big datacenters is a huge focus of ours as well. So we're in those initial stages of working with the enterprises on that part as well.

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

And one thing left. I think all investors are having a problem with, and this isn't just NVIDIA but anyone that's selling into the cloud or into these hyperscale datacenters. How do we gauge how big these markets are? We don't know, it's all greenfield, I guess and some of your cards are rather expensive relative to your chip price. How would you recommend investors try to model out your cloud business?

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

Whether it be our datacenter business or the work with the datacenter with a lot of the cloud providers and the hyperscales, we're really looking at new computing models as we go forward. The use of acceleration will likely get to be a larger percentage of the compute environment in the datacenter and also probably for the enterprise. It is important that people see the speed in terms of how fast people have moved to other options for improving the throughput out of their datacenter using acceleration techniques.

Now, how big will that get or how fast will it move? I think that's hard. I think we're in the initial innings of what we're going to see in terms of that movement in the computing model, but it's an exciting time to think about acceleration.

Q - Kevin E. Cassidy {BIO 15420688 <GO>}

It is great. And that's our – our time is up. Thank you very much, Colette.

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

Thank you.

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