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THE ENTREPRENEURS' LAB:PRESENTATION OF 3D VIRTUAL EXHIBITION

Building Russia's Creative Capital

JUNE 18, 2011 — 10:00–11:00, Pavilion 8, Conference Hall 8.2 Innovation Hall

St. Petersburg, Russia 2011

Panelist:

Georgy Pachikov, General Director, ParallelGraphics

A. Karachinskiy:

Good day everyone. Today we are holding an entrepreneurs' lab, and joining us is George Pachikov from the company ParallelGraphics.

G. Pachikov:

Good afternoon.

A. Karachinskiy:

I'll say a few words about George, whom I've known for a long time. The idea behind the entrepreneurs' lab is to tell the story of people who are shaping the future of Russia. There was once a very famous company in Russia called Paragraph. With perestroika came computers, and with computers came various programs that we all used. Paragraph became the first company in what was then still the Soviet Union to commercialize these products. Almost everyone probably used the Lexicon program. That, I believe, was one of the very first commercial programs. The Lexicon program was created by Paragraph. Then a different company began to produce it, but Yevgeny Veselov, who created it, got his start at Paragraph. The thing that's interesting about Paragraph, in my opinion, is that it was the first company to really reach the West. Now we all rave about Apple, and we all use iPhones and iPads, but everything at Apple basically started with Paragraph, because Paragraph developed a program that could recognize handwriting. Back then, Apple saw everything it does today a little bit differently. In 1991, I believe, they released a prototype – the 'grandfather' of the iPad and iPhone – called the Newton. It was a small device that you could write on. The Newton was based on a program that Paragraph wrote and that was ahead of all the technologies then existing in the world. That program recognized handwriting. With it, you could write something, and it would turn it into typed text. It was wonderful. They were the first ones to sell a license to Apple then. Apple bought the license, and a rather large group of engineers—25 familiesunfortunately moved to Silicon Valley, because one of Apple's conditions for buying the license was that all the developers move to Silicon Valley. The people at Apple didn't believe that everything would go well here. They said that they would buy everything, and that they really liked it, but that who knows what might happen here. Nonetheless, some people stayed. George was one of them. Unfortunately, his brother, Stepan Pachikov, with whom he created Paragraph, left. Then, the company ParallelGraphics came into being. George does things that, in my opinion, are also changing the world in significant ways. This is already our third entrepreneurs' lab. Last night we had Mikhail Pogosyan, who talked about a breakthrough in aviation that Russian engineers made. Today we had Andrei Biryukov, who discussed a different breakthrough, in auto production, which is also the work of Russian engineers. I sometimes hear our leaders say that we have to learn from someone. But it seems to me that we also have a lot and that we also have things to teach others. I saw how on the last panel, there were people—probably from China, or from Asia—who very attentively wrote down everything that Andrei said. Andrei's team created the first program – or way of thinking, or entire technology - that makes it possible to design engineering projects in a completely different way. George will talk about just that. George, I have a question for you that I want to start with: half the people left, but you stayed; do you regret that?

G. Pachikov:

No, because we're doing what we love, and I'm not sure that we would have been able to do that there. When you interact with people in your native language, it is, I think, a lot easier to do this work. On the other hand, what difference does it make, doing it here or there? It's just more comfortable and convenient for us here.

A. Karachinskiy:

Okay. Then let's get right into talking about ParallelGraphics. Give us a brief history.

G. Pachikov:

When, as you accurately described, we were bought by Silicon Graphics, we worked with them for two years.

A. Karachinskiy:

They bought not you, but Paragraph.

G. Pachikov:

Yes, Paragraph. One group of people left, as you said, but another group stayed, and we bought the company back from Silicon Graphics. At Silicon Graphics, we mainly did entertainment – Disney, Disney Online – but we didn't believe in that philosophy. Now people talk about Second Life, but Second Life appeared here ten years before it appeared in the West. Here, kids went to the computer club on Red Square and socialized. There was Avatar there and so on. That was all a long time ago. It's just that we understood...

A. Karachinskiy:

Can I jump in for a second? Here's another interesting thing: George and Stepan—when Stepan was still here—had a very important idea. Back then, computers were rarities still – an average person couldn't buy one, as they were very expensive. Stepan and George opened a children's computer club. They bought a building in central Moscow with their own money, restored it, and kids came. There were computers there, and all the computer companies participated in it, and everyone helped. I remember that I myself took part. We bought computers so that kids could come and use them. There were a lot of people. Garry Kasparov, who was among those making big money back then, being the

world chess champion—this was the late 1980s, early 1990s—also donated money. There were quite a few significant people there, and there was an utterly fantastic creative atmosphere.

G. Pachikov:

Well, yes. The instructors formed Paragraph using that computer club as the foundation. Returning to our company, ParallelGraphics, in 1990, we agreed to a management buyout for one simple reason: we had worked on visualization our whole lives, and we thought the right thing to do was to use 3D graphics to create 3D video datasheets. Maybe we should just start the presentation?

A. Karachinskiy:

Yes, we'll start it up in a second. Just a few more remarks. What did you start with? This is, after all, an entrepreneurs' lab. You bought out the company, and then what happened? Were there investments?

G. Pachikov:

No. At that time, we already had a philosophy; it was clear what we wanted to do. What typically happens in Russia? People create a technology, and then they think about what to do with it. It was the same way with us: we created technologies and thought about what to do with them.

A. Karachinskiy:

May I rephrase that? You thought about how to make money.

G. Pachikov:

Well, yes—we didn't know how. Here we had good compression capability, and we compressed data down a hundred times, and so on. This was thanks to Sergei Kravchenko, who somehow invited us to Boeing. There, we gave an

excellent presentation, and Boeing Vice-President Rich Higgins said, "Let's try doing a demonstration." And that is how we ended up in the PLM chain—the product lifecycle. Thanks to Boeing, we began working with them and in the end created our own products that we now sell, so-called 'rapid tools'.

A. Karachinskiy:

You created a company. I remember that you went looking for investors. And you found some. Tell us a little bit about that.

G. Pachikov:

In general, we have difficulties with investors, because it's a challenge explaining what we want to do. Investors act on the basis of an analogy, and when there is no analogy, they don't understand. In the end, we found investors: Mint Capital invested money in us, and then so did Troika Dialog.

A. Karachinskiy:

Mint Capital is a small Swedish fund.

G. Pachikov:

Yes, they invested money in us, were the first to believe in us. Then Ruben Vardanian invested...

A. Karachinskiy:

That was RBK? As I understand, Troika invested in conjunction with RBK. Or is that wrong?

G. Pachikov:

No, that was a Tatar fund, government money.

A. Karachinskiy:

I understand: government money, a regional fund.

G. Pachikov:

Yes. We needed that money in order to create our own products for manufacturing—for cars, mostly. This is very important: why are we talking about aircraft manufacturing? The reason is that an airplane is such a complex machine that simply to understand the what, where, and how, is impossible. How do you describe all that? When I saw the technical documentation, it was simply mountains of books. I saw Boeing's assembly shop. There, just in the assembly shop, they have these piles of books, and people are reading quickly, looking to see what they're supposed to do. By the way, on the screen right now, you'll see an airplane pump. Imagine that if you click on it, you can see how it is disassembled. Yes, you have text along with it, but inside that pump, there are so-called plungers, and just try to describe how those plungers come out of there. You have to squeeze them and turn them at a certain angle. It's almost impossible to describe that in words. All equipment comes with technical documentation these days.

A. Karachinskiy:

And you have to describe this to the engineers who will be assembling and repairing it?

G. Pachikov:

Of course. That includes during assembly and during after-sales service—of aircraft, in this case. Take the engine. We have five books on different topics, including even Leonardo da Vinci, though I'll get to that at the end. We did not want to show you a manual about what engines are made of. That's not very

interesting. We wanted to discuss whether it is possible, for instance, to make it so that all this ends up in a real museum. Take, for example, the automobile.

A. Karachinskiy:

George, promise that you'll say Yo-mobile here, and not Porsche.

G. Pachikov:

Yes, that automobile is almost a reality. You can get in it and look at everything in it: the engine, the doors, and so on. We wanted to tell you about the company, but not about what we're already doing now. We want to take a look into the future. I listened to your last session, and the question of what will come next interested me. I promise you that in the world of tomorrow, all this will happen on the internet. Ten years ago, we said to a certain American company—the company that was the second on the American market after Microsoft and that supplied these textbooks called 'living books'—"You're not making a product for the internet." "What use are they?" they said. We replied, "You will not last long on the market, then." And three years later, the enormous company Brøderbund Software disappeared. It's the same thing here. This exhibition has special significance. I have a young child. We recently went to a museum that opened here not long ago. It's great that they made it, but it looks awful. In San Francisco, they have the Exploratorium. The impression I was left with there is still with me. I went there with my eldest daughter; you can touch physics devices, look at everything. All that can be designed, and we have the instruments to do it.

A. Karachinskiy:

George, let me ask you some questions. I want people to gain a better understanding. What is your product, exactly?

G. Pachikov:

The product is a set of tools that allow you to create animated technical documentation.

A. Karachinskiy:

So, when designing a complex technological product, your tool can be used to automatically create an entire set of documentation. Is that right?

G. Pachikov:

No.

A. Karachinskiy:

Then tell us how it actually works, so that everyone can understand.

G. Pachikov:

I'll explain. There are currently three international giants: Dassault, Siemens, and PTC. These three companies create CAD products. These are products for designing Yo-mobiles and aircraft. These days, everything is designed using CAD, even chairs. But this represents huge amounts of data. I've already said what we learned how to do. We learned how to compress these data down to one hundredth of their size. Since we are an internet company, we make everything for the internet. And for us, and for companies such as Boeing, General Electric, and so on, it's very important that these data be compressed. Why? Because these data have to move around on the internet; because our clients download these data through the internet; these data have to move around on various devices: on iPads, iPhones, and Androids. It's clear that if you have enormous amounts of data, you won't be able to do that.

A. Karachinskiy:

Why does it have to load on iPads? Because an engineer who crawls inside an airplane can't take a big computer with him?

G. Pachikov:

Of course. For example, look at the space station: it's not just a toy. We actually work with the European Space Agency, and the astronauts who are currently in space use our software. This includes instructions for how to turn the water on, and so on. At first they used laptops while in space, and this program helped them to survive, because the procedures even for operations such as turning on the water are very complicated. And there are a huge number of operations, and now all that is just sent to them on iPhones, iPads, and so on. That's very important.

A. Karachinskiy:

So, when problems occur in space and something has to be taken apart—astronauts, after all, aren't experts at everything—they're sent a small file with video instructions about how to take everything apart and fix it?

G. Pachikov:

Yes, of course: where to go, what to do. Otherwise, it's very difficult. For example, you have to open such-and-such a tap, go to a certain place, do one thing, then another. I want to draw your attention to the screen, which is currently displaying a system of pendulums. That pedestal is turning, and you can see that it is not just a picture. These are all realistic models; everything is described in mathematical formulas and physical laws.

A. Karachinskiy:

May I ask more detailed questions? So you made this. Tell us about specific clients of yours who use this and how it is used. Do they just buy a box from you, or is there a different process? Can you give us a specific example?

G. Pachikov:

For example, take General Electric, which makes engines for airplanes. This here is a real engine, no joke. Only this, I believe, is a Rolls-Royce engine, not a General Electric one.

A. Karachinskiy:

Rolls-Royce is also a client of yours?

G. Pachikov:

Yes, and Pratt & Whitney also. They buy tools from us with which, for instance, they make parts catalogues. That is a very important concept. I recently watched a program about Boeing on Discovery, and I was amazed at what an enormous number of parts they have, at how enormous and complex a task it is to deliver—on time—spare parts and so on to all the airline companies. It's incredible how all that is organized there. But in order to organize all that, of course, you have to have all those numbers. Imagine: there are millions of parts there, and you have send out all the right ones—that specific bolt and not that other one, and so on. It's all very difficult. They have this person, Lou Mancini, who organized it all, and it's simply incredible.

A. Karachinskiy:

Let's get back to what you really do.

G. Pachikov:

We have created a tool that allows you to take CAD data that has already been created by engineers and make 2D and 3D datasheets for it simultaneously: operational documentation. That is to say, we basically animate it. Maybe it would be better to show this on an iPad? Let's look at an engine. It comes with a table called a part catalogue. We associate this part catalogue with the parts. And now everything extraneous is taken away, and you are left with what you need, and here every part has a number and so on; it is brought into accordance with the table. It's a very complex process.

A. Karachinskiy:

How much money did General Electric save by using your technology?

G. Pachikov:

I have specific data for General Electric. They cut their expenses for the creation of datasheets by more than 70%.

A. Karachinskiy:

Do the numbers say how much that is?

G. Pachikov:

No, I don't know.

A. Karachinskiy:

So that means 70% of the amount they used to spend on creating datasheets?

G. Pachikov:

Yes, the cost went down by 70%.

S. Kravchenko:

<Unintelligible.>

A. Karachinskiy:

I'll repeat what Sergei Kravchenko said just now. He knows this very well. He said that it takes 5,000 people to make datasheets for an engine using the old technology. If they saved 70%, then that's almost 3,500 people.

G. Pachikov:

I know that with Sukhoi, as Mikhail Pogosyan said, their datasheets were supposed to have been made by the French, and they let them down. In the end, they decided to do them themselves, but for now they are making two-dimensional, not three-dimensional, datasheets. Imagine that you have the reverse task: you have a digital airplane. It is called that because it is numeric. From those numbers, you have to make drawings. And even the process of taking a three-dimensional picture and making a two-dimensional one from it is very complicated. I know that they spent around USD 3 million on 10,000 drawings (a small portion of the total) just to take them and modify them.

A. Karachinskiy:

George, tell us more about your clients. Who else uses this?

G. Pachikov:

The well-known company Boeing uses this. We are very thankful to them, because it was due to them in particular that we made our tools. At first we did research on outsourcing. But it wasn't profitable for us to do that research because it was expensive, and we created tools for ourselves, saving money and minimizing expenses. When we created those tools, we started to sell them. Airbus became the next buyer. For the A380 aircraft, they began making all the AMMs (Aircraft Maintenance Manuals) using our tools. I liked General Electric

most of all. They've done a great job: They weren't afraid to change their process of creating datasheets and part catalogues. There's one other very important point, and we're showing you this museum for a reason. When you have data that is already optimized—when you have part catalogues—you can use them repeatedly. There is a term for it: reuse of engineering data. That allows you to save money. You can make a part catalogue, a manual, and CBT (computer-based training). For General Electric, we made computer-based trainings for all their engines. At first they asked us to make one for a single engine: the one that will be in the Dreamliner. We did the complete CBT for them in Moscow: everything, including the voiceover.

A. Karachinskiy:

Can you go into more detail?

G. Pachikov:

Unfortunately, I can't show it to you because it cannot be displayed. It is computer-based training. It's two programs that ask an engineer questions, at first verifying what he knows about the engine. All the courses on engines are in 3D, and the voiceover tells the user how the engine is set up, what its different parts are, how to do things, how to replace things, and so on. It's called CBT: computer-based training.

A. Karachinskiy:

How does this benefit a company? Does it lower training costs?

G. Pachikov:

Of course. They have to train the employees of airline companies, Boeing employees, Airbus employees. They are required to train everyone they supply with engines. This is cheaper and more efficient, not only in terms of cost, but

also in terms of quality of training. That's basically what we show in the virtual museum. This is all visual—you can go up to it and touch it.

A. Karachinskiy:

Which sectors, which parts of the market, would be interested in this in Russia?

G. Pachikov:

If we're talking about datasheets and training, then I think everyone needs those things, from schoolchildren on up. You show them the periodic table, for example. It's not just a picture: it is interactive, and you can view it in 3D. You know, we have this kind of cart. Like Kandinsky wrote: when the cart moves upward, to the top of this little triangle, on top there's a genius. In this case, there are large companies that stand on top—for instance, Sukhoi. This cart gradually moves upward and, more and more kind of dipping downward, embraces all other sectors. I think that in the future, this will be on the internet, and any housewife... After all, how did all this begin, Anatoly? My washing machine broke.

A. Karachinskiy:

So that you could repair your washing machine yourself?

G. Pachikov:

Yes. We took it apart, but we didn't know how to put it back together. In our case, it will just say how to do that. Or, for example, you all use Ikea products. I graduated from university and work with complex things, but when I buy things from Ikea, I find it impossible to put them together the right way on the first try. There are companies that use our technologies. They show you how to take something apart or put it together: stick this here, and this over here. It seems to me that this is very important for the Ministry of Education. They have to make an Exploratorium, where you can touch all of this, make it really interesting.

A. Karachinskiy:

Well, this is an economic forum, not an educational one. For us, the main focus is the economy. Tell me, what does the future hold? How do you envision the company and the product developing? What will happen in related industries in the future?

G. Pachikov:

We have come up against difficulties. When you go to a large company (for example, right now it is Rolls-Royce) and say that you can do that, then if you're a small company (and we are a small company; we only have 50 people), then first of all, they do not believe you. Secondly, they say, "It's great, what you do; you're the best." (And we truly are the best in the world at what we do: better than Dassault, better than PTC). They say, "We need the entire cycle." It's a very complex field. When, for instance, you design an airplane (and all airplanes are different from one another; no two are alike), and then you change one part for one from a different manufacturer, all that must be reflected in the datasheets. Everything is connected. So, of course they want a comprehensive solution, but that is very expensive. As of this year, we have active partnership agreements with Siemens, and they now offer Siemens-PLM solutions jointly with ours. We won a tender held by Dassault in conjunction with Siemens. We won the right to do the Honda Jet. They are currently making absolutely incredible business aircraft; we've also won tenders held by PTC and Dassault. In my view, you do not need to be afraid. On the contrary, you need to join together, form friendships, and complement each other. In my view, we formed a missing piece for Siemens, and the product lifecycle chain has been made complete.

A. Karachinskiy:

But what about in Russia? Who in Russia needs this?

G. Pachikov:

In Russia it's more complicated, but there are companies that are interested. We currently work, as I said, with Irkut (that is UAC), which makes MIGs. They also make the Yak-130 military training aircraft, and they already make datasheets that are three-dimensional, not two-dimensional. You see: this is an advertisement about what we do. These are solutions in Russia. We will soon be participating in tenders for a tractor factory. All complex equipment will require good datasheets sooner or later. Russia cannot compete today supplying just metal, just tanks. I remember one incredible story. It was about eight years ago. Two generals came to me, took a look at what we do, and said, "Listen, this is how it works. We delivered aircraft to Algiers today. We have a team of engineers there who are servicing those aircraft. We fly there and inspect them. With people like you, we won't be needed. So we do not need that." These days, no Western company that we try to sell our products will buy anything without adequate accompanying datasheets. They say, "We need your aircraft; make it so that it flies and requires minimal servicing, so that we can do it all ourselves." And that is possible only with good computer courses and good datasheets. We have the technology to create those datasheets.

A. Karachinskiy:

What is next?

G. Pachikov:

Do you mean an exit strategy?

A. Karachinskiy:

What's going to happen with the product, with the technology? What will happen in five years? There are people sitting in this room who will produce something. What should they prepare for?

G. Pachikov:

It's clear that the world is changing. In 1993, Apple made this toy here. It wasn't the Newton, but rather this big panel. There was a touchscreen on it, but it didn't fly. Then, if you remember, there were various things like Windows Touch. Suddenly, the iPad appeared, and it took over. Now everyone we go to says, "Guys, you have awesome tools." The concept of publishing on a computer does, by the way, exist. When we created some kind of datasheet using our tool, we needed to publish it—either as a PDF (and you know, PDFs support 3D; they have the U3D format built into them)—and we 'spit it out' into a PDF, and you get your datasheet, or you 'spit it out' onto some other device. And so, they say, "No, we need it to work on the iPad." Rolls-Royce is now saying that they need it on the iPad. I saw, for instance, a helicopter belonging to a friend in the U.S. He has an iPad attached as a manual. It's incredible.

A. Karachinskiy:

Tell us a little bit about the people, about the engineers.

G. Pachikov:

That's a good question, because they are, of course, unusual people. Before me, Andrei Biryukov spoke about this very issue, about education and so on. It is, of course, a huge headache when practically all the talented people are looking toward the West and trying to leave Russia. And this is not because there is nowhere for them to apply themselves. Times have changed. I was talking with someone recently, and they told me: "What is this panic about at the fact that lots of people are leaving Russia? People are leaving Germany, England, everywhere." The reasons can be different. People travel around, move from country to country, and that's great. There's just one difference: When I worked at Silicon Graphics, I had a friend from India, and he told me that he didn't know

a single Indian who didn't dream of returning to India. People should leave; they should go learn new practices, and we have to make it so that they come here and share their knowledge with us.

A. Karachinskiy:

Tell us about the engineers at ParallelGraphics.

G. Pachikov:

I don't know where they come from. They are a little bit crazy, in a good sense. They are people who love what they do. Let's look at Leonardo. You understand? How can you not love your work? They take a book by Leonardo da Vinci—he never even made anything, only sketches—and they take it and make what he sketched. And this thing shoots.

A. Karachinskiy:

So this is a prototype of our howitzer, is that right?

G. Pachikov:

Well, yes. You understand, right?

A. Karachinskiy:

And this is probably a Katyusha rocket launcher.

G. Pachikov:

Yes, probably a Katyusha. There's also a tank prototype there (load the tank for us). And in their free time they make virtual manuals for airplanes. That's what they love. They just like it. We have these opportunities.

A. Karachinskiy:

This is a tank as imagined by Leonardo da Vinci.

G. Pachikov:

If you go inside, there are hand pedals in there. This tank was driven by turning them. This was the 16th century, you understand.

A. Karachinskiy:

Okay. Let's give people the opportunity to ask questions, since our time is coming to an end. Are there any questions from the audience? There are.

B. Mekhanoshin:

Good afternoon. I wanted to say hello to George once again. I came to see you a long time ago. My name is Boris Mekhanoshin. I'd like to invite you to come see me at Holding IDGC. We have two million kilometres of power lines in 69 administrative subjects of the Russian Federation.

G. Pachikov:

I remember. Okay.

B. Mekhanoshin:

We need this. I see an application for this, and the Holding already has programs with those very same names: Virtual Exhibition, Virtual Operating Datasheet. And I require those from all manufacturers.

G. Pachikov:

I'll be in Moscow tomorrow; we'll talk.

B. Mekhanoshin:

By all means.

A. Karachinskiy:

You see, this entrepreneurs' lab has had results. As a matter of fact, the idea behind the entrepreneurs' lab is to see what is being done here. Yesterday, Eric Schmidt from Google sat there for an hour, the room was full, and everyone left impressed, though he said absolutely nothing new. Everything he said has already been written. Yet we don't know our own people.

G. Pachikov:

It's very interesting.

A. Karachinskiy:

I'm delighted.

Y. Voropayev:

Yury Voropayev, MKD. I understand that digital technologies and mechanical parts are important things right now throughout the world. I have a question for you. Repairing a washing machine—or anything, from household appliances on—is a good example of what digital technologies can do. But maintenance technology is constantly changing. Will the digitization itself, the product itself, which also has a lifecycle and an economic component, not become a hindrance when replacing maintenance or operating technology?

G. Pachikov:

No, it won't. I'll answer your question. By "digitization", do you mean that engineers...

Y. Voropayev:

You create a product. You create a motor, and you make digital drawings for it. Then, you make a manual for the operation and maintenance of that motor. That product also has a lifecycle, because time was invested in it, and it has to either at least fulfil its task quickly by having a large number of applications, and thereby sales, or it will stay in that form without changes for some time—five to seven years. But the operating or maintenance technology itself changes. And it becomes a hindrance, because the company acquired this product, but the maintenance technology has changed. So you have to re-engineer it before it has paid off financially.

G. Pachikov:

Let's examine a concrete example. A company makes an airplane. It's not like they digitize it; they design it directly in digital form. Now the question becomes how to create datasheets that will be used later on. For instance, General Electric has its datasheets made during the design stage. Then, that product is modified, and I, in fact, talked about the need to create a kind of system—which we do—that automatically inputs changes into the datasheets, into the operations system. If you're saying that you already have some technology, already have some airplane, and you enter changes into your system, that's very strange. You should follow the rules of operation, act in accordance with what's written there.

B. Mekhanoshin:

Can I add something? I think I have an answer to both questions. The thing is that there are two problems. The first problem is support of production and of the subsequent operation of equipment that is immediately created in AutoCAD—for instance, in three-dimensional drawings. The second problem, which I came to you with many years ago, is the transformation of our surrounding environment into designed digital formats. Back in 1995, when you and I were just beginning our work, we redid the operating datasheets for power lines using a laser scanner on board a helicopter. What does that give you? It makes it possible to redo operating datasheets and makes possible subsequent diagnostics and

subsequent repairs according to the technical condition of those surface objects—we do that—that exist and work. But your environment makes it possible to do something utterly amazing. It allows you to make information about any remote object with any assigned level of detail available to all the necessary specialists—maintenance technicians, designers, and so on.

G. Pachikov:

And those doing assembly.

B. Mekhanoshin:

It's a combination of the methods of creating content and of processing.

Y. Voropayev:

You did not answer my question.

G. Pachikov:

Why don't I speak with you afterwards?

A. Karachinskiy:

Our time is almost up. A technical question has been raised. You will have the opportunity to discuss it when the panel talk ends. Perhaps there are other questions?

From the audience:

How much is your company worth?

A. Karachinskiy:

Oh, a good question.

From the audience:

A number, without

G. Pachikov:

How much would I sell it for right now? Let's say for 100 million.

From the audience:

Thank you.

G. Pachikov:

Please.

From the audience:

Dollars?

G. Pachikov:

Dollars, of course. Or euro. We count everything in euro.

A. Karachinskiy:

The price just went up by 40%. Any more questions? Well then, I'd like to say once more that ParallelGraphics and George Pachikov are an absolutely wonderful example of yet another successful breakthrough in the world of technology. I hope that we will see the day George sells the company or holds an IPO. I also hope that we will see many more Russian clients for his company, because the main problem faced by companies that make the most modern technologies is that 99% of their clients right now are Western companies. We want to get to a point where they are better-known in Russia. Thank you very much everyone.