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JUNE 16–18, 2011**

**THE ENTREPRENEURS' LAB: INNOVATION IN RUSSIAN AIRCRAFT
BUILDING: SUKHOI SUPERJET 100 AND PROSPECTS FOR THE FIFTH
GENERATION AVIATION SECTOR
Building Russia's Creative Capital**

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Hall**

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Panelist:

Mikhail Pogosyan, President, United Aircraft Corporation JSC

A. Karachinskiy:

Good afternoon. Today we are trying out a new format that we would like to launch at the Forum, called The Entrepreneur's Laboratory. We hope to introduce Russian entrepreneurs and their businesses to you, explaining what they do and who they are. The format is intended to give these businessmen the opportunity to explain how they work and what they are involved in. To begin with, allow me to introduce the first entrepreneur we have with us today: Mikhail Pogosyan.

I would note that Mikhail is a unique businessman and we have chosen to start with him. He is a businessman who works in cooperation with the Russian state. We are used to thinking of entrepreneurs as people who work independently, competing with companies similar to their own. But there is a significant exception, which opens up other opportunities, when individuals can do business with the state. Russia used to be an extremely centralized country. Many innovative ideas were developed within state structures, but how could state innovations be turned into business innovations? In Mikhail Pogosyan we have with us today a remarkable example of this.

In the past we were accustomed to taking pride in our aerospace and aviation industries. But 20 years have passed since perestroika ushered in new economic conditions. A strange situation has arisen: we used to produce 3,000 aircraft a year, and our planes were to be found in every airport, but suddenly everything changed and there are now fewer and fewer of our aircraft. Aviation is considered highly important and everyone would really like our industry to be as strong as it used to be in Russia, but something is not quite right. 20 years have passed and we can see that only one company or, should I say, one person has achieved success.

In twenty years you have designed two aircraft from scratch. You designed the Sukhoi Superjet and the new fifth generation Jet Fighter, and for this, as we all know, credit must go first and foremost to Mikhail. Today we would like him to

tell us how he does it; how he sees the outlook for the aviation industry, in particular for Russian aviation, and what his future plans are.

Allow me to briefly introduce Mikhail. Mikhail currently runs our largest company in the aviation industry – United Aircraft Corporation JSC. I was unable to find the precise figures, but it employs somewhere between 80,000 and 100,000 people. Mikhail worked his way up from engineer to designer and personally designed the Sukhoi Su-27 and Su-33 aircraft. In 1984 he became head of the fighter jet design team, which produced the Su-30 and Su-34, and in 1987, at the age of 31, he was appointed head of the Design Bureau. I had the opportunity to speak with him back then. He tells me that, even then, he thought that military aviation was all well and good, but that we needed to focus more on civil aviation. I suspect that he conceived the idea of producing his first civilian aircraft in this period. Mikhail, I would like this to be an informal discussion. Please tell me, how do you find working with the state and what are your views on the arrangement?

M. Pogosyan:

I think that there is no necessity to work with the state, you simply need to have a clear view of what you wish to achieve, as well as of the market outlook and the task in hand. When you do this reasonably methodically, you generally find support from a large group of people, who are today's decision makers. I can say that we followed this path, with both the Superjet and fifth generation Jet Fighter projects, when no decisions had yet been made concerning the allocation of funding. It is a complicated process, but if you work methodically, then the state will respond to the right signals.

I believe that if you adopt a systematic approach, then this is thoroughly realistic. If your goal is not fully thought through and you are trying to involve the state in specific elements or stages, then there will be lots of questions and many

people, struggling to understand and not having received clear answers, will not lend their support to the project.

A. Karachinskiy:

What is the size of the market to which we can aspire?

M. Pogosyan:

In my view, in order to become the third largest global centre for the aviation industry, we need to increase production volumes about 4 to 5 times. The current production volume provided by the companies that make up Russian aviation is approximately USD 5 billion. For me, our goal now is to increase the production volume by a factor of 4-5 over the next 10-15 years. I think that this is realistic.

A. Karachinskiy:

I would like to hand over the stage to Mikhail, so that he can now explain to us how we will become the third largest global aviation power.

M. Pogosyan:

To some extent, we are starting the Russian aviation industry all over again. We are producing good aircraft and we are happy that others also like these aeroplanes. So, in discussing the future of the Russian aviation industry, I would like to focus on the Sukhoi Superjet 100 project, on the fifth generation Jet Fighter, and on new projects currently being executed by United Aircraft Corporation JSC. I would like to discuss our future outlook.

I came to the Forum on the first flight made by a new Aeroflot plane. Here is my boarding pass. My flight was on a Sukhoi Superjet 100. Let us have a look at how it went.

The first flight is an important step in the life of any aeroplane. The aircraft's future market success depends upon the extent to which it is accepted by pilots and technicians, passengers and flight attendants. During the flight, I asked a stewardess what she thought of the plane. She responded, "It is very bright." In my opinion, this is what we were striving for. It seems to me that you are sitting comfortably here in your seats in the hall and no one is stopping you from quietly taking in the information I want to share with you. Nor are your legs pressed up against the seats in front. This shows that the Forum organizers took time to think about your comfort and convenience. You might ask: "When we are on short haul flights, why do we have to feel differently?" When devising the Sukhoi Superjet 100, we were thinking primarily about frequent fliers and wanted to develop the kind of regional aeroplane that does not currently exist anywhere, which would enable regional passengers to experience the same level of comfort as on long haul flights. Mobility does not have to cause inconvenience. Your flight should be as comfortable and as safe as possible.

On average, how many hours do you spend in aeroplanes? Reviewing my schedule, I spend at least 6-8 hours per week on flights. This means that I am in the air for 12-15 days per year, with most flights lasting between one and three hours. I often fly to European cities and to towns in Russia and I have a very clear view of my preferences. We spend about 12 days a year in the air. I would like myself and the passengers who fly on our aeroplanes to spend this time in comfort. I do not understand why we all have to be uncomfortable in narrow, tunnel-like regional planes. Being uncomfortable for a few hours is one thing, but for 12-15 days a year? I do not think that we should be condemned to spend a long time in uncomfortable, cramped conditions and I see our approach to the Sukhoi Superjet 100 to be one with the desire to create an aeroplane in which 21st Century passengers would like to fly.

So what exactly is the project that we have carried out? First of all the aeroplane is comfortable; secondly it is ecological, and thirdly it is efficient. We of course

thought of passengers, safety, and the economic efficiency of using the aeroplane. As of today there are 170 firm orders for the Superjet 100. In ten years the airlines that use these aeroplanes will save over a billion dollars, and will be able to purchase an additional 30 aircraft with the funds. We therefore consider efficiency undoubtedly one of the most important factors in the development of the modern aviation industry. This aeroplane is already being flown by airlines. In April we handed over the first aircraft to Armavia, and I am happy to note that we are very satisfied with the fact that the plane is successfully in use. The aeroplane is currently serving flights from Yerevan to Moscow, Donetsk, Odessa, Simferopol, Lyon, Venice, Marseille, Tehran, Tel-Aviv, Tbilisi, Larnaca and Athens, that is to say everywhere: across Europe, Asia, Russia, and other countries, which it connects to Armenia. Here is a map and it is very important for us that the aeroplane has not only received positive reviews from passengers, but also from pilots.

A. Karachinskiy:

May I ask a question? What makes this aeroplane different from others?

M. Pogosyan:

First of all there is the level of comfort, with the wider cross-section giving each passenger more space and not squeezing them into a narrow seat. Secondly, the aeroplane has large overhead compartments, whose relative volume is comparable to those on long-haul aircraft, so passengers, as is the case on most regional flights, do not have to put their hand luggage in the hold and can carry it on board. This saves time and enhances passenger comfort.

A. Karachinskiy:

Is there nothing comparable?

M. Pogosyan:

We are talking about an entirely different level of comfort: long, narrow sections were once the preserve of Embraer and Bombardier, but these planes expanded from 50-60 seats to a capacity of nearly 100 seats. Those are no longer optimal proportions and I am confident that we have made the correct decision.

A. Karachinskiy:

What else is there?

M. Pogosyan:

I would say the modern air conditioning system. Speaking of convenience, Sergei made reference earlier to comfortable toilets. For me, in the narrow cross-sections of Bombardier and Embraer planes, the toilet is not sufficiently comfortable. In the Superjet 100's rear toilet there is even a changing table, where passengers with young children have everything they need to care for them during the flight. I should probably mention the navigation system, which is also fully automated. Passengers, of course, are acutely aware of the safety of the flight. Our aeroplanes possess a navigation system of unparalleled reliability.

A. Karachinskiy:

So this is unprecedented?

M. Pogosyan:

There has never been anything like it in regional aviation and, in certain respects, the system is even superior to those of modern, long-haul aeroplanes such as the Airbus A380 and the Boeing 787. Deeming the tests we conducted to be one of the key aspects of the project's development, we studied the results in especially great detail and, due to the aircraft being produced slightly later, we introduced everything new that we could implement at that stage.

A. Karachinskiy:

When did you begin to design the aircraft?

M. Pogosyan:

We actually started to design the aeroplane in 2005. We signed a binding contract with Valery Okulov (CEO of Aeroflot) in December 2005 and by then our work on the design had already begun. But the presence of a binding contract with Aeroflot kick-started full scale development.

A. Karachinskiy:

If this is not confidential, could you tell us how much it cost to develop the new aeroplane?

M. Pogosyan:

I think the total investment required from our side was approximately USD 1.5 billion. It goes without saying that we could not have made investments of this scale if we had not formed a long-term strategy to implement the programme. Nor would it have been possible if we had not coordinated the strategy with our suppliers and strategic partners. Only this enabled us to take these steps.

A. Karachinskiy:

I have heard that the aeroplane is partly made from composite materials. Is that right?

M. Pogosyan:

A large amount of the aircraft's structure is made from composite materials, but of course we did not go down the same path as Boeing with its 787 project. The key thing to bear in mind is that the benefits of composite materials are not as

great for regional planes as they are for long-haul aeroplanes. We therefore initially limited ourselves to just the wing mechanism. In total 10% of the structure consists of composite materials. In our future projects the wings will be fully composite. Whether we will use composite fuselages still has to be decided. At present I believe that we will still continue to use metal fuselages, but the proportion of composite materials, as well as the general development of this area, is one of the key issues we now face.

A. Karachinskiy:

If you compare these aeroplanes in terms of fuel efficiency, how does the Superjet 100 look in this regard?

M. Pogosyan:

From the point of view of fuel consumption, the Superjet 100 is about 10% more efficient than its competitors and we achieve this figure due to paying full attention to all the aircraft's characteristics, from the propulsion system to the aerodynamics and the weights. We believe that this advantage is sufficient, together with the superior comfort and increased safety levels, to ensure the competitiveness of the aeroplane for a long time to come.

A. Karachinskiy:

Who designed the aeroplane?

M. Pogosyan:

It was designed by an international team. The team consisted of a thousand people. Initially, when we were developing a conceptual framework, we worked very closely with Boeing, and its engineers played an active role in this work. At later stages our partners, who shared our risks – our suppliers – played a greater role. Alenia Aeronautica became involved in the project at quite an early

stage and, together with our engineers, performed much of the evaluative research. But most of the design work for the Sukhoi civilian aircraft was of course done by the Sukhoi Design Bureau. It was all performed by Russian engineers who had experience working at Sukhoi and had gained great experience from the collaborative programmes that Boeing conducts here with Russian engineers. So we brought together the vast resources that we had available at the time.

A. Karachinskiy:

So Sukhoi is today capable of designing new modern aircraft?

M. Pogosyan:

Yes I do now consider Sukhoi to be a company that can call upon large resources for the design of new modern aircraft in both the military and civil sectors.

A. Karachinskiy:

But nowadays no aircraft, especially civilian aeroplanes, can be built by one company alone.

M. Pogosyan:

I am firmly convinced that today this issue cannot be resolved. Unless you develop strong cooperation, there will be considerable delays to the schedule and ultimately, I think, the project will be a failure. I am a proponent of the view that modern projects should bring together a large number of resources.

A. Karachinskiy:

How many aircraft do you need to produce in order to enter into profit?

M. Pogosyan:

In my view we would like to produce 60 or perhaps 100 aeroplanes, but, based on the experience of Boeing and Airbus, I think that we need to produce 250-300 aircraft to achieve maximum impact, although this will only be possible when we have a series of aircraft. Of course we cannot achieve this straight away. We should therefore try to increase the production volumes relatively quickly. But it should still be a gradual process.

A. Karachinskiy:

What is now the most crucial thing? Sales? Which is more important: sales or production?

M. Pogosyan:

For an aircraft no one thing is more crucial than any other: production is important, as are post-sales service and the funding mechanisms that should ensure production distribution and constant product development, i.e. the development of a series of aeroplanes. For aeroplanes are successful when they are part of a series and undergo constant development. I am absolutely convinced that there is no such thing as a successful licensed production programme in the aviation industry: they can be partially successful, but only to a limited extent. What I mean is that to be successful in the aviation industry, you must work on the documentation and continually develop your product.

A. Karachinskiy:

Is it a good idea to have lots of offices working on the design of the aircraft? Or is it better to have a single, high-capacity office?

M. Pogosyan:

Nowadays, to compete on the international market, our resources need to be integrated. I would not go as far as saying that there should be one design department or two, but I think that resources should be integrated not just within Russia, but also with our international partners. This is something that is currently under consideration and discussion.

A. Karachinskiy:

We have our first success in regional and civil aviation. What will we do next in the civil aviation industry?

M. Pogosyan:

In my opinion, we should first now develop a series of regional aeroplanes of varying dimensions, for example planes with 75-115 business class seats, based on the Sukhoi Superjet 100. Following this... we are currently considering developing the MS-21 series, intended to have a seating capacity of between 120 and 200. In order to be successful in the market we need to explore this avenue. Of course we come into competition with the leading market players, who are also seeking certain positions in the sector, for example Bombardier and its projects. Embraer is mulling this over, and China is implementing its C919 programme, so today's market is generally very crowded. I would nevertheless say that the experience we gained with the Superjet is a good foundation for our plans, together with those of our partners, to come successfully to fruition.

A. Karachinskiy:

What are your thoughts on China?

M. Pogosyan:

I think that China is undergoing rapid development and is providing considerable funds for investment programmes. But for me they still have a long way to go to gain the necessary level of experience. We have worked extensively with China in the context of the licensed production of the Su-27 and we can see how difficult it is for people to go to the next level. I therefore wish every success to China's aviation workers. I believe that time and experience are equally important factors as investment, human resources, and technical upgrades and so, given this, my view is that China still has quite a way to go.

A. Karachinskiy:

Do you remember that there used to be column in *Literaturnaya Gazeta* called, "If I were the manager..." If you had unlimited resources at your disposal today and could pursue any opportunity, simply having to assign objectives for one aircraft after another, what would have to be done now, in the next 5-10-15 years, to compete successfully on the international market?

M. Pogosyan:

I have always found it slightly tough to imagine having unlimited resources or a magic wand. I think that we need to move towards achieving the goals that we are currently targeting and that we have to develop an aircraft series. If I were to do business in the aviation industry, then I would do exactly what we are doing now. The only thing is that if I had more resources, I would be doing it faster. To be a success in the market, you must have three series of aeroplanes: one for military aviation, which we have and know how to develop, a second for air cargo, the prerequisites for which we have and need to explore, and a third for civil aviation. In addition you need to offer a level of service that corresponds to the demands of the international market. These are the four areas that need to be developed successfully. To expand them you need to have a high level of

quality and a large capacity for innovation to enable you to make real progress and to outstrip competitors in terms of the technical standards of your projects.

A. Karachinskiy:

What needs to be done for us to have this potential and for us to support and nurture it?

M. Pogosyan:

We need to set ourselves objectives. I should add that we need to believe that we are capable of being market leaders, because if you do not believe in what you are doing, you will never be successful.

A. Karachinskiy:

We are all believers in what you have achieved.

M. Pogosyan:

Even if everyone else believes, it is still necessary to have the complete faith of Alexei Kudrin, although, by and large, he is a believer. You need Herman Gref, who gave me his support, providing positive feedback to Elvira Nabiullina, so that she also understands and has confidence in the project. I think that Viktor Khristenko and Denis Manturov, Ministers of Industry and Trade, are also largely supportive. Besides this, you need leaders and individuals who are capable of meeting these challenges. Thus, I see there to be three factors.

A. Karachinskiy:

Let's talk a little bit about people. You now have a team that designed this aircraft. Will you need more people to design the next one? Who are you still lacking?

M. Pogosyan:

I would say that, first and foremost, we do not have enough people who are capable of bringing together complex aircraft systems. When we discuss China's aviation industry, I think that the main problem today is not purely one of manpower or aeronautical engineers. The main thing that we currently lack is individuals who are bring together complex aircraft systems. Such people therefore appear and develop their skills on programmes such as those for the Superjet and the fifth generation Jet Fighter. I do not have enough experienced engineers in order to make rapid progress. But such people cannot be trained at university; they need to pursue a particular career path.

Secondly, I do not have enough qualified staff. People perform simple, clearly-understood tasks well through repetition. Speaking, for example, of modifications to combat aircraft, I can say that I do not have a large number of issues, as people have already fine-tuned the collaborative structure and are successfully meeting the challenges. But when you have people before you, and are in the process of modernizing complex aircraft systems, you effectively set the task of creating a fifth generation Jet Fighter or, even more so, of diversifying into the civil aviation sector, then many of them are unable to work as effectively. Other people's experience is therefore required so that they can adapt to new challenges. This can only be acquired through practice and concrete experience. There is no such thing as a miracle.

A. Karachinskiy:

Can we move on to military aviation?

M. Pogosyan:

I was planning on saying just a few more words before concluding and showing a short film about what I have discussed. The key thing is that it is not only

passengers who like our aeroplanes, but also the pilots who are already flying them today.

I can probably quickly sum up concerning the Superjet. Of course, when we began this project, many people claimed we had gone mad. I was personally accused of simply violating established practices. Yet there was nothing crazy in what we were doing. We had simply reviewed the market and understood that by the end of the 20th Century, the pattern of aircraft sales had changed. In the 60s, 75% of the market consisted of military aviation, with civil aviation holding just a 25% market share, but at the start of the 21st Century the state of play has changed dramatically. Civilian aircraft production now represents 75-80% of total aviation production. In addition, the balance of technology has changed. Technology was previously transferred from military to civil aviation, but now a lot of technology moves in the opposite direction, from the civilian sector to the military aviation industry. We had a simple choice: either we were to remember the past achievements of Soviet aviation and limit ourselves to success in military aviation, which would not last forever, or we were to turn to face the market and begin to respond to its demands, in the knowledge that, following the end of the Cold War, we now had to compete on the international market. We decided that, despite the important role played by military projects, the second option made far more sense for us and so we took on board a whole range of principles that had not been adopted until then. For example the fact that, by the dawn of the 21st Century, we had fallen behind the leaders in civil aviation by 20-30 years; that the end of the Cold War and globalization had led to the appearance of new competitors, who were gathering strength on the international civil aviation market, such as Brazil, China and, in other areas, India. As a result of globalization, technology ceased to be purely a national interest, and so we were able to make use of the best designs from abroad in our projects. Many people have criticized me, claiming that I am not a true patriot and that my aircraft are not truly Russian. We cannot produce a purely

Russian aircraft, as we need to make aeroplanes for the international market, and so have to adopt the best ideas currently being suggested by our suppliers. Today we are even competing with world leaders on the domestic market. Nowadays 60% of the fleet of aeroplanes owned by Russian airlines is developed abroad and so, if I want to be competitive, if we want to be competitive, we must meet the modern requirements. Technical advancements and the complexity of modern aircraft are leading to a significant increase in project costs, which also impacts upon our programmes. The domestic market is not enough to cover the large costs that we have to incur and, on the one hand, we have to attract partners and, on the other, we have to remain competitive in the international market.

But if you grasp this, these are all temporary obstacles. All the same, I believe that Russia has maintained its powerful engineering capacity, an opinion that is shared by the Boeing and Airbus engineering centres, which were set up in Russia and rank among the most effective centres established by global aviation leaders. This is backed up by the strong production base that we have preserved. I consider it crucial that we still possess an academic school for the aviation industry, consisting of sectoral research institutes and centres conducting fundamental research. As I have already mentioned, I think there are three factors that enabled us to make progress. They are: confidence in our approach, our leadership, who were prepared to take on the challenges that others thought impossible, and thirdly, our personnel. We are like-minded people who are able to learn quickly and turn the experience we gain into concrete action.

A. Karachinskiy:

Allow me to ask a question about business: you will now need to sell the aeroplanes, and for that you need to build a strong sales organization. We know the organizational structure Boeing and Airbus have in Russia. We do not know

what they are like in other countries, but they are very effective and aggressive, as what can Sergei Kravchenko (President of Boeing Russia/CIS) do alone? How will you be able to achieve this?

M. Pogosyan:

Firstly, we have established Superjet International, a joint venture with our Italian partners, with the goal of promoting production in Western markets, in Europe and the United States of America. Secondly, we have quite a strong position in South East Asia markets, where we are expanding and not only supplying military aeroplanes, but also actively working with our customers to supply cargo and civilian aircraft. It is therefore essential that we develop a system to increase production, but one of the crucial factors is the financial packages that we have to grant and the funding we have to extend to our clients. Such a decision was recently taken in setting up export credit based on the Vnesheconombank mechanism. This is also the result of our joint venture. If you look at SACE and COFACE and the American export credit agencies, they generally fund aviation engineering. This is the lion's share of the financing provided by these institutions. But of course, the most important factor is the formation of a structure for after-sales customer service, so that the client is confident that they will receive enough support. We are making progress in this area.

A. Karachinskiy:

So we now have all the necessary elements for the successful sale of aeroplanes?

M. Pogosyan:

We are developing them. To add the finishing touches to them, we need to supply hundreds of aircraft and then we will have made headway. Over the course of the decade we have worked on the Superjet project we have not only

succeeded in developing aeroplanes, but have also built a new system for aeroplane construction. I believe that in ten years we have created a product that is innovative, with the majority of its innovations capable of being used not just within the project, but also in future programmes.

We would now like to show a short film that shows the large scope of work that was conducted in order to carry out this project. We have fully converted the design centres and plants to modern digital methods of aviation design and production. We completely reequipped the factories in Komsomolsk and Novosibirsk.

We have completely and utterly remodelled our approach as a result of the switch to digital design and production methods, which has allowed us to make simultaneous active use of sites located thousands of kilometres apart. We have switched to an absolutely new programme control and have conducted technical upgrades at the factories, attracting numerous companies to the process of aeroplane construction. For example, the side-stick controller that we finally opted for is the result of our work with the airlines Air France and Aeroflot. In conjunction with them we tried to develop the specifications that the end product now exhibits. I have to say that this generated a suitable response from the airlines. Even at the stage when we had not yet begun designing the aircraft, we were already starting to form our basic approach to creating a system for after-sales customer service. There, together with our Italian partners and our suppliers, and with the participation of Boeing, especially in the early stages, we formulated the approaches that are currently accepted by our customers. Today at the Forum we have spoken of the need to attract investment to Russia. As part of this programme we have developed a strategic partnership with Alenia Aeronautica. These innovations today allow us to see a product that has resulted from extensive work and now, as has already been said, we at the United Aircraft Corporation should start to make further progress on the back of this experience.

I would now like to move on to military aircraft. At the same time as the Sukhoi Superjet 100 project, we have also conducted a vast amount of work to develop a promising fifth generation Jet Fighter. As I already mentioned, we never lost our position as one of the world leaders in this sector, thanks to our Russian aeroplanes, developed by Sukhoi, perhaps with some nuances from MiG. They are recognized as global industry leaders. Crucially, we maintained our status in the 1990s thanks to large-scale export shipments and licensed production programmes for our aircraft. This today enables us to state with confidence that we hold a market share of over 12% in the military aviation sector and the experience we have kept and accumulated, relating both to engineering and production, allows us to make rapid progress.

Here are some snapshots from the first flights made by the fifth generation fighter jet during high-speed runs conducted in Komsomolsk-on-Amur. The test programme is already in full flow. The aircraft assembly is completely finalized. To continue to rank amongst the world leaders in the military aviation sector, we need to create new platforms that not only anticipate the development of military aircraft, but also dictate the technological level of industrial development for the next 25-30 years. This will determine both our technological prowess and that of the large team that is working with us. The fifth generation Jet Fighter currently provides an improved level of operational effectiveness, more advanced than any enhancements made to fourth generation planes. The burden placed on the pilot is reduced, giving him the opportunity to focus his attention and efforts on dealing with the crucial tasks facing him. The aeroplane comes with the ability to exchange data in real time with other aeroplanes in the group and with ground control centres. The customer's aircraft fleet can be optimized via the multipurpose use of the aeroplanes. It provides an improved platform by applying composite materials and new technical solutions. We have ultimately set ourselves the goal of making our clients the most effective proposal based on cost-effectiveness. Realistically, only two countries, Russia and the USA,

possess the technology to construct fifth generation fighter jets. We know that there is another programme in China but I think that this is most likely for show, and is not a true indication of the state of Chinese aviation. I believe that the extensive experience of international cooperation, developed in the Superjet 100 project, was first put to use in military programmes. Supplying the aircraft to India forced us to work closely with our European partners, principally with regard to equipment. Here we are also geared for international collaboration. On the one hand, in terms of the consolidation of resources to implement the programmes, and on the other, we know that the scale of cooperation determines the subsequent sales market. It is impossible to increase production in other markets if you cannot attract partners to your work. For us, the fifth generation fighter jet, like the Superjet, whether it be a technological, production or engineering project, is a business matter and we are confident that this product will dictate not simply the future of our air force, but also that of the export of our hardware, as well as determining the level of technological development in the aviation industry for years to come. We estimate the market for this product at over 500 aircraft and, following discussions on marketing strategy, we agreed to work alongside India. Generally speaking I would say that we have come a long way in developing uniform specifications for the aircraft and in agreeing upon the distribution of work flows. In my view India, which is an equal partner in this venture, having come on board slightly later, will also reach a higher level of quality and so will be able to reach a new technological level to fulfil the requirements of the Indian Air Force.

Another major collaborative project with India, in the cargo sector, is the development of a multipurpose cargo plane, which should come to market in 2016. I am confident that, by bringing all these elements together, we will be able to form long-term partnerships with India and other partners in the aviation industry. Returning to the strategy of the United Aircraft Corporation and the military aviation sector, we are making steady progress and know what we want

to achieve. With respect to civil aviation, we have our core product, the Sukhoi Superjet 100, which has taken its first steps, leaving us on the path to full-scale integration into international aviation and attracting our strategic partners to the execution of this programme. Today we practically have to start the air cargo sector again from scratch, as there has been no mass production for the last 10-15 years. I believe that everything is in place, provided we were to combine our efforts with those of our partners, so that, if we were to return to the Forum in 10 years' time, we would be able to say that we occupy a strong position among global aviation leaders, with a balanced presence across the market sectors of civil and military aviation. To achieve this, we would like to have a 10% global market share in civil aviation by the year 2025. To do so we need to build a series of aircraft. We want to hold no less than 15% of the market for military aviation and cargo planes. Achieving these goals is a key element of United Aircraft Corporation's strategy. Of course we must change the appearance of our industry. We need to move from the dominance of military production to that of civilian production. We must ensure a balance and reduce business risk via the diversification of our corporation into different sectors, working on the unique advantages that we wish to develop on the production line, and in the development of basic innovation, which we are formulating in the context of the Innovative Development of the Aviation Complex programme. This currently consists of over 450 projects covering a wide range of uses and constructions from composite materials and open architecture on-board equipment, which can be updated quickly and efficiently during the aeroplane's working life. They also deal with the integration of engine units into the control system of the aircraft, not just to generate engine thrust, but for the development of other areas of operation. Through improvements to technology and technological processes, by means of the creation of manufacturing capacity and inter-programme competence centres, we want to alter the face of the industry so that every

factory is a complete production line. That is impossible in the current conditions. We want to develop competence centres for specific programmes.

I of course continue to set great store by project management and consider the formation of a modern system of management, with strict controls on key activities, to be one of the most important prerequisites for success. I think that the scale of this programme creates a good basis for the development of international cooperation and long-term international alliances.

We are currently considering how to organize long-term relationships with our Ukrainian colleagues and Italian partners, with India and a large number of France-based companies, which form part of our collaborative effort. The crucial element of this strategy is of course our personnel policy, because with the potential that we have we should be inspiring a lot of young people, who are as yet not totally convinced of the bright future for the Russian aviation industry. We must captivate people with our engineering work on modern, high-performance products and create a situation where a large number of people are as keen as we are to reach these goals.

We have broken down achieving this target into several stages, the first of which is the establishment of a platform for growth, with which we must stabilize and effectively structure the programmes that are not helping us move forward. The second step is the springboard of innovation, so here we need to build up. Here are the figures that we need to achieve in the first stage: earnings must be USD 16 billion and we must produce over 400 aircraft, approximately 25-30% of which have to be civilian models. The second stage, which will commence in 2014 (we envisage it taking five years), is our so-called 'innovation springboard' and we must reach a new level of cumulative figures. Earnings must grow to USD 60 billion and we will need to produce over 130 aeroplanes. The third stage is that of steady growth, during which we must firm up our position as a global aviation centre, together with Europe and America, and attain a superior level of

production. I think that we know what we want to achieve and how we plan to reach this point.

I would also like to say that we believe that the aerospace industry can be the driving force for many other branches of industry. There are probably only four industries that can determine the growth of numerous other related industries: aerospace, IT, electronics and communications equipment, and pharmaceuticals. It is essential that the evolution of aviation technology has a multiplicative effect, and that these innovations can be used in more than 20 other industries. The growth of the aviation industry plays a substantial role in determining the technical level of development of a country and, in my opinion, it is an important factor in social development, because the companies who themselves participate in assembling the aircraft are located in about 10 regions and the many suppliers are obviously distributed across the entire country. I think that the expansion of the aviation industry can become one of the key factors in the transformation of Russia from a purely commodities-based economy, to technological development. I have confidence in this. In my view we have all the prerequisites for success. Today our civilian aircraft, which are only just entering production, are steadily appearing on the international market. In January 2011 we signed a contract, as part of Superjet International, with Interjet.

Just as Interjet is confident of the success of our project, I also believe that everything will turn out well. I think that we have all the component parts to be extremely successful. I do not know what you think, but I have faith in this.

A. Karachinskiy:

We believe in it too. It's now time for some questions. If anyone has a question for Mikhail, please raise your hand. Microphones are available. There are no questions. Everything was clear. I would like to say that we as a country need real heroes – people who have been successful, not by investing or spending

money, but by achieving concrete results. Mikhail is the first person to reveal to us the sequential development of a successful company. I really want us to have heroes who have achieved remarkable things and fly better than others and, thanks to whom, in 15 years, we may have an extremely profitable company. Perhaps by that point it will not be fully state owned and will be a public company. We may all have the opportunity to buy shares in the company and work together with as much success as Mikhail will have. Thank you very much. We are certain that we have a bright future ahead of us. Thank you.