

Reforming Innovation System in Russia: Overview of recent new initiatives

Introduction

The organized entrepreneurial finance has only began taking shape in Russia, and its founders and first movers still search for the models of risk capital to be introduced in high tech corporate management. Many questions remain to be answered. For example, what business models of VC fit most the current environment? Whether the VC industry requires specific regulation to improve the climate for venture investing? How far should the government go in sponsoring the formation of new venture capital firms? What selection criteria should be introduced for the ventures allowed to borrow from the government at below-market interest rates or get other rents? What set of tool should be given at the disposal of technologies-oriented ventures without distorting the rest of the market? Who will be the main target groups to stimulate the market – oligarchs, wealthy individuals, institutional investors? How banks, insurance companies and private banks should be motivated to enter the venture business and promote knowledge based economic growth?

In this paper we address two approaches to VC – institutional public funding schemes initiated from above (megaprojects) and private ventures which grew “from below” (Innovation Consortium). In spite of controversies and risks involved, there is reason to believe that these two approaches are designed better than others and might actually work. We do not discuss portfolio-company equity investments, which currently dominate in the Russian venture business and get focused only at the initiatives, which foresee strong technology component.

The paper benefited from the analysis of the most recent literature on the Russian VC, government policy documents and interviews with the insiders of the VC industry and both ventures surveyed in this study.

1. Current trends at the Russian VC market

One of the first movers at the emerging Russian VC market was the European Bank of Reconstruction and Development (EBRD), which in the year of 1994 promoted establishment of 11 regional VC funds worth of US 310 million and accumulated another US 200 million as technical assistance from donor partners. Some US 200 million were invested in several dozens of companies. However, we are unable to show the share of technology-intensive ventures among these pioneers of venture companies, which remain relatively non-transparent. This movement was followed by number of other institutions, initiated by foreign governmental and private investors, Russian technological fund being one of the largest in the technological branch of the venture business.

In spite of the very short time the history of the venture business in Russia already underwent its ups and downs from enthusiastic approaches of the early 1990s, when it was expected that market liberalization would remove bureaucratic barriers of the previous innovation system and promote technologies’ commercialization, accumulated in the huge R&D and defense sectors to the deep frustration of the late 1990s. The financial crisis as of 1998 was very discouraging for the VCs: technology-driven venture companies quitted the market, Mint Capital and Russian Technological fund being among

few survivors¹. Gulkin, 2002, noted that ups and downs of the Russian VC are influenced by skeptical approaches (there is no capital ready to back innovations because the capital market has not yet emerged) and too large hopes put on the transnational companies (with the danger that they would obtain the gems of Russian technologies for a song).

Difficulties, however, arose not only from the unfriendly environment. Strains existed within the venture community itself. Thus, investors were discouraged by the low credibility of venture business as a source of high returns. As Fursenko, 2002, noted, investors do not trust Russian technologies and if they already have working business, they are too preoccupied with the shocks of the current market to meet the technological risks. Therefore they prefer to buy the ready technological product in the West and to avoid the headache of technological risks.

Moreover, many managers/owners of companies found it hard to realize that they have to surrender part of control in favor of equity investors to be able to attract capital for development and expansion. Time and immaturity also matters: most applicants do not have any track record, while investors almost always want to work in familiar technological fields and with recommended partners. Many SMEs are simply unable to handle large amounts of investment: some companies rejected on several occasions an investment proposal due to their inability to comply with management standards. Other constraints include lack of the liquid security pledges, managerial skills scarcity, lack of professional marketing specialists to estimate the future market potential for their technologies.

The estimation of the VC market figures in Russia vary significantly. Thus, the government estimates that the venture industry has managed to raise and invest only US\$ 250 million (Ministry of industry, science and technologies, 2003). Vlasov, 2002 gives much higher figures: his estimation is that 40 companies, which control venture capital, have been active in Russia. Their total capitalization accounts for 2.5-3 billion US dollars, and they have total responsibility for 500 million dollars, including 350 million that have been invested (Vlasov, 2002). Yegorov and Belkina, 2002, think that venture funds managed in the year of 2001 a cumulative \$350-450 million, while their capacities totaled US \$4-5 billion (the last figure is an estimation of the magazine *Rinok tsennikh bumag* for the year of 2001). The gaps in figures have two reasons: low transparency of technological VCs and disagreement about the content of VC business. Thus, in Russia technological early stage investment and private equity investment are mixed, causing confusion with the data and understanding of VC market.

Yegorov, Belkina, 2002 noted the specificity of the current VC market in Russia:

- only a few private funds which invest in Russia undertake direct investment of VC type and instead engage in large private equity deals.
- little diversity of capital sources.
- wealthy individuals, whose resources are vital for VC industry, often remain managers of their companies and thus often unwilling to diversify risk.
- EBRD is the biggest investor in the Russian VC industry to date.

Other sources show alarming trend of the declining number of new start ups in the knowledge-based economic sectors. Thus, Ammosov, 2002 pointed out that the Third Venture Fair hosted predominantly mature venture companies of 7-9 years old, while the

¹ The last, comprised of a number of US and EU investors, back early-stage start ups with the employment between 15 and 20 people, which are still making loss or showed the first signs of recovery (Vlasov, 2003)

number of neophytes of 2-3 years age has dramatically diminished. Only 4 percent of SME are engaged in R&D, and 18.4 percent – in industrial sectors, which have relatively high value added (data of the State Committee of support to development and entrepreneurship).

2.State policy

The Russian government first began to promote venture capital in 1999. It adopted in the end of 1999 the Main Priorities of Venture Investment Development program for 2000-2005. The program focused on regulative and legal issues and support to the infrastructure of VC, as well as measures to push private domestic and foreign business to take risk of entrepreneurial finance.

One question might be why the government turned to VC problem after years of neglecting the industrial policy matters. First, the government responded to the objective situation: few other methods are currently available to launch the high tech sector, avoid great losses and keep the system going. The new policy line is driven by the desire to speed the development and commercialization of advanced technologies, effected by the fear about Russia becoming increasingly an oil and gas exporting country short of internal technological resources to support the knowledge-based economic growth.

There was another, more immediate reason to turn to VC. It grew from the traditional innovation system, which refused to function well. Arzamastsev, 2003 showed that the assessment of state funding of Government Research centers of Excellence produced amazingly low productivity (“zero result” in the words of the deputy minister, in spite of sometimes solid funding (up to \$50 million). The government could not afford to disregard this finding and looked for alternative approaches to the budget allocation.

And at last, state intrusion into VC met significant expectations of the business community, especially in part of shared early-seed stage risks associated with the new technologies’ commercialization. The venture entrepreneurs could not afford to run all technological and commercial risks in the situations of high macroeconomic uncertainty.

The role of accelerator and provider of a signal to the research and business community should also be taken into account. Vladimir Burenkov, (Eagle Venture Partner) addressing the problem of state support to VC said that state involvement would be a positive signal to investors, both Russian and foreign. While Deputy industry minister Nikolai Arzamastsev, 2003 considers that VC can live without the state intrusion, though the last has chance to speed up the process.

This policy, however, is not costless and raises concerns about possible negative externalities of regulated VC industry: change of the aim does not necessarily lead to the change in the methods. The government did not find the satisfactory answer to the question of who should be addressed with the rents. As Fursenko, 2003a pointed out, the government has not yet decided whether it should “secure promotion of the definite business pattern or definite sector, design priorities or treat everybody equally”. Given the previously installed patterns of behavior, the risk exists that venture industry will be effected by traditional distributional logic, arbitrary decisions and corruption. Another concern is control over public-private ventures, in which the government may want to consolidate excessive decision-making.

These fears have influenced the adoption of the specific legislation targeted to venture industry regulation.

The Russian Venture Capital Association identified legal obstacles to venture investing in Russia. They include:

- Excessive bureaucracy, non-transparent, confusing regulation allowing arbitrary decision-making. Registration or approvals of such authorities as the State Registration Chamber, Antimonopoly Committee, Central Bank and Federal Securities Commission are required on all stages of the investment process.
- Inadequacy of corporate law and civil code. For instance, shareholder agreements, which are often needed by VC funds during investment process, are not legally binding, nor guarantee control rights to minority investors. Furthermore, there is no provision for convertible bonds in the civil code, making it difficult to register convertible bond issues

However, initiators of VC industry in Russia decided against specific law in spite of the evident gaps in the legal environment of VCs in view numerous danger point associated with the state regulation. Fursenko, 2003 b said that strong lobby made several attempts to draft and enact through the State Duma this VC specific legislation and it took a lot of efforts to prevent this law being adopted. Fighting the unneeded bureaucracy and gradual adjustment of the existing legislation was the answer to the legal problems. For instance, to address the problem of excessive bureaucracy, the government has initiated the launch of the web site “Liniya reform”, which accumulates information about bureaucratic barriers, which create significant market distortions. The group of government specialists have been organized to analyze regularly the facts reflected at the site to design SMEs and VCs friendly responses to the bureaucracy problem (Danilov-Danielian, 2003)

On the other hand, one of the healthiest consequences of the growth in public attention to the VC has been the increase in scrutiny that the government venture policy have come under. Feedback and suggestions are helping to increase the human skill involved in regulation of the new industry and learn the best and worst case lessons. Regional VC funds, sponsored by EBRD, and some private VC funds, which operate in Russia, are members of the Russian Venture Capital Association², which developed into the open panel for the public-private cooperation in VC industry.

The first practical step in line with the new policy design was launching of the Venture Capital Innovation Fund (VIF), which was targeted at the development of VC infrastructure in the regions. The government allocated RUB200 million (\$6 million) in the VIF and initiated tenders to select the external managing companies for the regional venture funds (15-20 as a goal).

In an effort to spur further the development of high-tech industries, the Russian government issued the draft State VC concept (Ministry of industry, science and technologies, 2002). Its core elements include:

- Creation of State Technology transfer agencies within the research organizations. As of May 2003, six Technology transfer agencies have been under creation.
- Creation of ten state-private venture funds. VIF will be completed by regional and sectoral venture funds. The state acts as co-investor with no more than 10% of cash of the newly established funds

² RAVI consists of several regional VC funds, supported by the EBRD and a number of private domestic and international VC funds which are active in Russia. Workshops and debates organized by RAVI formed a useful network and panel for public-private interaction in joint efforts to facilitate the VC industry

- Re-orientation of already existing R&D funding capacities to technological SME support
- Relaxation of tax regime for the small innovating companies
- Establishment of interdepartmental coordination council specifically targeted to VC support
- Re-investment of state revenue in VCs back to venture projects
- Involvement in building of the human capital, information and dissemination capacities. Centers of venture entrepreneurship are established in North-West and Transvolga federal districts which task is to train SMEs managers and Managerial companies of venture funds
- Firth fair as a communication space for networking competition of projects

3. Megaprojects: actions from above

Megaprojects is a program initiated by the government to demonstrate a pilot innovative approach to the public R&D financing and stimulate knowledge-based economy.

This program was based on an assumption that allocation of scarce development government funds across thousands of seekers showed limited practicality and did not promote innovations. Moreover, dozens of thousands of projects met the problems of transparency and control and put too high pressure to the Ministry's personnel; it was also hard to fight with corruption. As a result, the traditional approach to the project selection has been freezing the outdated structure and led to the dramatic decline of human skill (source – our interviews in the Ministry). Therefore in the year of 2000 it was proposed to test a pilot approach: consolidate resources and allocate them to the few selected large-scale projects in priority areas, and introduce vertical management and control mechanism of the projects' implementation. In a way, the policy was to duplicate the famous project teams of the 1940s and 1950s (projects of Kurchatov, Tupolev) in the new environment – thus unofficially they were termed “capitalist sharashki”. It should be noted, however, that this historic experience was practically the only one domestic case familiar to the modern initiators, from which they could build up.

The government decided to select several large (mega) projects, which were expected to demonstrate to the rest of the research community the different road to success and bring it closer to the needs of the market. However, immediate drastic shift of allocation principles within the total federal R&D budget was hardly realistic, and the decision was taken to experiment within the borders of public funds that were comprised only of annual increase to the federal R&D budget, leaving the rest to the traditional allocation to sectors, programs and institutes.

The competitive bidding and selection have been completed in May 2003, and by the time of writing (June 2003) the contracts have been concluded only with the two project teams (between technological partners, private partners, consulting companies and the state procurement agency).

Goals of *megaprojects* program included:

- Testing of a different from traditional pattern of public R&D financing. In 2001 the Russian government R&D policy underwent a significant change and shifted

from the idea of conservation of research capabilities to their support through launching of venture investments. The idea is to „back backing investors’ with the variety of instruments and state measures.

- *Megaprojects* as an instrument to select national champions basing on economic rather than technocratic criteria
- *Megaprojects* – as an instrument to demonstrate feasibility of public R&D efforts. Thus, Fursenko, 2002, noted that “if the selected *megaprojects* in 2-3 years would prove their efficiency and profitability, we will have grounds to apply to the State Duma and Finance ministry to increase dramatically the research budget. Because the R&D would show itself not only as a part of cultural heritage and image keeper, but also as a mean to get financial return quicker and better than in the raw materials sector”
- deliver a signal to the business community that venture investment in high-tech fields fits the basic state priorities
- deliver a signal to the research community that the government supports R&D projects aimed at transparent, feasible and economically profitable goals

Funding was provided jointly by the government (out of the growth margin of the federal R&D budget) and private partners of the projects. It is expected that the federal budget would allocate about US\$200 million (*Vedomosti*, 27 May 2002). Rough estimations show that the 2003 budget execution would allow to invest US\$150 million, if the annual R&D expenditures would be increased by 15 percent, as planned. The Ministry for industry, science and technologies expects these investment to return in two years back into the budget via increased tax payments (20 percent tax rate), and effect the GDP growth worth of US 1 billion. Even if these estimations look too optimistic, better accountability and transparency of *megaprojects* in comparison to the thousands traditional allocations distributed across all available institutes and labs, should bring positive results.

The main issues that has dominated debates within this program implementation was **selection criteria** and transparency and accountability of the projects – the politics of alternative choices was the core of the shift from wasteful principles of traditional allocations of public resources. In the end, the program initiators managed to insist on clear selection criteria and introduce an experts’ commission as a final decision-maker, which may be safely considered as an important breakthrough in the government policy: for the first time in the new Russian history independent experts took decision about allocation of almost US 150 million public funds with insignificant participation of government officials.

Figure 1. Megaprojects: procedures and selection criteria

Selection criteria	Procedures
<ul style="list-style-type: none"> • Winners should fit the list of eleven priority areas. • Within the priority area those projects have been selected which were expected to have the potential of breakthrough in the knowledge- 	<ul style="list-style-type: none"> • The projects have been selected and granted with unusually high investments – US\$ 10 million per project and consolidated in the hands of independently selected “champions”. Funds are limited by

<p>based economy and have high and quick financial return</p> <ul style="list-style-type: none"> • Public-private co-financing was also a must requirement to the winning projects • the expected trade turnover in the end of the project implementation phase should be 4-5 times higher than the initial public funding 	<p>the annual increase of public R&D budget</p> <ul style="list-style-type: none"> • given that the government could operate in this program exclusively with R&D funds, the projects were contracted as R&D, limiting them to early-stage innovations • the selection was carried out by the commission of independent experts comprised of researchers and businessmen with the limited participation of government officials • the government volunteered to help grant seekers with professional consulting capacities: winners were teamed with the consulting companies and other mediators, funded out of public resources, who were expected to “accompany” and control the project
--	--

In contrast to the traditional state subsidized R&D projects, the government introduced the success criteria, measured in the indicators of economic performance rather than technical and scientific results. To oversee the projects, the teams were organized, comprised not only of investors and technicians, but also of mediators, who will accompany the projects, guarantee accountability and certain managerial standards. It is also important to note that the participants of the competition for the projects have been motivated not only by the perspective to win and get funded, but also by the free PR and building of the networks with the other competitors and sponsoring partners who in principle can back their business in the future: “People thought that due to this competition they will get partners... We had very interesting projects in material sciences, when people while going through the procedure of competitive bidding, managed to present their projects properly and received investors, clients and strategic partners” (Fursenko, 2002)

Close look at the projects’ focus, teams of initiators and implementers and their interests and motivations (Figure 2) bring interesting and unexpected findings. First, sectoral focus of winners significantly differs both from government “strategic” priorities (transportation, space, communal reform), international fashion (Internet) and commercial domestic focus (servicing oil and gas industry). Analysis of applications showed high competitiveness and activity of biotechnologies and healthcare research, communications and electronics, which left transportation, energy and consumer products sciences far behind.

Among the winners only few came from the public sector (Prometey, academic Institute of crystallography, Central paper research institute and academic Institute of

catalysis), the rest are commercial companies. This is mostly explained by the fact that most of public institutions have difficulties to meet the criteria of co-financing with the commercial partners.

Part of the projects have strong large private partners, which represent either cash-rich parents or clients. For example, Zavolzhskiy motor plant – part of Severstal group – definitely has sufficient resources to make parallel investments without the state. However, the team of initiators was interested in the government support in broader issues – protection and support of the automobile industry and state procurement of tracks. LMZ was also initiated to participation by the state support in entry to the energy supply market rather than by cash. The other winner – Central paper research institute – provided guarantee letter from companies in the timber industry, which syndicated financial backing of the project – thus the project is sponsored by the consumers of the technology to be developed. In several cases private co-financing was provided by the technological initiator itself out of profit in other cash-cow projects. Banks and other financial institutions have not been represented in the group of private co-partners..

Another finding is that the state initiative within the *megaprojects* program had positive side effects: thus it helped to reconcile interests of competing and duplicating each other designs, and find complementary assets among domestic bidders to the projects rather than abroad. For example, two technological companies NPO Saturn and Rybinskiye motori, which have been fighting with each other for ages, have offered competing technologies of energy equipment (LMZ project). However, both bidders lacked technologies and resources to design a new generation of their core product. Joint bidding solved significant problem of complementarity and initiated cooperation not only with the state, but among the former commercial and technological enemies.

The main result by the time of writing was that the government managed to resist pressure from the traditional beneficiaries of R&D budget and not to waste the budget resources at least within the borders of the annual increase.

Altogether about 500 proposals have been submitted by the private companies, state enterprises and research institutes. Among them only 24 were more or less “negotiable” and met basic selection criteria. These 24 final priority fields were studied by the independent commission comprised of “oligarchs” with interests in engineering industry, research experts and people from the emerging VC industry. The commission selected 11 priorities and declared competitive bidding of implementers. The same commission formed procurement body to order the projects within the conventional practice of state procurement. Each of the pre-selected priority field attracted from 1 to 20 bidders

The selected projects have mid-term (4 years) duration, average budget grant accounted for US 10 million, the private business co-financed the projects in proportion 50:50. In the majority of winning cases the first movers and initiators have been represented by the private commercial partners. The projects are a rule at a later stage of innovation cycle, therefore the main risks are linked rather to the uncertainties of the market and inadequacy of project management than technological risks.

Less than half of the projects could offer adequate managerial teams, therefore the Ministry was to supply six projects with consulting partners (also selected through the competitive bidding). The Industry ministry pays for the consulting services out of extra-budget funds.

Problems and lessons learnt.

This is certainly too early to summarize projects' results, since they have been launched just in the time of writing. However, several problems and lessons for the future initiatives can be identified:

- dramatic shift of state R&D resources caused major resistance. As a result, the government could experiment in this program only with the limited budget – increase of the annual R&D funding
- the research and in general innovative community appeared to be not ready to respond to the government initiative and the commission of experts stressed the deficit of financable projects that met adopted criteria. As a result it could chose only second-best projects (among 500 applicants only 24 proposals more or less met the criteria). As the deputy minster Andrey Fursenko notes, “the venture investment in high technologies are not popular in Russia not because of the resource scarcity, but due to the scarcity of feasible cases” (*Vedomosti*, 27 May 2002).
- the initial idea was that the project should be aimed at the commercial market demand, both domestic and international. However, in the final documentation anonymous intruder put the “state importance” as a decisive selection criteria, thus changing the basic concept
- It was initially expected that winning projects should operate in the spheres of Russia's particular competence, where it holds strong internationally competitive position: energy-saving, technologies of communal economy, harmonization of transportation. It did not work, and selected projects do not correspond both to the industry's preferences and government's priorities
- The program lagged behind its initially planned national macroeconomic scope, and project funding is significantly less that other internationally known megaprojects got. Thus the program would hardly have macroeconomic effect and accelerate innovation economy, but rather have demonstrative effect within the limits of the experimental pilot activities
- Significant problem – regulation. All projects have been funded out of public R&D budget, which is subjected to specific regulation. Thus, the law says that all R&D results, achieved with the public funds, should belong to the state – this norm conflicts with the interests of the commercial partners who provided half of the funding. Another regulative problem is that high-tech venture projects call not only for the backing of risky technology development, but should include many other, unrelated to R&D activities, and there exist a formal prohibition to fund these other activities out of R&D budget. Even if the government would manage to exempt the 11 winners from this regulation, the megaprojects program would be difficult for dissemination
- Experimental nature of the undertaking also matters and caused mistakes. Thus the consulting companies to manage the six projects have been selected two months later than the winning projects, whose former managers already took disputable managerial decisions

Figure 2. Overview of megaprojects in mid 2003

Name and budget	First mover and initiator	Technological partner			Private co-financing partner		Government motivation	Current state of affairs
		Name	Motivations	Motivations	Source	Motivations		
Industrial fire-resistant and pack material RUB 400 mln (incl. 140 mln in 2003)	Owners of the technological partner – who started and matured the company	AO NPO Unikhimteck	Interest to shift to the new business scale with the new product; acceleration of the market entry; search for the state support in motivation of poorly managed academic institutes (research partners), which have complementary experimental capacities and R&D	Interest to shift to the new business scale with the new product; acceleration of the market entry; search for the state support in motivation of poorly managed academic institutes (research partners), which have complementary experimental capacities and R&D	Shared between consumers of the end product (large oil and gas companies, who credit R&D related to their specialization) and Unikhimtech out of profit	Backing end product's early market entry, have trust due to long-term relations with Unikhimteck	Promotion of high-tech development pattern, aimed at dynamic oil and gas sectors' consumption, as well as communal services. Support to MGU (Moscow State University) with contracts, jobs and expansion of the research capacities	Late stage (pilot samples, equipment). Need in adjustment to industrial mass production, manufacturing technologies
Development and launch of manufacturing of tools and equipment for nanotechnology . RUB 400 mln (120 mln in 2003)		ZAO "MDT-Nanotekhnologiya	In addition to cash – state support in human capital development, including organizational improvement in the basic higher school – MPhTI	Own profit, funds of business partners, including foreign turnover is export-oriented), who are ready to invest into the future supply	Own profit, funds of business partners, including foreign turnover is export-oriented), who are ready to invest into the future supply	Supply of most updated equipment	Support to the government priority high-tech field; improvement of environment for the next generation technologies; support to the government higher school	Late stage. Development of hardware on the foundation of already finished developments
Biotechnology and industrial production of seeds for genetically modified plants RUB 150 mln	Business partners teamed with the technology's developer.	FGUP "Center for bio engineering"	Cash and technology commercialization	Business partner – diversified trade and industrial group involved in agricultural manufacturing,	Business partner – diversified trade and industrial group involved in agricultural manufacturing,	Further diversification of the group	If successful, the technology would significantly promote agriculture	Late stage. Experiments completed – industrial applications to be developed

(80 mln in 2003)	Management of the developer	FGUP NPO "Orion"	A chance to overcome stagnation, improvement of position in the sector and industrial hierarchy	storage and supply in Moscow oblast	R&D partners – larger state enterprises, future users of elements to be developed within the project	Support of the supply chain and networking	Support to the dual-use technology, critical both for the military and commercial application. Technology commercialization would "save" it since the defense market is depressed	Early stage. Experimental results need strengthening and further industrial application
Matrix photoelectric modules for competitive infrared equipment Rub 300 mln (incl. 120 mln in 2003)								
Catalyzes and catalytic technologies for the new generation motor fuel RUB 500 mln, incl. 190 mln in 2003	Group of scientists	"Institute for catalyze named after Baressky" of the Syberian Duvision fo the Academy of Sciences	Further advancement of their core skills	Development partners – large private oil-processing enterprises. Long-term relations (technology partner accompanied technology update)	Strong technological expertise, including in unrelated to the project areas; co=ownership of IP, preferential treatment in technology commercialization	Introduction of domestic technologies in oil processing (import substitution)	Mid stage, technologies need to be improved and increase scale of utilization	
Development and industrial application of new technologies for cardboard manufacturing out of surplus fibre/ RUB 150 mln, incl. 60 mln in 2003	Director of the Institute and owners of industrial partners	FGUP Central Research paper Institute	Need cash for pilot production and adaptation	Future clients – consumers of the end product	Strong interest to the technology to be developed: the market is building up, while technologies are not available at the world market or have prohibitive prices	Introduction of domestic technologies to the timber industry, import substitution	Late stage, low technological risks	

Development and production of efficient steam-gas power stations above 200 megawatt RUB 450 mln, incl. 150 mln in 2003	OAO LMZ	OAO LMZ (Leningrad metal plant) (part of concern "Power machines", controlled by Potanin+Prokhorov Group Interros)	The technology initiator is not motivated by cash (their turnover exceed RUB 10 bln). The main interest – support of the government in supporting the links to the principle client – RAO EES and easing of the large market entry	NPO Saturn.	Interest in the government support in the electricity supply market entry and protection against foreign competitors Support to the foreign market entry with the new high tech product	Political goal – protection of the national manufacturers and designers at the strategic market of electricity generation, distribution and supply	Late stage
Development and industrial application of new metal material for construction RUB 200 mln, incl. 60 mln in 2003	Director of the research institute	FGUP "Prometej" (government research institute with the advanced experimental and manufacturing capacities)	Demonstrate its core skills and complementary assets to the industrial partners	Cooperation partners – enterprises from the metallurgic sector	Update of the product line, diversification	The government is interested in extra-budgetary support of the strategic enterprises, since its military procurement is too low to keep the institute on float. In addition, it is interested in attracting the domestic metallurgy enterprises to cooperation and building value chains with domestic rather than foreign technological partners	Mid stage.
Development of the industry for synthetic cristalls dialelectrics RUB 460 mln, incl. 110 mln in		GUP Institute for crystallography of the Russian Academy of	Besides cash – strengthening of the technological value chain, new business scale and new market with the cutting edge	Several business partners (consumers) from the upper parts of the value chain, both private and	Interest to updated technologies to prevent lagging behind competitors,	Political – support to the national technology at the growing market niche. Plus expects multiplication effect	Mid stage. Creation of equipment on the basis of already developed

2003	Development and adaptation to serial production of diesel auto engines RUB 500 mln, incl. 105 mln in 2003	Joint team of the plant's management and owners of the industrial group	Sciences	technology	mixed property	increasing scale economy, business expansion	(export)	technologies
			<p>OAO ZMZ (Zavolzhsly motor plant, part of Severtal industry group (Mordashev group))</p> <p>Low interest to cash (could have funded project out of parent's profit). Main motivation – state support in further stimulation of domestic automobile giants to buy Russian engines. Interest in state procurement of the final product (UAZ tracks for military use)</p>			<p>To prevent negative developments at the automobile market and return interest to the national designs of engines</p> <p>To deliver a signal that national automobile industry is not to be closed down and have perspectives with the new domestic technologies</p>		<p>Early stage.</p>
	Reform of the heat supply to the Russian regions: technologies, organization, financing	Management of the company and its business partners	OAO “Teprovaya investitsionnaya kompaniya”, Siktivkar (Heating investment company)	Interest to demonstrate capabilities and position itself at the early start of communal reform	Co-financing out of enterprise profit, plus investments from the business partners – construction and energy supply companies	Positioning at the emerging market of commercial communal services	Demonstrate support to the national companies in the new technologies for the communal reform	Late stage

Notes: ZAO – closed shareholding; OAO – limited shareholding; NPO – science and industry association; FGUP – Federal State Budgetary Enterprise; MPhTI – Moscow Physics and Techniques Institute; RAO EES – Russian United electrical lines;

4. Innovation Consortium – initiative from below

The second business model at the VC market is presented by the Venture investment fund, launched by a consortium of industry managers and system integrator and operator with the support and approval of the government. This case is mostly about slow maturing of the VC market and pilot entering of large industrial companies. This is also a brand new initiative, launched only in mid 2003. However, it was already followed by other industry-led initiatives (for example, by the Alpha group), and may be regarded as an important manifestation of changes.

Successful corporate giants today search for high-yielding investments, fearing that their traditional business would not perform as well as in the early 2000s, and the return of oil, natural gas and other primary materials assets will regress. Furthermore, many of them do not want to be left out of the possible gold rush, when even international corporate monsters are looking through business plans in search of entrepreneurs to back. The large-scale Russian business has been also waken up by the government signals and emerging VC industry and took decision to test opportunities of high tech business through entrepreneurial finance. Intensive PR of VC through the venture fairs, pressure from the government should also be taken into account.

Cherpakov Ponomarev, 2003 showed that Innovation Consortium is a provisional syndicate of private investors and managing company aimed at joint development of innovation business with the shared financial risks. The IC is involved in two basic activities: (1) venture projects' development initiated by outsider proposals and (2) venture projects' implementation by the members of the IC. The first activity is funded out of the IC's budget comprised of annual allocates of the members; the second – is project-specific. Though each member of the consortium took responsibility to invest at least US \$ 2 million annually for the joint venture investment fund. However, the venture projects of the consortium may be invested both by one or several members.

The managing company takes responsibility for the accountability of the project, carry out operational and personnel management, sign contracts, takes responsibility for the GR work and in general for the creation of the favorable climate around the project. In the end the team decides if the new business venture should be put under control of one or several members or they should exit it. Funding is provided through the deal syndication principles. However, the industry partners of the consortium tend to keep full control over the financial flows and to back technologies and companies they know well, regardless of the stage. As a result, for example, biotechnologies – the least known field for our heroes – have been excluded from the list of proposals in spite of the high quality of the projects, late stage, their “fashion” and high prospect at the international market.

On the other hand, they are already willing to outsource control over the technicalities and operational management and coordinate outsider partners through the professional management team. This outsider mediator also supports the links to the government, which is viewed by the members as a risk-lowering and efficiency measure. The government may participate as a co-financing party, or get interested in other project externalities (security, social). The outsider management company plays a role of the system integrator and harmonize public and private interests in the projects.

Thus, essentially, the consortium is based on the three company structure: fund company that deploy the funds, VC management and consulting company that make investment and control decision and start up or technological company which is supposed to finish R&D and enter into commercializing stage.

What refers to project selection criteria, the partners agreed on the following:

1. The team should be willing to cooperate, especially with respect to contributing the intellectual property to the initial capital of the project;
2. Priority is given to the projects with the shared public funding, mid- or later-stage technological cycle and undergo professional technical and economic expertise
3. The project should fit the investor's strategic interests, be in line with his main business priorities and simply be liked by the investor

Figure 3.

Innovation Consortium: System Integration

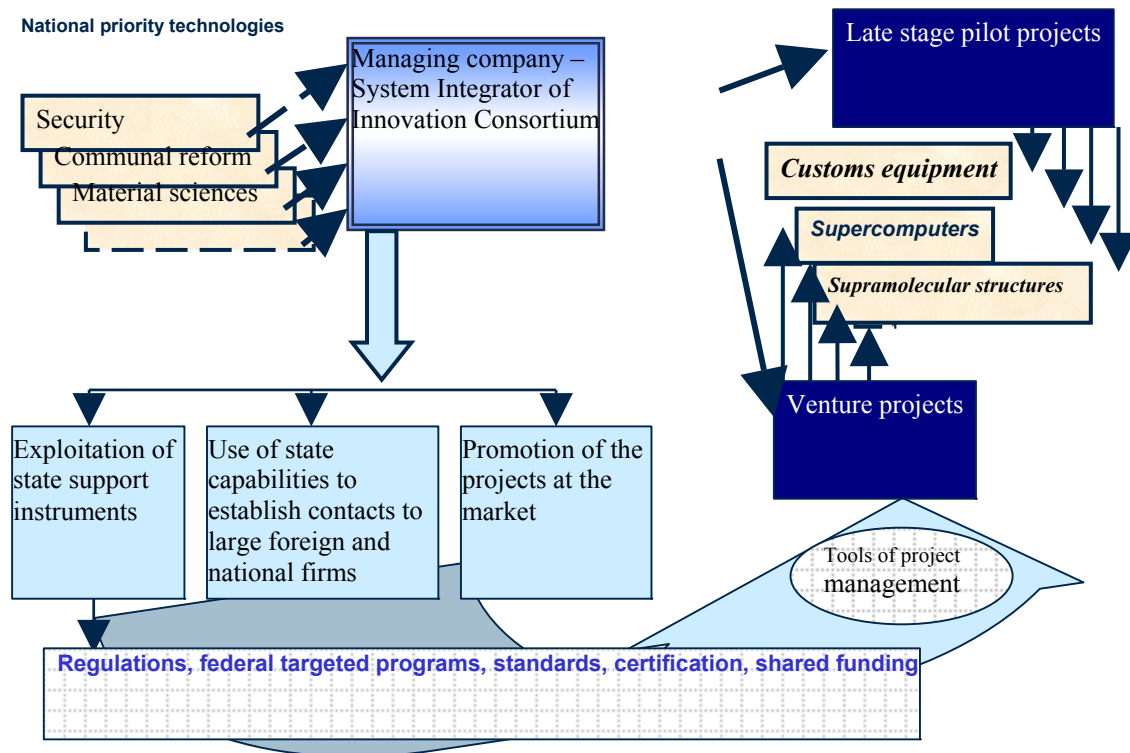


Figure 4. Organizational Chart of Innovation Consortium

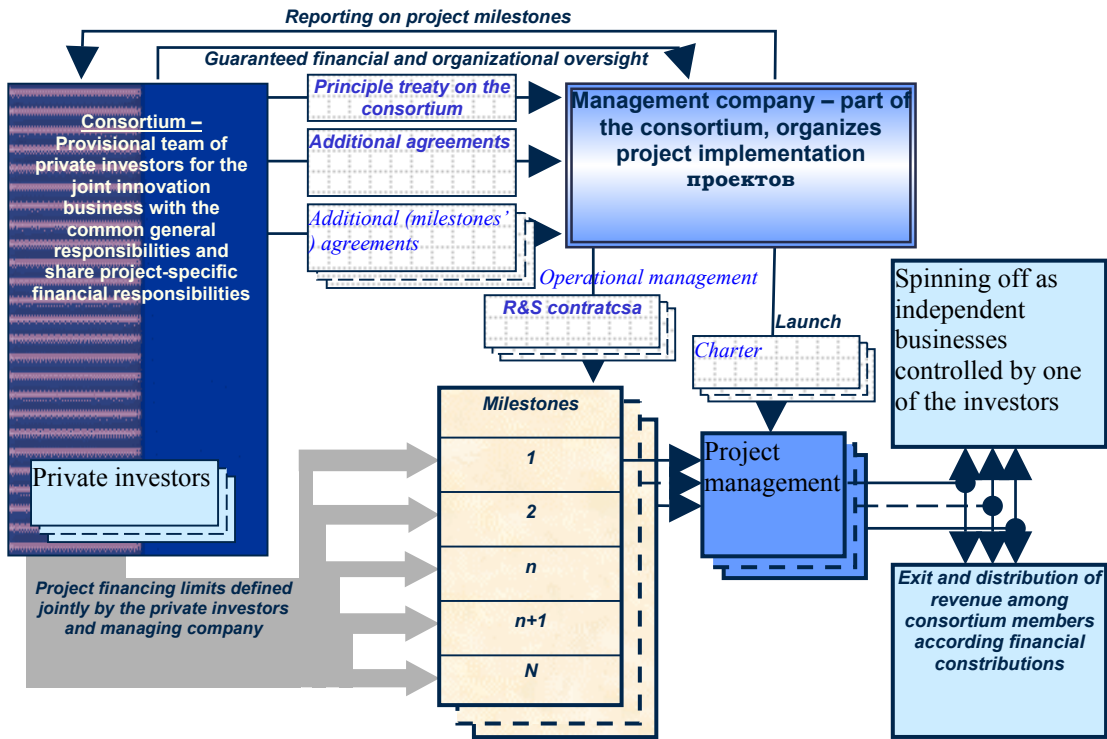
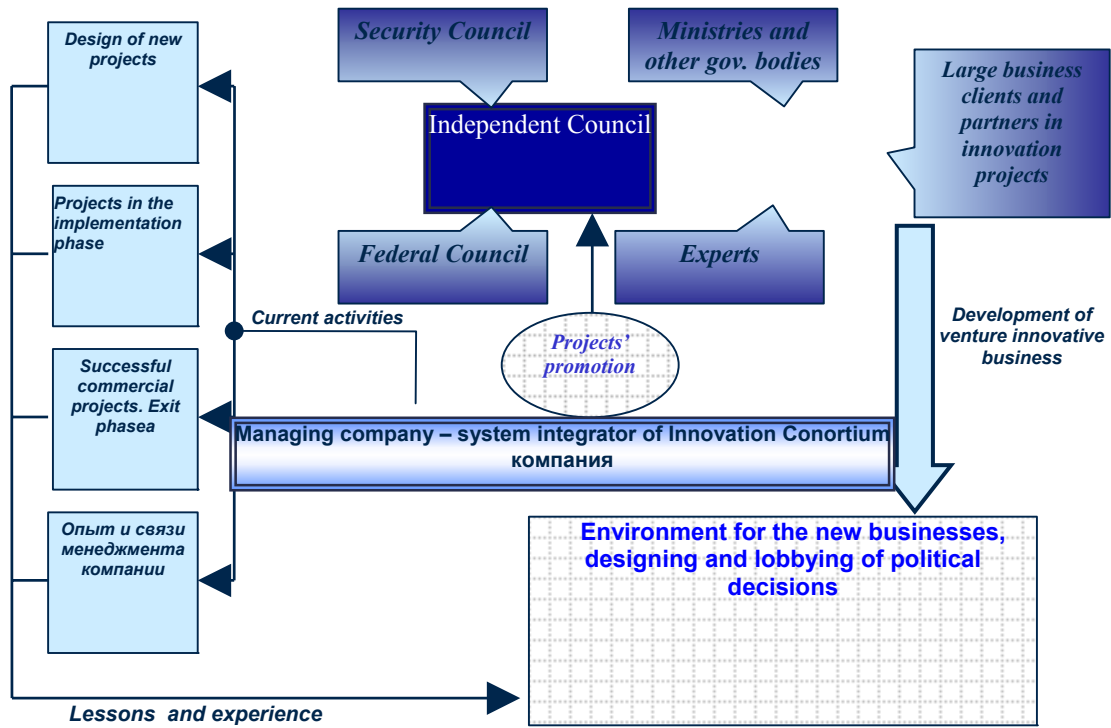


Figure 5. Public-Private partnership in Innovation Consortium



5. Conclusions

The evidence from the two pilot cases of the venture capital business in Russia, suggests that the government is going to play a significant role in the new market, which initial formation is to be backed by policy, financial and mediating instruments, avoiding, however, direct intrusion, control and even specific legislation.

In the surveyed cases the government was most successful in initiation the projects and signaling the venture community and industry managers that the risks and rewards of the venture business are subjected to government concern. Moreover, public funds appeared to be the least significant contribution of the state to the venture projects. The beneficiaries found indirect benefits more important – like easing the regulated market entry, reconciliation of competing interests, support to networking, sorting out of the managerial mess in the government academic institutes, which could manage advanced technologies, but fail to manage organization and partnerships.

Though it is much too early to distinguish between success and failure factors, one factor is difficult to dispute – professional qualities of the people in charge, both at the governmental and industry ends (as one of our responders formulated, “people should be in a sound mind”). Though objective reasons for the VC policy could not be neglected, these reasons did not materialize in practical steps unless “people with the sound mind” appeared in the government and initiated concrete policy designs

Another success factor and specific finding of venture business in Russia is the crucial role of outsider mediators, which accompany the projects and fill the gaps in organization, management, science-industry links, market research. In the end, the three company structure of the venture business (investor, implementer and integrator) build trust among participants and help compensate for the inadequacies of the general environment and failures of the embryonic market .

References

Arzamastsev, Nikolai. 2003. Presentation at the round table of RVCA, 21 January 2003.

www.rvca.ru

Ammosov, Yuri, 2002. *K vseobschei istorii uspekha Expert*, 25.11.02

Belaya Kniga. Prioriteti glyya venchurnogo investirovaniya v Rossii. 2001. RVCA. 2001

Burenkov, Vladimir. Administration Chairman of the Russian Association of Venture Investors, 2003. Presentation at the Round table of Association in April 2003, available

www.rvca.ru

Cherpakov, Sergey and Alexei Ponomarev. 2003 *Poyasnitelnyaya zapiska po investitsionnoy konsortsiomu*. Interdepartmental analytical center.

Danilov-Danielyan, Anton, 2003. Presentation at the round table of Russian Association of Venture Investors, April, www.rvca.ru

Fursenko, Andrey. 2002. Interview to the radio station Ekho Moskvi on 13 June 2002

Fursenko, Andrey. 2003 a. Presentation at the round table of the Association of Venture Investors, April 2003.

Gulkin, P. (Russian Technological Fund), 2002. *Venchurniy Biznes v Rossii. Vvedeniye v Venchurniy Biznes v Rossii*. Available at the web site of RVCA www.rvca.ru

Ministry of Industry, Science and Technologies. 2002. Draft concept of the System for Venture Investment in Russia. Available at the ministry website www.mpnt.gov.ru

Yegorov, Igor and Polina Belkina. 2002. Venture Capital Industry in Russia. BISNIS Northwest and Central available at www.bisnis.doc.gov

Vennchurniy capital I pryamoye investirovaniye v Rossii. Collection of articles and presentations. 2000. St.Petersburg

Vlasov, Alexie, director of the Russian Technological Fund. 2003. Presentation at the round table of Venture investors, April 2003. Available at the website of Association at www.rvca.ru

Vlasov, Alexie. 2002. *Venturniy capital v Rossii*. Analytical paper placed at the RVCA website.