

Why do some innovative models work and others not in the Russian Federation?

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Subtheme: 2.1. Transferability of innovation models and systems (from developed to developing country, region, innovation system, development stage): replication vs. adaptation to local conditions.

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### Introduction

The aim of the research is to determine conditions for transferability of innovation models from a developed to a developing country. The authors examine the transfer of three innovative models: business incubator, commercialization unit and venture capital fund from developed countries to Russian Federation.

The article deals with features of the work of innovative models in developed countries and Russia. We analyze why the models of technology transfer delay or do not give the expected results. The authors give recommendations, the implementation of which leads to a more effective model.

### State of the art

Since the mid-1990s the Russian government repeatedly stated that there is strong necessity to move from resource economics to knowledge-based economics. According to this statement the authorities developed various programs, provided financial support and copied the best Western experience. However, the best Western experience once spread to the territory of Russia did not bring the expected results. The authors of the paper try to answer the question: "Why?". The research study examines three models: business incubation, support of commercialization offices, venture capital financing.

### Methodology

The authors examine reports of innovative structures, opinion of experts and participants who were involved in the processes for innovation support.

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## Findings and interpretation

1. Business incubation

2.

Russia has already created more than a hundred business incubators - structures for small enterprises support in their initial activity. A standard list of services for residents: free (or rent at a discounted price) office space, meeting rooms, office equipment.

The research compares business incubators in Western Europe and Tomsk region.

Table 1. Comparison of business incubators in Western Europe and Tomsk region.

№	Index	Western Europe	Tomsk region
1	Number of projects (ideas) received for consideration, units per year	35-40 projects	25-27 projects
2	Number of projects undertaken in the business incubator, units per year	10-12 projects	7-9 projects
3	The most popular services	The services most in demand: office services, consulting, partner search, equipment provision, staff training	The services most in demand: business plan writing, search for financing, licensing and patenting services, educational seminars, English language training and editing
4	The number of small enterprises created annually in the business incubator	5-6 firms for an incubator of 8000 sq.m.	2-3 small enterprises
5	The number of enterprises floated per number of created enterprises in the business incubator p.a.	The average is 1/1.9	The average is 2/3
6	The average number of work places created by small enterprises located in business incubators	10 new work places	6-8 new work places
7	Economy of costs by receiving services at lower than market cost	Difference with market costs of services is 60 %	Rent of space in business incubators is ranges from 40-80% of market cost

The comparison shows that Russian business incubators have not yet become a nursery for innovation. They are perceived solely as office spaces. The main difference between a business incubator and any other forms of support for innovation is people who perform mentoring functions, the functions of development partners, teachers, and business. And this is a critical shortage in Russia.

The very existence of university business incubators is made difficult by the fact that a state university cannot support a commercial structure, and if an incubator is a division of an educational establishment, then it cannot be engaged in commercial activity – this contradicts the very essence of business incubating.

Therefore the main reasons why transplanting business incubating mechanisms does not give significant results are, in the authors' opinion:

- 1) A lack of financing of business incubators.

2) No experience in building a conveyor of business generation in Russian conditions, and current lack of mentors, consultants, business angels and serial entrepreneurs.

And, as a result:

3) A small number and low quality of services offered by business incubators.

Even so, Tomsk Region business incubators manage to work and bring results:

Table 2. Results of the work of business incubators of Tomsk Region in 2008 – 2009

Indicator	Student		Technological		Total	
	2008	2009	2008	2009	2008	2009
Space of the incubator in sq.m.	4827	5705,6	1520	2295	6347	8000,6
Number of employed persons	57	35	10	12	67	47
Number of competitions for housing projects at the incubator	5	12	7	4	13	16
Number of projects housed at the incubator	60	171	39	15	99	186
Total number of created enterprises	4	8	8	3	12	11
Amount of production by incubated enterprises in millions of rubles	88	39,65	20	30,68	108	70,36
Amount of production by enterprises floated from incubators in millions of rubles		71,75	-	33,2		104,92
Number of created work places at incubated enterprises	59	142	44	75	103	217
Amount of financing of the incubator in millions of rubles, including:						
- from the federal budget:	40,55	9,75	3,9	1,24	44,45	4,54
- from the regional budget:	21,85	2,5	1,2	-	23,05	2,5
	1,6	0,8	1,6	1,2	3,2	2,0
Total number of projects submitted to competitions		48		13		61
Including to venture funds		1		5		6
Including winning projects		17		5		22

#### Recommendations.

On the one hand, our country needs projects with an emphasis not on "the premises and an accountant", but with an emphasis on a network of contacts, regular events, meetings with the investors. On the other hand, the mentors and serial entrepreneurs are not grown in Russia yet. It is known that service departments of business incubator should establish contacts for their resident with mentors and serial entrepreneurs.

Therefore, the staff of business incubators should focus on providing services for residents in the establishment of relations with investors and potential customers, providing of consultancy (business planning, intellectual property protection, market research) and information services.

## 2. Commercialization Unit

The research examines the work of the Commercialization Unit (CU) in Russia and abroad. All necessary for technology transfer functions are gathered together in one place, so this is the meaning of the CU activity. The technology transfer processes are carried out with the maximum benefit for university and in compliance with the law.

The main feature of a typical Western Technology Transfer Center (TTC) is a creation of a full innovation system to support a project from “concept stage” to the stage of “small company with growth prospects”.

Functions that a TTC must execute, obviously more than a dozen. One or more high-level professionals are employed in each direction. There are favorable conditions for them. The main purpose of this idea includes high level implementation of all functions because any mistake leads the university to loss of significant profits. Obviously, the scientist is unable to fulfill all qualitatively or even one of these functions. Thus, the key word in understanding the process of technology transfer is "professionals" that is the basis of the TTC. In some TTCs at the largest universities – Harvard, Stanford – the number of employees reaches 60-70 persons.

And here we can talk about the first and from the author's view the main problem faced by the pioneers of technology transfer in Russia. Knowledge-intensive nature of the invention requires deep understanding of the subject from the TTC staff – marketing specialist, patent attorney, etc. Nowadays there is a lack of such specialists in Russia. And if such specialists exist universities and institutions often are not prepared to pay them competitive salaries. Therefore, most specialists in innovation management working either in private TTC (independent organizations, collaborating with several universities), or in venture funds, or perform the functions of technology brokers for major corporations-raiders.

Nevertheless, the CUs are established by the will of a university management, region authorities or the Ministry (government), but these units work on the employees' enthusiasm. The employees who received experience and skills stay at the university and do not run business because they manage several projects and it is impossible to pass them to another specialist.

During the model transferring on the Tomsk region territory a colorful marked interaction was observed between regional authorities and universities / research institutes. Currently, offices can be involved in the process of innovation the business both as investor and as a consumer of intellectual property of universities.

Since 2002 as a result of competitions that were organized by the regional administration there were created 13 commercialization units in 6 universities in Tomsk region, 1 academy and 5 in the scientific organizations of the Tomsk Scientific Center, Siberian Branch of RAS. The main goal of commercialization units is the identification of competitive commercially promising scientific developments, the problem solution of intellectual property protection and transfer of intellectual property rights by licensing agreements or by impact to the authorized capital of innovative new businesses.

The dynamics of commercialization units in 2006-2009 Tomsk region, are showed in Table 3.

Table 3. Fragment of the dynamics of the indicators of commercialization units in 2006-2009

<b>Indicators</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Number of staff	43	36	44	41
Number of developments that are in "orbit" of CU, units.			829	946
Number of developments made to work as a priority, units.	152	96	178	132

The conduct of market research			39	36
The number of projects submitted to competitions			338	262
Including to venture funds				4
Including winning projects			200	74
Total number of small enterprises created	13	31	14	31
Licensing agreements concluded	20	28	18	25
Amount of financing from the regional budget in millions of rubles	2,5	3,7	3,8	1,95
Number of employees having undergone training or retraining	-	-	5	10

The problems of design and development work in Russia are the following:

1) The unformed nature of the intellectual property market in Russia. The low culture of law abidingness in this segment of the economy. As a result of this, licenses for the rights to use patents and know-how are bought in miserly amounts. And design and development employees recommend inventors to commercialize their scientific results by opening spin-offs.

2) Industry in Russia is not interested in the search for and making use of results of scientific activity from universities and institutes of academies of science. A lack of understanding from industry as to which key problems in their activities they might solve with the help of scientific research and the conduct of design and development work, lack of understanding as to the economic value. Often industry sees only the expenses part of conducting research.

3) Weak stimulation by the State in attracting business and industry to science. Companies have to pay all taxes and only after that can spare funds be used to pay for such things.

3) Scientists and representatives of industry still speak in different languages.

4) A small number and great underfunding of engineering centers which deliver up ‘raw’ results of research to a product which will be accepted by the market.

5) Barriers to entering international markets and geographical particularities of the transport system in Russia.

6) Scientists’ lack of faith in the innovation support infrastructure due to the low informedness of researchers about rare but successful projects.

7) Unformed understanding in society about the correlation 1:10:100 (1 unit of expense on an idea, 10 units of expense on the science, 100 units of expense on taking the scientific results to market entry).

Even so, these problems, from our point of view, are possible to overcome and with minimal losses for all interested parties.

The main recommendations for overcoming these problems may be the following:

1. Government should finance not only the creation but also the functioning of the CUs.

2. CU staff should widely present even a single success.

3. It is necessary to advertise more widely the services and opportunities, concentrating attention on solving clients’ problems.

4. Commercialization offices must use modern and permanently widened opportunities for communication in virtual space. It is importance to move from Place to Space.

5. To create with our own efforts a culture of work with intellectual property, at least within our own organization and close environment.

### 3. Venture financing

Another innovative model that attempted to transfer to Russian “soil” is venture capital financing. And this model is trying to work in the Russian Federation with the highest scratch.

The main problem for the venture fund is to get out from the invested business. And who would buy a venture fund's stock of the company's share in Russia? Maybe it is possible to sell the company on the stock exchange. In Russia, though, there is a playground for small start-up companies on the RTS and MICEX, but very few examples. Although the output of such businesses is usually the most profitable. It is more likely that a venture capital fund investing in a Russian company may get out of it by selling its share to a large investor (strategic, but sometimes financial), or, finally, individuals such as managers of larger companies.

The next problem is the excessive control of state institutions. In Russia, venture investment is growing based on public-private partnership. Not all officials understand that such financing is very risky. An estimate of its effectiveness should be not by the results of just one project, but by the results of the whole portfolio. In particular, because of this Russian Venture Company placed only \$ 200 million with the companies from an existing \$ 833 million dollars by the end of 2010.

Another problem is the strong revaluation of intellectual property by the majority of the developers. That is a significant barrier to determining the share of developers in the business.

But that's not all. As a rule, in Russia it is difficult to gather a qualified and complete team that can bring a product to market. It must be those who can persuade consumers to buy, those who know how to sell, those who can manage money. All of them are needed. And if someone in the team is missing, the chance to build a successful business is not great.

#### Recommendations

Efficiency of government investment should be determined not by the results of individual projects, but by the results of the portfolio of projects. Also the total investment return for a developing institution still must not be negative.

It is necessary to develop stock markets in Russia. It is necessary to legally adopt the financial privileges for businesses investing in innovation.

#### Conclusion

Thus, based on expert conclusions, from three innovation mechanisms brought from developed countries to Russia, from the point of view of practical results the best is the mechanism of functioning commercialization offices in terms of consultation centers for university and research institute employees for a wider range of questions of commercialization, technology transfer, and knowledge transfer.

It follows to emphasize that before transferring innovative models from developed to developing countries it is necessary to determine the requested and sufficient conditions under which they can not only exist but also to develop; it is necessary to modify or create these conditions and only after that to transfer the innovative models into the country and region.

The conclusions were reached based on expert evaluations and customary practice. Further research must examine the necessary and requisite conditions for the functioning of such mechanisms.