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**Building relationships by a high-tech startup:
What are the first steps and the main problems**

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Work in progress paper

Summary

In recent years the Russian market has undergone numerous changes within the transition process into a market economy. One of the trends being visible now is SME and private sector development, including startups in high-tech sectors. In this paper we look at the case of building relationships by a Russian high-tech startup operating in the field of nanotechnologies.

Key words: startup, relationships, high-tech, Russia

“... Interaction is not a simple mechanism regulating the life of the company, but a major part of its life. It is through interaction that a company exists and develops... Hence, interaction is a fundamental aspect of development.” (Håkansson 2003)

Introduction

The purpose of the paper is to analyze the case of building relationships by a Russian high-tech startup operating in the field of nanotechnologies. The company has recently invented the technology which is considered ultimately the best in the targeted segment of the world b-2-b market. The main question is: does it make sense for such a company to aim at the participation in a b-to-b network of knowledge? And if so, what kind of relationships should be built to gain the most promising position which allows the startup to make the most of the invented technology and to change the particular qualities of its intellectual property into sustainable competitive advantage.

The study is based on the IMP network approach which offers a solid ground to observe network relationships in which business firms are involved. The statement to be verified is that the business trend of inter-organizational cooperation is especially high when dealing with an advanced technology product.

The main topics discussed

The paper is organized around the following topics. Firstly, we focus on the literature on the subject, especially on the papers of the IMP network approach. Then we aim to give insight into some company-specific and segment-specific features which are crucial, from our point of view, for making a decision about building relationships in a high-tech sector under investigation. A number of relevant hypotheses are to be investigated more carefully in the course of our case study. A marketing program is to be proposed which could help the local high-tech startup to initiate developing an inter-organizational network of knowledge and establish itself in the market using knowledge exchange for the common benefit of the network members. Corresponding conclusions made while analyzing results of in-depth interviews conducted with

top managers, as well as interviews with industry experts and secondary data available, will be then stated in the paper. Finally, suggestions for future research will be discussed.

This paper takes network paradigm as a main basis of investigation looking at the development of Russian SMEs mainly under the of the IMP research tradition. In line with this tradition, interaction between companies in industrial markets is seen from a relationship perspective (Håkansson and Snehota 1995), relationship being defined as “mutually oriented interaction between two reciprocally committed parties”. Over the past two decades, the literature has increasingly moved to consider inter-firm networks as an efficient form of organizing business activities. Network approaches vary significantly being numerous and diverse but having all together formed foundation for the development of a new paradigm (Rumyantseva and Tretyak, 2003).

It's also broadly recognized that knowledge and learning have become important issues for companies which aim at adapting their operations to the changes in the company environment (e.g. Nonaka and Takeuchi 1996). Companies are no longer interested only in financial or product related benefits offered through network, but mutual sharing of knowledge and experiences can be a key motivator for building networks. The relationships that emphasize non-economic factors like knowledge sharing and learning can in the long run have positive financial effects for the company (Järvelin and Koskela 2004).

If we look at SMEs in high-tech sectors, we can see that networks have a central role in learning, knowledge creation and innovation processes. Being a member of a knowledge network is often crucial for their successful operation (Tell 2000; Rizova 2006). At the same time, there is a number of problems which have to be solved, e.g. the problem of intellectual property and the probability of opportunistic behaviour.

Customer-supplier relationships in Russia

The current decade became a starting point of reconsideration in terms of customer-supplier relationships in Russia. Opportunistic behavior is still widespread in Russia being attributed to weak enforcement of contracts, low transparency of legal system, and persisting corruption (Tretyak and Sheresheva 2004). At the same time, Russian companies are now facing the new reality. They have to struggle with a lot of foreign competitors coming to the local market and bringing modern organisational ideas which help them to beat local actors. Some of them try to penetrate new markets abroad. Thus, they are strategically committed to building long-term exchange relationships with their customers and suppliers. In tendency, traditional emphasize on optimizing single transactions is step-by-step supplemented with a long-term view. But the process is contradictory and inconsistent, with institutional environment giving Russian enterprises more stimuli to vertical integration than to networking. Under present conditions of uncertainty, misunderstanding and asymmetry of information it is difficult for enterprises to extend and integrate supply management processes (Ibid.).

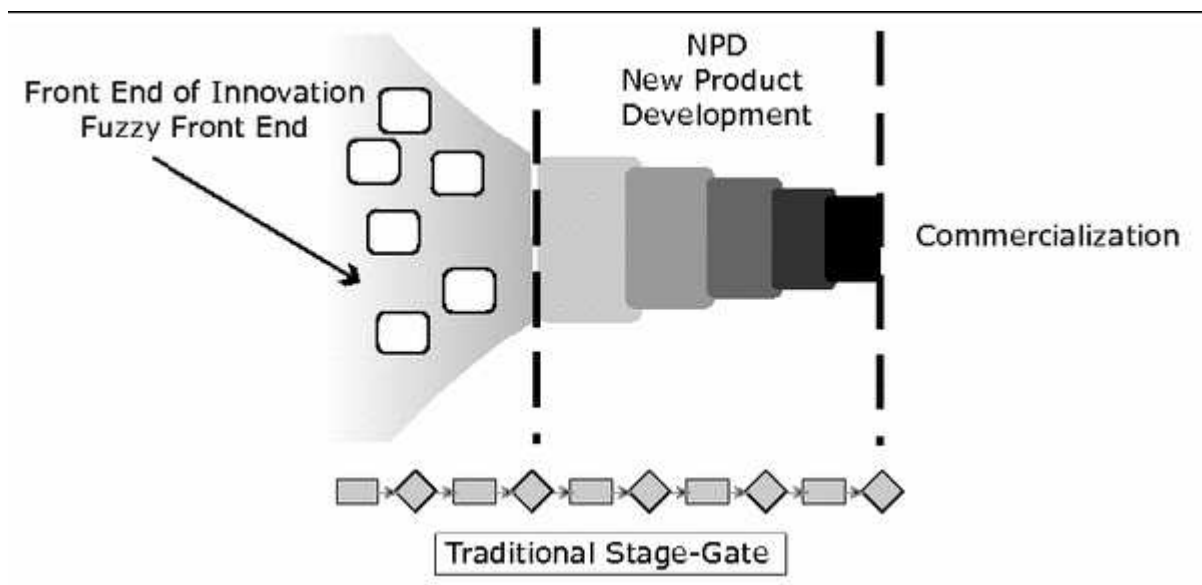
Our preliminary research, carried out by means of in-depth interviews with Russian high-tech managers, has shown some specificity of local mindset, side by side with the typical (for many firms all over the world) reappraisal of long-term inter-organizational relationships, regarded now as one of the main factors of success. We also admitted a mindset difference in management of high-tech start-ups and the firms from mature industries. The most Russian top-managers leading “traditional sector” companies are not free of their previous experience of the soviet “networking” and try to succeed under new circumstances using this experience, while the most managers in start-ups are quite young and have entrepreneurial mindset.

The purpose of the paper is to propose what kind of knowledge network is appropriate for a Russian start-up aiming to gain the most promising position and to change the particular qualities of its technology into sustainable competitive advantage.

Methodology

The present empirical study draws on the case method (Eisenhardt, 1989; Eisenhardt & Graebner 2007; Flyvbjerg 2006; Yin 1984). As a matter of fact, single case often provides better theoretical insights than multiple-case research based on creating good constructs (Dyer and Wilkins, 1991). The case study approach implies the detailed examination of a single example of a class of phenomena. It allows an investigation to retain the holistic and meaningful characteristics of real-life events, such as organizational and managerial processes. Empirical material was obtained in the form of in-depth interviews of the key people involved as well as by means of observation and analyzing documents. The present analysis draws on this data.

The case company of this paper (Company S) can be characterized as follows. It is a Russian high-tech start-up spun off in 2000 from the Institute of Crystallography of the Russia Academy of Sciences laboratory. For 4 years it has been developing technology for industrial production of oriented crystalline growing of tips array for Atomic-force microscopy (AFM) purposes. At present the unique technology¹ is available, and mass manufacturing of Highest Quality AFM probes for R&D and industrial usage is starting. So, the company steps in the phase of commercialization.



Howe School of Technology Management

It is well known that a company at this stage often runs into management problems connected with inadequate management skills of the founders (e.g. Moore 1995). In fact, out of every 10

¹ The production process of the tips is based on managed growing of oriented crystalline needles. The cantilevers of the AFM probes are formed of single crystalline silicon with broader surface oriented along the plane, and the tips are also single crystalline epitaxially grown on the cantilevers.

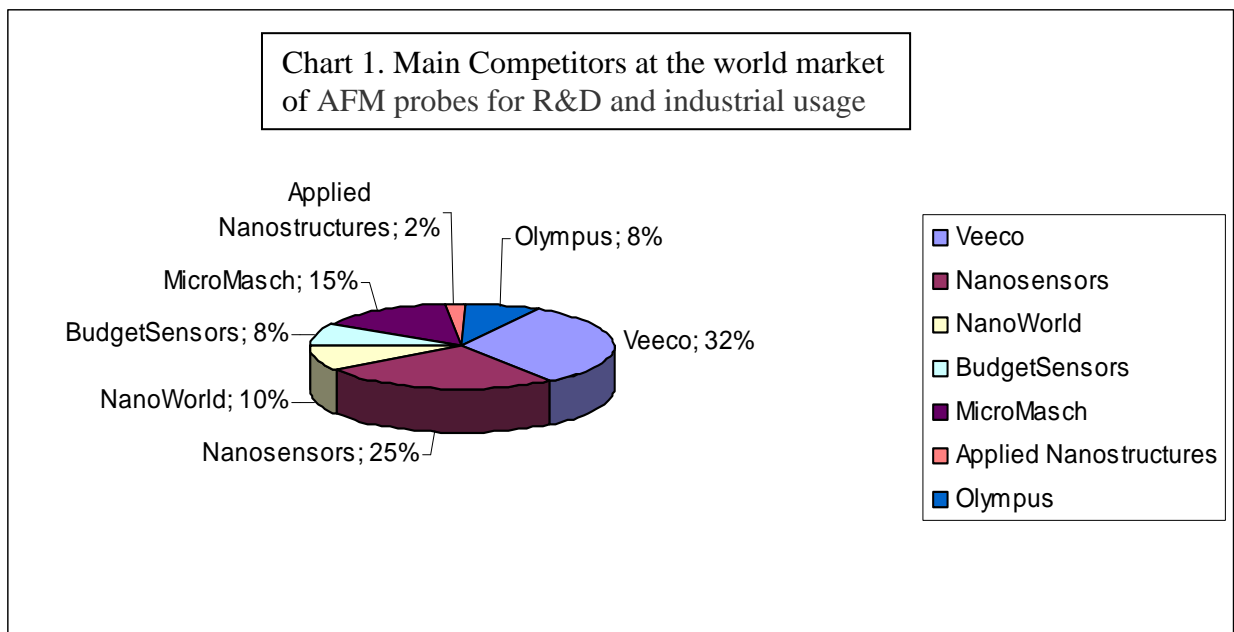
R&D projects, five are flops, three are abandoned and only two ultimately become commercially successful (Rizova 2006). We investigated what steps were taken by the Company S at this stage.

Empirical findings

As a result of the analysis, several aspects of management were identified and their nature was explained. These aspects were: a) rewards from the knowledge network, b) the selection of partners, c) control and trust. The analysis was focused on these aspects because they served well the purpose of the study, which was to understand the role of knowledge network in high-tech start-up activities.

Rewards from the knowledge network

The management of the Company S appeared to be aware of the lack of managerial skills and market information needed to foster commercialization of the innovative product. At the same time, they are not intended to sell the company. In this case, the choice was made to build a network of relationships and to interact intensively with a number of actors (in Russia and abroad as well) considered to possess skills crucial for the firm's stable growth and gaining competitive advantage from the technology. The main purpose of the relationships network development, says one of the top managers, is to gain added information and knowledge benefits. It'll help the company to choose an adequate marketing strategy of entering target markets, including USA, Germany, and Japan, where the customer's demand abilities are the highest, and to compete with the firms already established at the world market of AFM probes for R&D and industrial usage (see Chart 1).



Selection of partners

One of the first steps is the selection of partners. The desk research was conducted to better understand the environment. Company's managers also visited some R&D laboratories and took part in a number of exhibitions (e.g. 2006 MRS Fall Meeting exhibition, Boston, MA; NTMEX 2006 exhibition, Moscow, etc). As a result, a preliminary list of partners was elaborated. In

accordance with the list, Company S aims to interact on the long-term basis with the following groups of partners:

- 1) Lomonosov Moscow State University (MSU), Department of Economics faculty members skilled in marketing innovations and entrepreneurial management, each of them having his or her own social network and being a member of the worldwide networks of excellence;
- 2) The Science Park of Moscow State University (set up in 1992 by Lomonosov Moscow State University and Risk Investment Company (RICO) with sponsorship of Russian Federation Ministry of Science and Foundation for Assistance to Small Innovation Enterprises). The main goal of the MSU Science Park all-round assistance to aspiring entrepreneurs, as well as small and medium-size businesses in the high-tech area. As MSU SP is a member of Union of Russian Innovation Technology Centers (ITC), and a member of Russian Association of Venture Investment and Technopark Association, Company S gained access to the knowledge network already established by these organizations;
- 3) Well-known influential AFM scientists in Russia and abroad: they are aware of the main research trends in the field, have information about research themes of scientific laboratories all over the world and are able to give an advice about the technical characteristics of probes which are (and will be) in greater demand for R&D and industrial usage. These people are also of great importance as opinion leaders: they are able to influence the decisions of industry actors about the network of probes' suppliers. Furthermore, relationships with research centers and laboratories contribute to improving production technology. As an example, the interaction with Moscow Institute of Electronic Technology (Technical University) is a win-win situation: Company S supplies its probes with considerable discount or free of charge, and receives the results of laboratory experiments giving clearly recognizing of strengths and weaknesses of its technology;
- 4) Selected large producers of Atomic-force microscopes. The first partner selected was a Russian producer ND-MDT which was ready to begin collaborative interaction and to place at the Company's disposal data on Atomic-force microscopes purchasing - in exchange for the super quality probes supplied at the price of the high quality probes. This data helped to estimate the Russian market volume and dynamics;
- 5) European and American distributors (Asian distributors being in sight). The most valuable information gained from this group, says one of the Company S managers, concerns regional market trends, pricing policy, and demand abilities of local customers.

So, the first two groups of partners were chosen to reinforce the managerial skills; the next three were recognized as important issues of information on the market trends and at the same time as potential customers. AFM scientists are also valuable partners for permanent monitoring of technology trends and checking the pluses and minuses of the firm's know-how and technology.

The first steps taken by the Company S were assessed using framework proposed by (Ford et al. 2004). The point was to understand if there were (or were not) implemented the relationship management tasks listed in (Ibid.):

- to learn about partners and their problems and abilities so that a suitable offering can be developed;
- to persuade the customer that the offering is the right solution to those problems;
- to discuss relationship investments and adaptation;
- to show commitment and build trust;
- to reduce distance (particularly important in the early stages of a relationship);

- to exercise power and manage dependence;
- to reduce or manage conflict.

In our case we've found the following. There's a clear understanding of the fact that the interaction between the company and its partners depends on what they can learn about each other's needs and abilities (about what they need from the relationship and what they can offer it). The managers are ready to adapt their offerings and promises and to invest in relationships. They have already found out that they need considerable amount of human resource investment to develop contacts with partners, to give and receive information and advice. Being scarce of human resources they see as a main obstacle to realize the plan of relationships development they have at present. Another problem named by managers as an obstacle to contract with some big customers very attractive to the Company S is as follows. The production technology is not yet stable enough to guarantee that offering will be fulfilled. Russian custom problems make fulfillment of any offering still more uncertain. In order not to gain bad reputation the Company hesitates to enter some important markets, and this decision prevents to some extent the development of the Company's knowledge network.

Control and trust

At the same time, nobody in the Company S was concerned about reducing distance or building trust as a management task. The overall local situation promotes mutual mistrust and misunderstanding which are hard to overcome. Even the most flexible companies are afraid of having too close distance and see no sense in reducing it. The less distance between the partners, the more knowledge the partners have of each other and hence the more possibility of power, dependence, and conflict or misuse of vital information. So, there is a clear preference to control information flow tightly. The most common decision in Russia is to avoid close distances and to prevent the main amount of corporate information from going to partners. There was no intention to develop skills to manage dependence or conflicts in our case too. Of course, it could be due to the stage: the company just steps in the phase of commercialization. But it could also be a manifestation of mindset typical for Russian managers in all industries.

Marketing program

As we have seen above, the Company S had already initiated developing an inter-organizational network of knowledge aiming to establish itself in the market using knowledge exchange for the common benefit of the network members. In addition to the steps taken before the internal communication matrix and customer-supplier communication matrix should be developed to help co-ordinate communication between different individual and functions for every mutual relationship. The b-2-b knowledge network relationships should be audited and managed carefully as the Company's primary assets. Some of knowledge network members are also good as partners for fostering Company's product promotion and distribution. Contracts with producers of Atomic-force microscopes to jointly supply AFM & probes may give an impulse to market development. Delivering of probes free of charge to key scientists – opinion leaders in order to have publicity of company's super probes (having best technical parameters in the world) may enhance brand profile and at the same time help to improve the technology.

Conclusion

Our main conclusions are as follows. The business trend of inter-organizational cooperation is especially high when dealing with an advanced technology product. The case study allows us to put forward a hypothesis that management of Russian SMEs in high-tech industries differs from management in "traditional" industries. While latter still consider another firms as adversaries,

not collaborators, and therefore prefer to emphasize on optimizing single transactions, local managers in high-tech sectors understand the role of intangible assets, and relational assets in particular, as an essential factor of their competitiveness and profit-generating capacity. They tend to create win-win situations and build long-term connections with groups of carefully selected partners. They are sure that it does make sense for such a company to aim at the participation in a b-to-b network of knowledge. They implement a number of the relationship management tasks, namely these to learn about partners and their problems and abilities so that a suitable offering can be developed; to persuade the customer that the offering is the right solution to those problems; to discuss relationship investments and adaptation. But they are not concerned about reducing distance or building trust as a management task, or to manage dependence or conflicts as well. So, additional efforts are needed to provide Russian managers with relevant skills, e.g. improved education programs and establishing connections with educational structures abroad to make “new wave” Russian managers acquainted with the wide spectrum of modern management theories.

Critical questions are where to find strategic business partners and how to establish relations with them, since the suppliers demonstrate much less readiness to long-term win-win collaboration. Nevertheless, there is already some positive experience of gaining additional advantages from such collaboration in Russia.

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