Networks of Excellence: Design and Implementation

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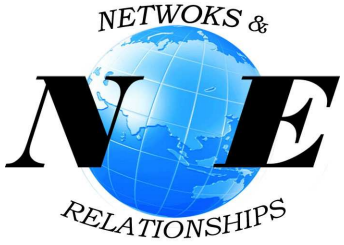

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Abstract

Networks of Excellence (NoE) in European Union are specific instrument of the 6th and 7th European Framework Programmes for achieving the long-term goal of integration of research activities in Europe within the concept of European Research Area. Shortly after its launch in Europe in 2003, this new organisational form spread to Russia: in 2006 the pilot virtual community of researchers **Network of excellence "Development of interfirm cooperation forms: networks and relationships"** has been launched by several professors of Marketing at the State University - Higher School of Economics.

While being truly important for researchers, NoE is a completely new form of research community integration, and it has not yet been an object of a serious study. In this paper we outline a theoretical framework for NoE functioning and the interaction of its members. In case studies of the European NoE called PRIME and the Russian pilot project we investigate in depth the dimensions of design (purposes and evaluation) and implementation (governance mechanisms and evolution paths), and explain the systemic interrelations between the NoEs' organisational properties and their development context. We show how European experience can be adapted and exploited for implementing research networks in Russia. The summary and conclusions follow.

The results of this study could be useful for NoE practitioners (policymakers and academic leaders) as well as for further research in science policy in Europe. The study also contributes to understanding the dynamics of formal and informal networks and interaction between academic, business, and policymakers' communities.

Keywords: Network of Excellence, research community, network governance, evaluation

Introduction

Numerous advantages of flexible organisations for turbulent business environments attracted attention of managers and policy makers in as far as 1980s, and this was carefully documented in research (Miles, Snow, 1986; Piore, Sabel, 1984). An appreciation of value and unique flexibility of market oriented organisational forms, broadly known as networks, has been since spreading within business environment with a tremendous speed. Following a rapid increase of interest to various types of network organisations, a number of scholars have even declared these structures as a prototype of the organisational form of the future (Snow, Miles, Coleman, 1992).

However, along their increasing use in business practice, various configurations of networks gradually deliver new challenges for both managers and business researchers. And, despite the fact that there is a certain consensus as to network definitions, their classifications, factors stimulating their development and areas where these organisational forms are best applied and most successful, there is still a number of issues remaining open. Among them are questions related to networks building, their management and new avenues of their application. It remains unclear what are the specific skills and competences which are most successful when possessed by network managers, how to prevent initial negative attitude and reluctance to participate of particular organisations and personalities included in the network and a number of other issues.

In this context, experience of network creation and management accumulated by the Network of Excellence (NoE) could be particularly interesting. Although this experience is still limited, it became very successful due to a combination of academic traditions of scientific collaboration merged with the infrastructure and financial capabilities of the European Union programmes, aimed at creation of a common research environment.

The main objective of this study is to understand design and implementation patterns of different types of NoEs. It is important to show how the context influences goals set, how its evolution defines NoE formal governance mechanisms, and how the goals influence NoE evaluation practices. In this paper we analyze the scope of possible design variations for NoE, identify two types of research networks (interorganisational and interpersonal), illustrate them with cases from the EU and Russia, and show how each type of NoE can be designed and implemented.

To date, NoEs attracted very limited attention of researchers, such as (Luukkonen, Nedeva, Barré, 2006). We analyze NoEs as networks of relationships, applying IMP Group approach and methodological assumptions (see, e.g. (Ford et al., 2003)) to two cases: a large-scale European Network of Excellence and a small-scale research network in Russia, which we also referred to as "NoE" (though it is not a NoE in the sense of the European Commission). Our task is twofold: we show how the network interactions and purposes are formed and illustrate the interplay between actors, purposes, governance, evolution stages and evaluation indicators. We provide information about both NoEs, but we use them in different ways. Example from the European Union illustrates the concept of NoE in dimensions of integration and excellence. The Russian pilot case forms the plot of the paper, and is described in more detail: development context, goals, actors, evolution stages and evaluation practices. The comparisons and conclusions follow in the final section.

Contextual analysis of NoEs: forms of integration in the research community in Europe

In the twenty first century Europe the policymakers recognized the need to coordinate the research directions and priorities, and the national science, technology and innovation policies at the European level to achieve and sustain research excellence. The concept of the European Research Area (ERA) was introduced, an area of free movement and exchange of knowledge and technology (European Commission, 2000). With this aim in mind, the integration instruments were proposed in the 5th Framework Programme (1998-2002) – thematic networks and concerted actions (The Council of the European Union, 1999). Their positive effect on integration inspired the Council and the Parliament to propose two new instruments in the 6th Framework Programme: Integrated Projects (IPs) and Networks of Excellence (NoEs) (European Parliament, The Council of the European Union, 2002, p. 29). We will further concentrate on analyzing the latter instrument (NoEs).

The general purpose of a NoE can be described as achieving "*scientific and technological excellence on a particular research topic*" (European Commission, 2003b, p. 1). In context of relationships between business, science, and the society this statement though conveys a different sense – the scientific excellence should benefit to the people of European Community. Thus, it is stated in the

"Provisions for implementing networks of excellence", "*these networks do not act as "closed clubs", concentrating only on strengthening the excellence of the partners inside the network*" (Ibid.).

NoEs and other large scale cooperation projects proliferated: all in all, more than three hundred projects were funded and launched under the FP6 in 2002-2004.

Table 1. FP6 NoE statistics. Sources: (European Commission 2007a, 2007b; CORDIS Portal, 2007).

	Number of projects	
	IPs	**NoEs**
Life sciences, genomics and biotechnologies for health	**55**	**20**
Nanotechnologies and nanoscience, knowledge-based multifunctional materials, and new production processes and devices	**14**	**17**
Aeronautics and space	**8**	**2**
Food quality and safety	**16**	**6**
Sustainable energy systems	**14**	**4**
Sustainable surface transport	**8**	**4**
Global change and ecosystems	**9**	**4**
Citizens and governance in a knowledge-based society	**2**	**3**
European Atomic Energy Community – Euratom	**6**	**2**
TOTAL	**132**	**62**
Information Society Technologies (total number of projects)	**25**	
ERA-NET projects - Coordination Action	**59**	
ERA-NET projects - Specific Support Action	**26**	
Total ERA-NET projects, NoEs and IPs approved and launched under FP6:	**304**	

It is interesting to compare the European Networks of Excellence with the Canadian programme of Networks of Center of Excellence. Unlike it is in the European Union, in the USA and Canada country-wide independent industry associations and research associations are numerous, and there is no need to provide additional funding to them in order to reach greater integration. The situation in 1989 Canada could be better described in this statement: "*…the country can no longer afford researchers who isolate themselves in the academy, pursuing esoteric problems at public expense.*" (Fisher, Atkinson-Grosjean, House, 2001, p. 322), and the aim of the program – to promote "*the commercialization of academic science and academy–industry partnerships*" (Ibid.). So the Canadian programme was designated to change the culture of research and to make universities more commercially oriented. Clearly, NoEs distinguish from the NCEs in that they are the means to overcome the fragmentation of research, but the improved research in the ERA is expected to benefit the people of Europe via strong vibrant system of academy–industry partnerships.

It seems that the bottom-up European policy of creation and funding NoEs mostly benefited the pre-existing research and development networks: additional funds became available for them in case they were able to organize a joint project that fits all criteria set by the "Provisions". Other beneficiaries were formal and informal business networks (so called "communities of practice") and student networks.

One example of a well-structured and developed research community that benefited from the Commission's financial contribution is Virtual Enterprise Forum (VE-forum) (VE-forum, 2007). Several community special interest groups (SIGs) turned into formal structures and received European funding. Among them are an integrated project on collaborative networked organizations called EcoLead (IP 506958) (ECOLEAD, 2007a) and a NoE called Concurrent Enterprising (IST-1999-29107) (CE NoE, 2007). Similar examples can be found in other scientific fields (see the list of FP6 NoEs (European Commission 2007a)).

So, the interest of academic communities in the initiatives of European Commission proves the utility and success of NoE as a European science policy instrument. But it can be criticized on the grounds that it requires from social research networks to establish formal associations with artificial organisational boundaries and rigidities, and limited access to new participants. If this is true, wouldn't stimulating interpersonal research and business networks be a feasible amendment, if not an alternative to the current policy in Europe? Could the purposes of integration and excellence be achieved in a different way?

We consider the experience of NoEs design and implementation in Europe to be too limited to make far-reaching conclusions. NoEs and other projects have 5 to 7 years long history and a funding

period of 3 to 7 years (European Commission, 2003b), whereas NoE experts assume that achieving durable integration on a European scale would require 10 to 15 years (Luukkonen, Nedeva, Barré, 2006, p. 249). We conclude that apart from NoE experience, it is also important to study the European research communities, such as the mentioned VE-forum, and the Industrial Marketing and Purchasing Group (IMP Group). These experiences are especially relevant for understanding the future NoE design and implementation patterns in Russia.

In the following, we analyze European NoEs in more detail.

Understanding the Networks of Excellence as networks: The PRIME NoE case

Traditional research networks (or research communities) have always been based on interpersonal social ties. While the balance between social and professional interests and the formality of ties can vary to a great extent, the boundaries of these communities are usually blurred. The NoEs differ sharply from this soft form of integration.

By design, any NoE is a large scale formal professional network with clear boundaries, selective membership criteria and considerate entry barriers that are mentioned in the very name of "The Network of Excellence". The NoE members are organisations (or better, the structural units of these organizations or 'labs') residing in different countries. The allocation of financial resources between member labs is competition through a call, influenced by the structure of the joint programme of activities, agreed earlier.

A good example of such NoE is PRIME (Policies for Research and Innovation in the Move towards the European Research Area), one of the most successful Networks of Excellence established in 2003 under the FP6, topic "Citizens and governance in a knowledge-based society". New participants are proposed by established participants and accepted through formal application and approval of the PRIME Governing Board, which includes all member organizations (PRIME NoE, 2006b, p. 5). Similarly, new scientific projects are elected for funding and periodically assessed by the PRIME Scientific Committee, a group of 6 experts (Ibid., p. 7). The overall organisation of NoE, rights and obligations of its members, its management and voting rules are regulated by The Consortium Agreement signed by all PRIME members. It serves as a 'Constitution', being a foundation for the long-term interaction within the NoE.

What makes NoE different from the member 'labs' themselves, or from a research funding agency? NoEs can be compared to them along several dimensions. The resource distribution mechanism in NoEs and in research funding agencies is a competition of different research groups or projects through a call, whereas in universities and research agencies it usually is a hierarchical decision-making process. On the other hand, anyone could apply for a call issued by the funding agency, while only the registered NoE members have access to its internal resources and can participate in calls. As Luukkonen at al. note, NoE is an intermediary between its member 'labs' and the European governing bodies and funding agencies (Luukkonen, Nedeva, Barré, 2006). This makes us think that relationship management skills are more important for NoEs than for funding agencies or research organizations.

From one hand, it is necessary to develop such skills, since the competitive money distribution mechanism and NoE internal regulations require members to cooperate. For example, a research project in PRIME should involve at least 3 institutional members from 3 different countries (PRIME NoE, 2007). On average, a PRIME institutional member was involved in 4 to 6 common projects, maximum number being 18 (PRIME NoE, 2006b, p. 13). From the other hand, the Community contribution is around 50% in NoEs (e.g., (INTEROP NoE, 2007)), 90% in ERA-NETs (Horvat et al., 2006, p. 5), whereas it is usually 100% for government research funding agencies. The support from the Federal government to Canadian NCEs amounted to 50% of their budgets (Fisher, Atkinson-Grosjean, House, 2001, p. 324). These facts also support the hypothesis on the importance of the NoE members' and governing bodies' relationship management skills.

NoE design is set by the European regulations, such as its Provisions (European Commission, 2003b). The scope of design variation between NoEs is thus limited, but at least two flexibility dimensions can be identified. The first is the degree of socialization of participants – to what extent are the interactions based on the functioning informal social networks, and to what extent they stimulate the development of new interpersonal networks among participating researchers. The second dimension is the balance of hierarchy and centralization vs. relative equality of participants. This internal characteristic should be mirrored by the governance mechanisms applied and governing bodies created by the NoE. Thus, we propose the following picture to outline the nature of interaction in different types of NoEs.

	Low degree of centralization	High degree of centralization
High degree of socialisation	Multiple-ties social interaction	Interaction through the administrative center based on social ties
Low degree of socialisation	Arms-length relationships coordinated by formal governing bodies	Hierarchy-like relationships coordinated by formal governing bodies

Picture 1. NoE design variations

The general purposes of NoE (spreading excellence, achieved through durable integration) are reflected in its Joint Program of Activities. Thus, we can group the potential purposes into two generic categories of spreading excellence (providing public goods) and integration of participants (improvements in the process of production of these public goods).

The spreading excellence dimension can be further decomposed according to the balance of interests between the various NoE stakeholders (e.g. academic community and business community). Thus, the NoEs can pursue objective of improving the competitiveness of European institutions of higher education and research, or the competitiveness of European business enterprises, or both. In particular, this can be done by creating new scientific disciplines or radically new technologies, and requires launching joint training programs. Each case implies unique balance of interests necessary to sustain the accomplishment of an objective.

Whatever the network pictures of individual participants are, the common working plan, i.e. the Joint Program of Activities (JPA) should be crafted each year. Much like the activities of other NoEs, PRIME activities fall into three broad categories: integrating activity, joint research programme, and knowledge dissemination. Integrating activities comprise European platform for integrated training (MSc. and PhD student exchange programmes, joint professional training, joint conferences and research paper contests) that results in joint research, co-tutoring and courses development. Joint research (reviews, exploratory research and comparative research projects) is organized in research projects, such as CIPR (new forms of collaborative patenting), Africa PRIME (relevance of the National Innovation System approach to non OECD countries) and other (more than 20 ongoing projects altogether). Knowledge dissemination occurs as a result of research integration and joint program of training, and is supported by PRIME annual meetings, annual Conferences hosted by the member institutions, and the PRIME Forum.

This dimension and relevant purposes mostly reflect the prevalence of the interests of academic members in the network and the importance of policy makers. Nearly all PRIME members are academic bodies. The dissemination of results and their implementation mainly advances the competitiveness of the participating institutions, while also contributing to the member states (e.g. by the development of uniform indicators for the progress of science and innovation).

In the contrary to this, at ECOLEAD project handbooks and electronic tools are the most important deliverables: more than half of consortium members are businesses (ECOLEAD, 2007a). "*Ecolead is expected to impact industrial competitiveness and societal mechanisms by: (1) provision of means to effectively exploit opportunities derived from the deployment of Collaborative Networked Organizations, (2) designing and enabling new professional work paradigms…"* (ECOLEAD, 2007b, p. 14).

The integration dimension as a way to achieve the necessary excellence, can be decomposed into the human factor and the shared infrastructure and partially depends on achieving "*the critical mass of resources and expertise*" (European Commission, 2003b, p. 1), that allows for significant economies of scale and scope. For example, PRIME unites over 230 researchers and 120 PhD students from 49 institutions in 16 European countries and the USA. It is approximately the half of all researchers in Europe in the selected fields of Science, Technology and Innovation Policy studies (PRIME NoE, 2007).

Critical mass is a relative substance, and depends on the number, scale and diversity of participants, and quality of their integration (shared communication and information systems, common data codification and intellectual property management systems, common research methodologies, shared databases, research and training facilities, discussion, review and publication facilities). Shared facilities of PRIME participants include shared databases, common publication of book collection, a shared mail list and a web-portal (PRIME NoE, 2006b, pp. 4-6).

One important feature of the integration that should be mentioned separately is its durability. No matter what are the initial purposes, the NoE project could be either temporary or permanent. The former should not be understood as simply "dependent on the funding from the Community", but the JPA can be constructed in a way that the necessity in the NoE (or its successor) would vanish when the aims of the JPA are achieved. PRIME's financing period is 60 months, but it aims at being a long lasting entity in a European Research Area (PRIME NoE, 2006a).

What positive effects does integration provide to NoE participants?

First, integration results in mutual learning, and knowledge and skills exchange, and professional R&D management. The research and innovation potential (perhaps better defined as excellence) of the network participants gradually advances as they become involved in a dense network of weak ties and exposed to knowledge flows. The network management board serves as a funding body, and with its support the research 'dead ends' can be exposed, explained and closed faster compared to an isolated university lab. Strong ties, such as rotation of personnel and joint training programs contribute to improved excellence, as well as increase the learning effects (Fisher, Atkinson-Grosjean, House, 2001; Powell, Koput, Smith-Doerr, 1996).

Second, joint R&D and training activities provide important scale effects. Relationship-specific investments tend to benefit to all network members when the infrastructure for shared use is developed. In business networks the expenses are divided between network members, in NoEs the European Commission provides large part of the funding. Probably, the network Coordination Committee is the most important specific asset, since the members are responsible for securing substantial part of external funds. Other assets could be physical infrastructure (potentially more important for NoEs in natural sciences (Luukkonen, Nedeva, Barré, 2006, p. 241)) or shared information systems and research methodologies. The shared assets catalyze the implementation of large-scale projects of common interest, such as metastudies (ONCE-CS NoE) or megaprojects (Epygenome NoE).

Lastly, spreading excellence activities can advance the reputation of NoE and its members, and increases the impact of the common activities (the knowledge diffusion). Regarding NCEs, they provide the interaction infrastructure for business and academic networks, and were conceived to produce similar positive effects (Fisher, Atkinson-Grosjean, House, 2001, p. 323). The innovation networks that aim at joint product development are also reported to provide similar participation benefits (Podolny, Page, 1998; Powell, Koput, Smith-Doerr, 1996). Obviously, these effects don't emerge themselves, but merely result from management processes and other coordinated activities of network participants.

In NoEs, NCEs and innovation networks knowledge is a key asset to integrate and share. So the knowledge management should be the most important coordination process. Management from the view of the network as a whole is implemented through shared goals and priorities as well as shared interaction standards and communication channels. NoEs are required to have some management bodies or mechanisms to communicate with the Commission, control the behavior of participants according to the standards set by the Commission, evaluate NoE progress, etc. (European Commission, 2003b, pp. 3-4). This can be a collective, or several collectives of individual participants (INTEROP NoE), supported by an independent external management body (PRIME NoE). But in both cases, "*(t)he consortium must designate one of its participants to act as the co-ordinator of the network*" (Ibid., p. 10).

The JPA is implemented in the form of research projects and training programs, which should have their personal coordinators (such as Lead Partners at PRIME NoE, Coordinators and Cluster Coordinators at DELOS NoE, etc.). Moreover, NoE participants usually have people who are responsible for the organisation of the membership, either formally or informally. All these NoE leaders may be official members of the Coordination Committee, or other collective governing bodies. The scope of our paper urges us to focus on formal governance mechanisms at the expense of informal leadership structures. To illustrate them and to understand factors influencing the choice of these governance mechanisms we analyse a case of PRIME NoE, outlining its activities, management and evaluation practices.

PRIME activities are managed by several governing bodies:

- Governing Board (all members) – periodically sets overall development directions;
- Executive Committee (12 members elected by the Governing Board), assisted by a professional Management Team (provided by ARMINES, French non-profit enterprise) – selection of activities and day-to-day network management: legal, financial, and logistical matters;
- Scientific Committee (6 members) – chooses scientific projects for funding, periodically assesses the quality and outcomes of research progress;

- Standards & Ethics Group (3 members) – setting the norms of relationship, intellectual rights management and supervision, rules for database sharing and standards for qualitative research, and occasional intervention;
- Characterisation Group (3 members) – a group of autonomous experts monitoring NoE activities, mapping its dynamics and evaluating the achievement of its objectives.
- For monitoring and choosing NoE activities a small scientific management group of three Executive Committee members is elected every year. It is assisted by several voluntary working groups headed by Coordinators, which develop each separate line of activities (PRIME NoE, 2007).

The context of PRIME design and implementation that was described in detail earlier is the fragmentation of the European research on innovation and science policy; the importance of ethical issues in research for Europeans, and the practices of evaluation explain the management structure and the governing bodies' composition. The network nature of PRIME organisation also sets a number of managerial challenges.

Individual NoE participants can influence the network through self-positioning and learning races. Via networking with other participants, taking part in collective management bodies, and influencing joint projects they can improve their own position in the NoE. Centrality provides information and control benefits (Burt, 1992), while periphery position contributes to the creation of weak ties, exposes the participant to the knowledge flows from different sources and prevents lock-in (Ibarra, 1993). The key question is to what extent self-positioning can be used without harming other NoE members.

Learning races occur in the process of mutual learning through interaction as asymmetrical knowledge and technology exchange, induced by differences in absorptive capacities, and the initial knowledge portfolio of participants (natural reasons), or by participants' opportunism (Dyer and Singh, 1998, p. 666). Opportunism can be the reason behind dissolution of any network or alliance. In this case the management bodies and independent experts should enforce the common standards for intellectual property management and knowledge dissemination. Large part of the so-called "Consortium agreement" – the basic document for NoE, explicitly set by the "Provisions" is devoted to these kind of arrangements (European Commission, 2003b, pp. 15-17). A special committee on ethical issues such as The Standards & Ethics Group at PRIME NoE could supervise and regulate the interaction practices. Evaluation and monitoring system implemented by a NoE is another means to prevent potential opportunistic actions.

At PRIME a formal multidimensional evaluation system has been adopted. This system evaluates integration and excellence dimension through numerous quantitative indicators and qualitative descriptors such as "*Shared data collection principles*" and "*Developing procedures for sharing of equipment and facilities"* (Luukkonen, Barré, Nedeva, 2005, p. 25). Apart from that, it establishes a formal procedure for counting voting rights, that includes involvement of each group (Ibid., pp. 35-37).

Designing and implementing networks of excellence in Russia: the role of social environment and new conceptual approaches

In recent years Russian government recognized the need to advance research and higher education. Among the four government-initiated National Projects was the National Project "Education". Modernization of Russian educational system was declared the aim of the project. Two mechanisms are the cornerstones of this Project. Firstly, excellence leaders are identified and promoted to develop a new quality of education. Second, new education management approaches and concepts are introduced in order to "crystallize" institutional changes. In this context, introducing such instruments as NoEs in Russian higher education and research is an innovative way to advance the quality of education. But it would be crucial for NoEs in Russia and to their 'excellence leaders' to promote the best practice in education.

Whereas European policy focuses on research integration and excellence, in Russia the focus is on education and promotion of modern research methods and scientific concepts. Environmental factors behind this are the general decline of the Russian general and professional education, and a strong need of integration with the European educational system. Similarly to NCEs in Canada, it is also important in Russian context to promote partnerships between business, education and research communities to ensure that knowledge dissemination would have a long lasting impact on business practice.

Last, but not the least, is the divide between science and education in Russia, especially in social sciences and humanities. Only several most developed universities in Moscow and St. Petersburg are

active in research, while most of the research is performed by the state research institutes. Compared to higher educational establishments in Europe, Russian universities tend to concentrate on education at the expense of research. So whereas European programmes aim at research integration, Russian projects aim at modernization of educational system, and this task is even more complex.

In designing a NoE model (hereafter we refer to the network project in Russia as NoE, although it does not meet all of its formal requirements) for Russia we used European NoEs' and virtual communities' management practices, especially practices at the IMP Group. The cases of network arrangements studied allowed understanding how network coordination and value creation mechanisms apply through the joint knowledge creation and dissemination activities. Moreover, the research field of contemporary marketing science, chosen for the NoE design in Russia, is a highly turbulent environment with complex network partnerships. In other words, the context of this NoE in Russia is very dynamic.

Specific barriers for network formation in Russia were already identified at the planning stage, since they created obstacles. Firstly, the narrow approach to marketing as a promotion and selling tool is very widespread in Russia. This explains popularity of a research approach to marketing as a number of functions (for market or customer studies). The facts that the marketing management concept as a customer-driven way of management has been widely accepted in the US and Europe since 1960s, and that the shift in theoretical foundations of marketing science is growing (Tretyak, 2006; Vargo, Lush, 2004) add to the criticality of situation in Russia. Therefore, a gap between marketing theory and practice in Russia and Europe / US is great. Moreover, the level of understanding of the marketing concept in different regions and different universities is quite uneven.

Secondly, the interaction between academia, business, and policy makers is only at the stage of establishment. Quite often the short-term business interests and goals prevail, while consultants, researchers and business leaders in Russia give notice of certain trends that favour adoption of a longer-term orientation in the economy as a whole. It is important that business people who feel their need of design and implementation of new management tools become the 'agents of modernization' in Russia. Examples are partnership programs in relationships of the manufacturers with distribution channels, networks of partnerships for new Western firms establishing Russian presence, supply chain management strategies, business reengineering associated with CRM installation, among others. Practical needs of such nature are not always associated with marketing, but they eventually turn into marketing seminars and training courses.

Taking into account the environmental specificities outlined and the peculiar understanding of the marketing concept in Russia, a hybrid concept was adopted for the model Russian NoE. The interaction between academic, business, and science and education policymaking communities that results in knowledge creation and dissemination lays foundations for the concept. The cases of successful interaction between them exist, but they are rare.

One example of a Russian public-private partnership (PPP) is the RATEK association, created jointly by the leading importers and the Russian Customs Committee (Yakovlev, 2006, p. 256). In describing this case, author emphasized that their recognition of collective concerns, their intention to act collectively in pursuing their goals and their mutual expectations of a fair interaction were the major success factor behind the PPP (Ibid., p. 257). However, the author also states that in 2000-ies such examples were exceptional.

Another study (2001-2004) revealed more intensive interactions of businesses with regional and municipal administration (Ibid., pp. 276-277). Dispute resolution occurred to be one of the most important functions of the local administration in relationships with business (Ibid., p. 277), while the 80% of businesses seemed to provide help to local authorities. The most important forms of such assistance are the sponsorship of the regional and local special-purpose programs (63%); maintenance and repair of schools, hospitals and roads (35%); ownership of houses and community buildings (28%); joint business projects with social targets (14%). Based on this study, prof. Yakovlev concludes that the PPPs are better developed on a regional level. If true, it can be assumed that it the hybrid 'triple helix' NoE concept proposed above can be better implemented on a regional level, because new successful PPPs and other examples of network relationships would emerge in regions.

To illustrate some partnerships of academic and business communities in education and science let us refer to some recent practices at universities in Moscow. The most important ones are the creation of joint chairs in universities by the leading enterprises, joint corporate training programs, course creation jointly with business leaders, creation of steering committees at universities, separate faculties and departments. These are signs of increased collaboration between business and education, and they reveal the need of business people both in human capital investment, and in adoption and implementation of

modern management concepts, and that the potential for collaboration does really exist. Most recently, collaboration practices even involve applied research issues in social sciences (economics, sociology, marketing, etc.): examples are student grants and fellowships, and honorary research fellowships for the leading lecturers.

The decentralized public assistance and networks of public institutions aimed at fostering the development of research and business-academic partnerships are quite widespread. Examples are technological incubation development programmes and Magnet programme in Israel (a programme to support joint research projects between academic and business entities). This means that the role of the policymakers in fostering partnerships is generally high, and thus it is necessary to create NoE in Russia as a platform for collaboration between three communities: science and education, business, and policy. These are rationales for adopting a more complex concept to launch NoE in Russia.

Why interaction marketing as a research agenda?

The fast development pace and the changing paradigms of the marketing science lay foundations for the shift in the understanding of marketing in Russia, require review of marketing tools and search for new methods to design a customer-driven organization. Sometimes, marketing practices are one step ahead of the marketing research. New management solutions emerge without being studied and founded on advances in research. Examples are introductions of customer loyalty campaigns, partner relationship and customer relationship management software and other initiatives.

The individualized customer relations based on modern information technologies and the emergence of the new forms of business organisations result in increased attention of researchers and business people to relationships studies and relationship management concepts. For researchers, the most important among them is the issue of adaptive organisational types, such as network organisations, allowing for direct interactions with customers, and the special features of marketing in networks. As for the businesses, they need knowledge, competencies and skills, and management tools for innovation.

One specific research direction is studying partnership relations and network coordination in value chains. Via such types of coordination firms adopt customer orientation by decoding market signals. The firm's success on a modern global market is not based on its success in certain local markets. Its positioning in the global value chain became much more important in recent decades. Dozens of companies, tied together in value chains globally could be managed effectively via multiple long-term contracts. The creation of such international value chain arrangements contributes to the increasing role of interfirm and interpersonal coordination that does not only end up in selling products.

A number of studies were devoted to value chain emergence, evolution and dissolution mechanisms and principles (Gereffi, Korzeniewicz, 1994; Gereffi, Kaplinsky, 2001). These studies show that globalised value creation does not concentrate in production units. For example, in late 1990-ies the major price components of the fresh vegetables, supplied from Kenia and Zimbabwe to Great Britain were retail store margin (up to 30%), transportation and logistics costs (19-21%), and packing costs (5-13%), while the direct costs of production formed only 12-14% of the retail price (Kaplinsky, 2000). The share of the value added in the fields of marketing, management and technology development increases, the role of design, promotion, brand building and innovation in competitiveness also increases. Success in these fields depends on specialized skills and knowledge; this creates entry barriers and rents of various nature for businesses in these fields – relational rents (Dyer, Singh, 1998) are among the most important.

In this context of promotion of the contemporary marketing theory in Russia as a management imperative, an emerging scientific discipline with strong research traditions and new management tools, it seems essential for a model NoE to establish durable relationships with foreign counterparts: researchers and consultants of firms that have presence in Russia. In this context, experience of the IMP Group deserves special attention.

Russian NoE at a glance: actors, activity bonds, resource ties

Contrary to European Networks of Excellence that were from emergence designed as formal interorganisational networks, the Russian project was designed as an interpersonal one, highly relying on social ties and interactions, and very dependent on the initiative from the part of the "knowledge and administrative centre" at HSE. The project was launched in the year 2006 as cooperation aimed at strengthening Russian research on interfirm networks and partnerships. The project is fully funded by the Russian Government through the Innovative Educational Project at the Higher School of Economics – the new university-wide initiative to sponsor new research and the creation of new teaching courses. The

financial resources available allow only to create an infrastructure for collaboration, and not to conduct research or to launch joint projects.

The network unites more than 30 professors of Management and Marketing from various Russian universities and 20 junior members from 4 countries, including Russia, Denmark, Estonia and Uzbekistan. Nearly all major Russian experts on interfirm networks are the members of this NoE, and the research agenda is thus much wider than the studies in interaction marketing. The incentives for teaching and creating new marketing courses within the network are currently much stronger that the opportunities for conducting research (whereas in most European NoEs the research interests are more important than teaching). Similarly to some European examples (CE-net and ECOLEAD), the Russian NoE is embedded in a virtual research community called Virtass, which embraces more than professors – a half of them are NoE members.

Whereas a European NoE is a formal interorganisational network, the Russian project is an interpersonal network founded on relationships and contacts between researchers. Since the centre of initiative is HSE, the centrality of this network is very high (and is will certainly remain rather high during the first years of the implementation). NoE's centrality in Europe is much lower. The Russian NoE is only at the stage of creation, and it is not well-structured. Being currently an interpersonal network of educators, it plans to turn gradually into a web of regional research centres. The administration centre at HSE aims to gradually integrate individual regional members into regional centres, and to decentralize the initiative in NoE development. To accomplish such a task, it is necessary to find leaders in regions, who would take on responsibility in launching common projects and adopting new research methods, delivered by the members from Europe, Moscow and St. Petersburg. To foster the development of NoE and to achieve a larger scale, it is also necessary to involve employer organisations (universities and businesses) in NoE creation. Currently negotiations on a number of collaboration agreements with universities in Russia, France and the US are initiated to advance joint projects.

The Russian network has been conceived and is being developed as an intersection between two communities: academic researchers and business practitioners. Its primary purpose, the reintegration of fragmented Russian research on one of the most fragmented scientific topics, has to be achieved via the means of popularizing the idea within the business community, thus creating incentives for extensive field research. The key asset to distribute among the members, the excellence in methodology, was (and is) possessed by a few researchers in Moscow in St. Petersburg. Since Russian researchers contribution to research on interaction marketing is limited, the natural success factors of the Russian project is the participation of European scientists and PhD students that provides foundations for access to modern research techniques and practices. The "European ideal" is also the natural focal point of integration of the research agendas, strategies and methodologies. This largely explains the centralization of Russian NoE and the specific balance between teaching and research.

The centralization is crystallized in the governance structure implemented in the project. The network administration, headed by HSE professors is currently the single governing body for the network, responsible for the development of common infrastructure, for coordination of activities, attraction of participants and organisation of common events (conferences and meetings).

Development stages: design and implementation

The first stage identified is the "**Design**" stage. An active group of participants (lecturers, researchers, business people) created interaction infrastructure, based on a multilateral agreement The group took on responsibility to disseminate knowledge on the contemporary state of research in Marketing science and to promote marketing as a modern concept of management. The virtual community formation is initiated by several events: launching common library of studies on marketing, hosting conferences and seminars, creating new Marketing courses. The goal of this stage is to popularize new knowledge, develop common vision and research agenda, and align them with the needs of Russian business reality. The activities at this stage are targeted on the communities of academic people, business people, and on policymakers.

At this stage the Russian NoE administration team faced the inactivity of regional members. The communication barriers proved to be great, since Russian teachers and are not used to real-time interaction with people in different regions, while the practice of virtual communication is not widespread. At the same time, intraregional collaboration that was outlined earlier could form a basis for NoE development. The partnership between education, business and policymakers proved to be more successful on a regional level, thus, it seemed that there would be a large space for collaboration after infrastructure is created.

The increased mutual openness of network members, the readiness to share information and experiences, and to compromise competition signalled the beginning of the second stage of development, namely the "**Implementation**" stage. It involves common creation of Master-level courses and joint PhD in Marketing programmes, joint training for young researchers and the promotion of marketing ideology, its highlights and priority issues, joint research and the launch of working groups, the creation of shared research facilities (databases, research tools, common publications). Two conferences and a volume of publications are already planned as pilot collaboration events.

What could be the future development stages of the Russian NoE? To refer to European experience again, the PRIME Characterization group members (Luukkonen, Nedeva, Barré, 2006, p. 244-245) positioned NoEs in a 2x2 matrix with other types of research organizations and proposed an evolution framework, according to which NoE could in 10 to 15 years become a funding agency, a scientific association, an exclusive scientific club, or a centre of excellence.

	Low barriers, self-registration	**High barriers, restricted entry with formal entry criteria and selection**
Strong incentives in terms of funding	A Funding agency Low degree of integration	*B* *1. Research organization or* *2. World-renown research organisation ('centre of excellence')* High degree of integration
Weak incentives in terms of funding; intangible incentives	*C* *Scientific association* Low degree of integration Wide expansion of membership	*D* *1. NoE or* *2. Exclusive scientific club* By default, low degree of integration

Picture 2. Categorisation of organisation types by incentives and entry barriers. Adapted from (Luukkonen, Nedeva, Barré, 2006, p. 245)

It is important to note that NoE dynamics influence its governance. As PRIME Characterization group members note, "*(a)t the proposal stage, an NoE is a network type of organisation, but when it is stabilised it can develop its internal governance systems so that it becomes a hierarchical organisation*" (Luukkonen, Nedeva, Barré, 2006, p. 251). But during the move towards sustainable integration the NoE centrality is likely to decrease, and its socialisation is likely to increase via sustainable interactions of its members and gradual rise of the importance and scale of the common projects (academic exchanges, PhD and Master courses, etc.).

Should Russian NoE eventually become an interorganisational network? If so, to what extent it would resemble European NoEs? Now we can only think about the most probable alternatives and identify them through current trends.

Firstly, the network's formality has gradually been increasing during years 2006 – 2007. The collaboration plans and initiatives became more documented partly for the purposes of reporting to the HSE, and partly driven by needs of external financing. The need to involve the core organisations (universities, academies, SMEs) is not clear currently, since the scope of the network is not large, while the members are diffused between many organisations. However, the establishment of collaboration documents between participating organisations is being planned, since it would be necessary to launch joint educational programs.

Secondly, the centrality of the network also decreases with growing initiative from regional participants (mainly in organizing joint events, such as conferences) and the growth of their referent people. This means that such options as a 'Funding agency' or a 'Research organisation' are not applicable to the Russian project.

This finally makes us to assume that the NoE in Russia would become a hybrid of two entities: a virtual community and a European NoE. Currently it has some traits of both kinds of organisations, and the context of its development in Russia does not favour any one of the 'original' forms. The level of hierarchy will decrease, with governance mode turning from a hierarchy into a network. The growing initiative from the part of regional centres could become the major driver of development on the next stages. In the long term perspective Russian research on networks and relationships would integrate into the wider European research community.

Conclusions

Networks of Excellence are new innovative forms of research community integration and academy-industry partnership building. They are the means and the result of the common bottom-up European science and technology policy aimed at coordinating research priorities and activities and achieving durable integration of the ERA.

Successful NoEs in Europe are characterized by strong self-management mechanisms and active project groups in the form of Special Interest Groups (VE forum), workshops (PRIME) and the like. Such structured interactions between NoE participants lowers the workload of the governing bodies and stimulates innovation. In turn, this allows the governing bodies to concentrate on standard and priority setting, monitoring and evaluation activities while network participants capitalize on the dispersed leadership potential.

It is hard indeed to make conclusions about emerging phenomenon, but even interim results and some monitoring and evaluation activities are highly relevant and important when launching similar organizational arrangements in Russia.

Further research could potentially focus on comparisons between NoEs and other forms of coordination of the research activities. The analysis of discrete structural alternatives (Williamson, 1991) is necessary to understand if NoE is the best way to achieve "scientific and technological excellence" in a particular case. The excellent example of such an exercise is provided in (Luukkonen, Nedeva, Barré, 2006).

The European experience is highly relevant for NoE design and implementation in Russia. The next steps in our research will investigate in detail the adaptation of European experience in Russia and the emerging management practices.

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