Post-Communist Economies, Vol. 16, No. 4, December 2004

Carfax Publishing
Taylor & Francis Group

Business Innovation in Russian Industry

IGOR GURKOV

Abstract

This article reports the results of a quasi-longitudinal survey of 2,800 top corporate executives of Russian industrial enterprises, presenting a snapshot of current innovation attempts in Russian enterprises and indicating economic and institutional factors that foster or hinder innovation. Russian CEOs see the necessity of profound changes in many areas of enterprise management and are not afraid of such changes, as innovations are perceived to be the best competitive weapon. However, their resources for radical innovation are rather limited. Beside lack of finance, the superimposed narrower strategic focus, the rigidities of local business networks, the weakness of external infrastructure for innovation and the absence of state support seriously impede attempts to implement radical changes. However, in every Russian industry surveyed there is a visible presence of innovative companies, which constitute 15–30% of all large and medium-size companies. Moreover, increasing imports and the growing number of foreign subsidiaries in Russia will continue to push Russian companies towards more intensive changes in all areas of enterprise management.

Since the beginning of 1999 the Russian economy has displayed clear signs of recovery. Stable growth of industrial output, improving living standards of the population and intensified flows of foreign direct investment signify a new stage of economic development. However, the current macroeconomic successes do not guarantee sustainable economic development in the future, which is largely dependent on qualitative transformation of enterprises in order to regain competitiveness in national and international markets. Moreover, while in Eastern Europe on the eve of EU accession companies have clear benchmarks for organisation of business processes, Russian companies continue their search for original development paths.

It is time to look more deeply into changes in local business and management practices, which may sustain the current positive macroeconomic trends. Most changes may be called innovations in the broad sense of 'insertion of new business and management practices within a firm'.[1] Therefore, we decided to examine the current innovative practices of Russian enterprises with respect to two main issues:

Professor Igor Gurkov, Head of the Centre for Organisational Studies, State University—Higher School of Economics, Kochnovsky Proezd 3, Moscow 125319, Russian Federation. Email: gurkov@hse.ru.

This research was supported by a grant from the State University—Higher School of Economics.

ISSN 1463-1377 print/ISSN 1465-3958 online/04/040423-16 © 2004 Centre for Research into Post-Communist Economies
DOI: 10.1080/1463137042000309548

Table 1. Assessment of current situation and performance trends by Russian CEOs (%)

	Survey at the end of 1998	Survey at the end of 2000	Survey at the end of 2002
Current economic situation			
Bad	43.2	16.2	21.0
Satisfactory	48.3	66.8	68.5
Good	8.7	17.0	10.5
Performance trends for the past two years			
Seriously deteriorated	18.9	6.8	6.3
Somewhat deteriorated	36.4	10.5	20.8
No change	20.4	11.4	16.6
Somewhat improved	21.8	51.9	46.3
Significantly improved	2.5	19.4	9.9

- intensity of innovative processes in Russian business in general and in the major Russian industries; and
- important factors in a 'national innovation system' in Russia.

The Empirical Foundation of the Research

In order to trace innovation processes in the economy we conducted a series of large-scale surveys of corporate executives. In October–December 1998 our survey covered 740 CEOs of Russian industrial companies. In October–December 2000 we repeated the survey. This time we collected 735 questionnaires from CEOs. The third survey was carried out in August–October 2002, when we collected questionnaires from 1,431 CEOs. As the sets of respondents differed for each of the surveys we cannot claim our research design to be truly longitudinal. However, as each of the surveys was representative of Russian large and medium-size companies, we decided to report some comparisons between the years of observation. Of course, most of the attention here is devoted to exploration of the data gathered through the survey in 2002.[2]

The Industrial Recovery and New Challenges for Company Management

First of all we asked CEOs to assess the current performance and recent trends in performance of their companies (see Table 1).

We can see that the 'post-recession optimism' of Russian CEOs observed in our 2000 survey had seriously evaporated two years later. Especially significant are the changes in the assessment of recent performance trends. Only 10% of the CEOs surveyed suggested that their companies 'continued their triumphant march of economic performance'. At the same time, the situation had deteriorated for more than a third of the companies surveyed. This may signify that the initial factors behind the economic recovery (falling international competition and intensive import substitution) have ceased to affect Russian enterprises universally. We should also remember that the standards of comparison have changed too. Against an overall positive economic background even slight lags behind competitors may be clearly seen.

Table 2. Distribution of answers on capacity utilisation and orders backlogs, 2002 (% of CEOs)

Capacity utilisation	
Very low	7.7
Insufficient	48.1
Normal	40.4
Excessive	3.8
Orders backlogs	
Very low	7.7
Insufficient	49.1
Normal	39.3
Excessive	3.9

The darker economic situation becomes even more visible if we look into the distribution of answers about current capacity utilisation and orders backlogs (see Table 2).

At the end of 2002 more than 50% of Russian companies in the main industries continued to work with insufficient capacity utilisation, and prospective orders did not change the situation. Of course, capacity utilisation and orders backlogs are closely interconnected (Pearson correlation 0.678; 2-tailed sign 0.000).

The challenges Russian CEOs faced in 2002 may become even more visible if we compare the sets of declared goals. Of course, we should be careful dealing with the self-expressed goals of CEOs obtained through surveys. A great many of the real goals of CEOs may remain hidden from other stakeholders. Sometimes the real goals of their own actions may be obscure even for CEOs themselves. Nevertheless, evaluation of the sets of goals may reflect the patterns of behaviour of corporate decision makers. In addition, the popularity of particular goals within the 'CEO community' is a reflection of expectations of other stakeholders.

We compared the self-reported goals of CEOs through the years of observation (see Table 3).

We may see that the set of declared goals has undergone some dramatic changes over the years of observation. First of all there has been a simplification of the sets of goals. In 1998 two-thirds of Russian CEOs tried to pursue three or more goals simultaneously, while in 2002 the 'field of action' was clear—strengthening their company's position on domestic markets, at any price, with little regard for other,

Table 3. Goals of Russian CEOs (% of CEOs who stressed them)

	1998	2000	2002
Maintaining company's reputation	68	41	36
Strengthening position on domestic markets	66	38	57
Maintaining jobs	63	45	27
World quality of company's products and services	50	54	22
High wages for employees	32	22	22
Overseas expansion	26	12	11
Value maximisation	16	8	8

Note: Respondents might select several 'main goals', so the sum exceeds 100.

Table 4. Perceived level of independence of CEOs surveyed, 2002 (%)

The company is absolutely independent in its actions	57.0
The company is part of a network which coordinates some members' activities	10.1
The company is part of a larger structure that determines strategic decisions	11.1
The company is part of a larger structure that determines both strategic and operational decisions	21.8

more socially acceptable goals like 'maintaining jobs', 'reaching world quality standards' and even 'preserving the company's reputation', became the ultimate preoccupation of a majority of Russian CEOs.

We may speculate about the causes of such a drastic revision of patterns of CEO behaviour. One possible explanation of the narrowing set of goals may be the establishing of tighter external control over the company. Indeed, the CEOs surveyed reported various degrees of external control over their companies (see Table 4).

For a third of the CEOs external control over strategic issues leaves them with the narrow goal of efficient operation within the targeted markets.

We should recall here that innovation might embrace both inexpensive and expensive measures. Whilst creation of new departments, introduction of new forms of personnel appraisal or spin-off of subsidiaries do not usually require intensive investment, other types of radical change, especially development of new technologies, acquisition of other companies and development of new distribution channels, usually require significant investment. In this respect the distribution of companies by the intensity of investment implemented in 2001–02 is quite eloquent (see Table 5).

In general, less than a quarter of the companies surveyed may catch up with the rate of physical depreciation of their assets. More than a half of the companies (in a year of economic growth) made only rudimentary investments.

The data presented in Tables 1–5 enable us to clarify the challenges Russian CEOs face—they must keep their companies in tune with the current positive trends in industry with minimal investment resources and within shrinking possibilities for strategic manoeuvring. Taking into account the factors mentioned, we might expect to see a clear division between completely inert companies (with no investment or innovation) and companies with considerable financial resources. The first aim of the study was to depict how sustainable companies differ in their innovative behaviour. The second aim was to look for the existence of companies that were short on investment resources but capable of orchestrating breakthrough innovative strategies.

Innovation Strategies of Russian Companies: Repertoire of Measures and Innovative Capabilities

We will start our analysis of innovation in Russian companies by reporting the 'spread' and the 'depth' of particular innovations (see Table 6).

Table 5. Intensity of investment, 2001–2002 (% of companies)

No investments	29.4
Less than 5% of fixed assets	29.8
Between 5 and 10% of fixed assets	18.2
Between 10 and 20% of fixed assets	8.9
More than 20% of fixed assets	13.6

Table 6. 'Spread' and 'depth' of particular innovations (% of CEOs who reported the innovation being implemented in their firm in 1999–2002)

	Did not happen in 1999–2002	To minimal extent	To some extent	To great extent
New products in core business area	***20.1***	14.6	41.2	***24.1***
New products in a new business area	***36.3***	20.1	30.3	***13.3***
New technology (processes)	***19.1***	23.6	41.4	***15.9***
New methods of quality control	***39.2***	19.6	22.6	***18.6***
Introduction of GAAP standards	***47.3***	25.5	20.3	***7.0***
New systems of managerial accounting	***9.5***	20.5	40.6	***29.4***
New methods of project financing	***32.4***	27.6	29.7	***10.2***
New Russian business partners	***15.8***	23.3	44.8	***16.2***
New foreign business partners	***49.4***	22.5	22.7	***5.4***
New distribution channels	***18.0***	31.3	40.5	***10.2***
New forms of recruitment	***33.5***	37.5	24.9	***4.0***
New forms of performance appraisal	***29.8***	33.5	29.4	***7.4***
New forms of wage and benefit administration	***10.5***	28.0	42.9	***18.7***
Creation of new departments	***37.6***	19.9	28.0	***14.5***
Spin-off of subsidiaries	***68.1***	12.7	12.6	***6.6***
Acquisition of other companies	***87.6***	4.8	4.5	***3.1***

We can see that, although the spread of innovations in Russian industries is quite significant, the real depth of innovations is rather limited. The core 'innovation engine'—technologies—has experienced considerable changes in only 16% of the companies surveyed. Significant product innovations were reported in a third of the companies.

It is not surprising that the proportion of companies which experienced radical changes in technologies and product mix was small. On the basis of the data on investment we did not expect the proportion of active innovators in those areas to be more than 15–20%. The real surprise was that the majority of Russian industrial companies strive to implement changes in technologies, marketing and human resource management. More than 40% of CEOs indicated some changes in technologies, distribution channels and wage administration. More than 30% of CEOs reported limited attempts to diversify their businesses beyond the traditional market areas.

We may conclude that, despite very limited investment, the majority of Russian CEOs has some 'fresh experience' in innovation. Therefore, their opinions about the difficulties or easiness of particular actions related to innovation should be taken seriously (see Table 7).

To get financing for a new project and to master the (new) distribution channels are the most difficult stages of any innovation process in Russia. More than 30% of CEOs found such actions to be extremely difficult. The share of CEOs who found the financial and marketing issues 'easy' is quite small—and much smaller than the share of companies that invested intensively over the past two years. Other difficult issues are

- synchronisation of the work of suppliers;
- promotion of a new product;
- recruiting additional labour;
- obtaining the necessary government licences.

Table 7. Innovative capacity of companies (% of CEOs)

Action	The factor is not applicable to our business	The factor is applicable, and the action is… Easy	Not too difficult	Extremely difficult
To obtain finance for a new project	6.8	6.4	42.9	50.7
To get access to new technology	12.9	39.6	45.6	14.8
To recruit labour with necessary qualifications	3.6	26.1	51.6	22.3
To change the job descriptions and requirements of managers and workers	6.1	58.6	38.2	3.9
To harmonise the work of different departments	6.3	48.4	46.9	4.7
To control the budget of the innovation project	9.8	70.8	26.5	2.7
To determine customers' preferences for specifications of products (services)	10.3	45.5	47.3	7.2
To design a new product according to the specifications	18.6	19.9	68.4	11.6
To reach the required quality level	6.1	12.1	69.8	18.1
To reach the necessary level of technological discipline	6.6	21.4	68.8	9.7
To synchronise the work of suppliers and distributors	22.6	18.5	54.2	27.3
To set the optimal price for a new product	7.4	43.9	45.6	10.5
To reach understanding with producers of similar products	17.3	23.2	44.2	32.5
To obtain the necessary government licences and certificates	7.9	23.2	53.8	23.0
Initial promotion of a new product	15.3	11.3	61.1	27.6
To create (to master) new distribution channels	11.0	10.3	59.6	30.0
To get contacts with informal structures	52.0	35.2	51.4	13.4

We should recall that most of the CEOs surveyed managed large and medium-size companies. At the same time, the list of the 'most difficult issues' is quite similar to problems small companies face in developed countries. This signifies the 'youthfulness' of the Russian business infrastructure. Not product design and quality requirements but orchestration of the work of external business partners (suppliers, distributors etc.) presents the most challenging tasks for the majority of Russian companies.

We also could not disprove completely the popular opinion about Russian business as being 'crooked' and 'collusive'. On one hand, the majority of the CEOs surveyed rejected 'establishing contacts with informal structures' as a factor that was relevant to their businesses. On the other hand, 'reaching an understanding with competitors' was a relevant factor in innovation activities for more than 80% of the CEOs. For a third of them, to reach such an understanding was quite a difficult task.

Table 8. Comparison of clusters by intensity of changes (% of companies in each cluster that experienced significant changes in particular area of management)

Area of changes	Cluster 1	Cluster 2	Cluster 3	Cluster 4
New products in the core business area[a]	37.2	93.4	88.0	21.8
New products in a new business area[b]	11.7	73.8	62.5	6.3
New technology (processes)	38.1	91.1	67.3	18.5
New methods of quality control	41.6	77.5	27.3	5.0
Introduction of GAAP standards[c]	35.1	50.6	11.6	10.5
New systems of managerial accounting	82.3	89.7	66.2	30.3
New methods of project financing	51.5	76.8	26.5	5.5
New Russian business partners	73.6	82.7	62.5	19.3
New foreign business partners	37.2	51.3	17.1	5.0
New distribution channels	58.0	79.3	44.7	17.2
New forms of recruitment	38.5	58.7	14.9	5.0
New forms of performance appraisal	51.9	67.5	19.6	8.0
New forms of wage and benefit administration[d]	76.2	83.4	57.1	26.1
Creation of new departments[e]	51.5	76.8	24.7	17.2
Spin-off of subsidiaries[f]	29.9	34.7	8.7	7.1
Acquisition of other companies[g]	6.9	15.1	2.5	3.4
Equity issues[h]	12.6	19.9	6.9	3.4
Number of companies in each cluster	*231*	*271*	*275*	*238*

Note: all clusters are statistically different on Duncan's criterion at 0.05 level unless otherwise stated.
a. Cluster 2 and Cluster 3 are not statistically different.
b. Cluster 4 and Cluster 1 are not statistically different.
c. Cluster 3 and Cluster 4 are not statistically different.
d. Cluster 1 and Cluster 4 are not statistically different.
e. Cluster 3 and Cluster 4 are not statistically different.
f. Cluster 1 and Cluster 2 are not statistically different; Cluster 3 and Cluster 4 are not statistically different.
g. Cluster 2 differs from Cluster 1, Cluster 3 and Cluster 4, which are not statistically different.
h. Cluster 3 and Cluster 4 are not statistically different.

Typology of Innovators

Any typologies of enterprises by size and industry membership are artificial. Nevertheless, to reach the goals of our study we performed a cluster analysis to distinguish between various types of companies in terms of the reported intensity of innovations implemented. The cluster analysis identified four clusters. Each cluster was comparable in the number of companies it contained. Next we compared the clusters by the percentages of CEOs in each cluster who indicated 'some or significant changes' in each area of enterprise management mentioned (see Table 8).

All clusters show statistically significant differences in most of the areas identified. Cluster 1 contains companies that are preoccupied with marketing innovations and changes in human resource management practices. Almost 75% of companies in Cluster 1 have established contacts with new Russian business partners; more than half are establishing new distribution channels. Such changes in marketing are coupled with a search for new organisational forms (establishing new departments and spin-off of subsidiaries) and experimentation in wage and benefit administration.

Companies in Cluster 2 may be called truly innovative companies (Russian-style)—they surpass other clusters by the intensity of changes in any area of enterprise management. Most of the companies in Cluster 2 were involved in product innovations both within and beyond their core business areas. What is even more

Table 9. Interconnections between significant changes in enterprise management and environmental economic and institutional factors (Pearson's correlations)

	Dependence of firm in business decisions[a]	Share of exports in sales in 2001[a]	Position of Russian producers in firm's targeted markets[a]	Position of Russian firms with foreign partners in firm's targeted markets[a]	Position of firms from EU, USA and Japan in firm's targeted markets[a]	Ability to predict changes in state economic polices[a]	Ability to predict changes in behaviour of local authority[a]	Impact of local authorities[b]	Impact of state economic policies[b]
New products in the core business area	−0.155*	0.010	0.029	0.110**	0.176**	0.059*	0.068*	0.075*	−0.009
New products in a new business area	−0.126*	0.004	−0.041	0.079**	0.118*	0.003	−0.024	0.007	−0.009
New technology (processes)	−0.036	0.118**	0.039	0.104**	0.136*	0.147**	0.081**	0.039	0.036
New methods of quality control	0.034	0.190**	0.090**	0.072*	0.156*	0.101**	0.105**	0.092**	0.027
Introduction of GAAP standards	0.170*	0.084*	0.049	0.095**	−0.005	0.101**	0.032	0.001	0.013
New systems of managerial accounting	0.058	0.066	0.013	0.056	0.051	0.126**	0.033	0.009	0.017
New methods of project financing	0.033	0.169**	0.033	0.118**	0.088*	0.140**	0.043	0.040	0.059
New Russian business partners	−0.091*	0.021	0.114**	0.096**	0.068*	0.110**	0.083**	0.047	0.005
New foreign business partners	−0.071*	0.352**	0.002	0.136**	0.242*	0.120**	0.116**	0.032	−0.008
New distribution channels	−0.015	0.101*	0.117**	0.134**	0.115*	0.107**	0.066*	0.056	−0.003
New forms of recruitment	0.022	0.044	0.074*	0.073*	0.036	0.095**	0.047	0.032	0.098**
New forms of performance appraisal	0.065	0.052	0.041	0.079	0.058	0.117**	0.075*	0.019	0.075*
New forms of wage and benefit administration	−0.043	0.077*	0.063*	0.062	0.062*	0.063*	0.042	0.008	0.023
Creation of new departments	0.012	0.068	0.002	0.075*	0.087*	0.087**	0.015	0.009	0.033
Spin-off of subsidiaries	0.022	0.082*	0.024	0.017	0.112*	0.053	0.031	0.019	−0.004
Acquisition of other companies	−0.056	0.113**	0.031	0.102**	0.058	0.063*	0.064*	0.017	0.041
Equity issues	−0.021	0.094**	0.027	0.053	0.036	0.005	0.024	0.050	0.080**

Measure	Ability to predict changes in competitive situation[a]	Presence of the state as a significant share-holder[c]	Presence of employees as significant share-holders[c]	Presence of foreigners as significant share-holders[c]
New products in the core business area	0.077*	− 0.096**	0.040	0.018
New products in a new business area	0.079**	0.005	0.042	− 0.020
New technology (processes)	0.146**	− 0.056	0.029	0.074*
New methods of quality control	0.104**	− 0.008	− 0.059	0.151**
Introduction of GAAP standards	0.103**	0.061*	− 0.064*	0.161**
New systems of managerial accounting	0.168**	0.022	− 0.086**	0.077*
New methods of project financing	0.156**	− 0.010	− 0.070*	0.128**
New Russian business partners	0.175**	− 0.016	− 0.012	− 0.011
New foreign business partners	0.135**	− 0.057	− 0.008	0.056
New distribution channels	0.220**	− 0.073*	0.033	0.057
New forms of recruitment	0.117**	− 0.012	0.017	0.103**
New forms of performance appraisal	0.081**	− 0.015	− 0.013	0.119**
New forms of wage and benefit administration	0.108**	− 0.029	0.007	0.090
Creation of new departments	0.140**	− 0.026	0.012	0.036
Spin-off of subsidiaries	0.064*	− 0.025	− 0.006	0.058
Acquisition of other companies	0.080**	− 0.080**	0.063*	0.029
Equity issues	0.069*	− 0.035	− 0.051	0.135**

* Significant at 0.01 level.
** Significant at 0.001 level.
Note:
a – the 5-point scale used was 1 = minimal, 3 = some, 5 = significant.
b – the 5-point scale used was − 2 = significantly negative, 0 = no influence, 2 = significantly positive.
c – the 2-point scale used was 0 = no such owners with more than 25% of the company's stock, 1 = such owners with more than 25% of the company's stock are present.

important is that companies in Cluster 2 were implementing new technologies coupled with introduction of ISO standards. Cluster 2 was also active in marketing, finance and human resource management.

Cluster 3 consists of companies with a high level of changes in both products and technology. At the same time, they neglect quality control and are quite cautious in transformation of organisational structures, finance and human resource practices.

Finally, Cluster 4 represents the most passive companies in our sample. They are lagging far behind other clusters in intensity of changes. Generally speaking, such companies experienced only cosmetic changes in product mix over 2000–02.

It is important to stress here that the intensity of investment does not serve as a uniform predictor for cluster membership. True, 74% of companies in Cluster 4 had made investments in 2000–02 equal to less than 5% of their fixed assets. At the same time, the proportion of companies with such a low level of investment was 60% in Cluster 1, almost 44% in Cluster 2 and 63% in Cluster 3, while companies in all these clusters demonstrated steady attempts to innovate.

We also compared the distribution of the clusters we identified within the main Russian industries. The presence of Cluster 2 was most significant in metallurgy (46% of the companies), electronics (38%) and machine-building (33%). The most inert Russian industries were textiles (33% of the companies in that industry belonged to Cluster 4) and construction (26%). Some Russian industries are quite heterogeneous in terms of innovation: for example, in the timber industry 31% of companies belonged to Cluster 2 ('innovators') and 34% to Cluster 4.

The data suggest that in many Russian industries (like the timber industry) there is a visible discrepancy between innovative and inert companies. This signifies that industry-wide factors do not exhaust the causes of innovative behaviour. Therefore, we looked into other plausible factors behind the innovation strategies of Russian companies.

Economic and Institutional Determinants of Innovation Strategies

Most studies of innovation stress competitive pressure as the main driver towards both technical and organisational innovation.[3] At the same time, institutional factors, including ownership structures and government policies, also serve as important moderators in shaping particular company innovation.[4] We therefore drew up a list of interconnected factors, including competitive pressure, the influence of particular owners, the actions of government and local authorities and the subjective characteristics of top managers. In order to examine the influence of each of the factors mentioned on the intensity of significant changes in Russian firms we performed a series of correlation analyses to look for significant correlations between various factors and the presence of significant changes in particular areas of enterprise management (see Table 9).

The Impact of Competition

Here we may stress three important issues. First, the level of competition is positively correlated with the intensity of changes in some areas, especially in creation of new products in new business areas (corr. 0.086). Second, the structure of competition also plays an important role. If Russian firms dominate the targeted market areas, there are no specific stimuli for product and technology innovation. When the targeted markets are dominated by Russian firms with foreign partners or,

Table 10. Cross-tabulation of 'perceived impact of government economic policies' and 'ability to anticipate changes in government economic policies'

			Ability to anticipate changes in government policies					
			Absolutely impossible	Very difficult	Sometimes possible	Possible	Easy	Total
Impact of economic policies government	Very Negative	% within Impact of government policies	12.1	22.4	34.5	19.8	11.2	100.0
		% within Ability to anticipate changes	16.3	16.1	9.5	7.3	10.2	10.5
	Negative	% within Impact of government policies	7.3	14.0	41.5	27.2	10.1	100.0
		% within Ability to anticipate changes	44.2	45.3	51.7	45.4	41.7	47.2
	No influence	% within Impact of government policies	11.5	16.7	36.8	26.3	8.6	100.0
		% within Ability to anticipate changes	27.9	21.7	18.3	17.6	14.2	18.9
	Positive	% within Impact of government policies	3.3	9.9	34.3	36.0	16.5	100.0
		% within Ability to anticipate changes	9.3	14.9	19.8	27.8	31.5	21.9
	Very positive	% within Impact of government policies	11.8	17.6	17.6	35.3	17.6	100.0
		% within Ability to anticipate changes	2.3	1.9	0.7	1.9	2.4	1.5
Total	% within Impact of government policies		7.8	14.5	37.9	28.3	11.5	100.0
	% of total		7.8	14.5	37.9	28.3	11.5	100.0

especially, by producers from developed countries, the drive towards product innovation and installation of new technologies becomes clearly visible. The presence of competitors from foreign countries also drives Russian companies towards establishing new contacts with foreign business partners (corr. 0.242). We may conclude that the structure of competitors plays a more important role than simply the share of exports in sales. A rise in exports as a proportion of total sales of a Russian company does indeed coincide with establishment of contacts with new foreign partners (corr. 0.352) and implementation of new methods of quality control (corr. 0.190), yet it strongly impedes changes in product mix.

We also should stress here that not just the structure of competition but also the ability of the top management to foresee changes in the competitive landscape drives a company towards intensive changes in business practices. Early forecasts of changes in competitive conditions coincide with intensive changes in distribution networks (corr. 0.220), establishment of contacts with new Russian and foreign business partners (corr. 0.175 and 0.135 respectively) and installation of new technologies (corr. 0.146). This means that innovation plays not only a reactive but also a pro-active role in enterprise management. Russian companies use innovation to prepare for anticipated changes ahead of competitors.

Institutional Factors

Institutional factors also play a substantial role in reshaping the innovation practices of Russian companies. First, we may conclude that lower independence in strategic decisions coincides with a lower degree of change in product programmes (corr. -0.155). Companies in subordinate positions (they may be not subsidiaries of other companies in legal terms but they occupy minor positions in business networks) are not inclined to change business partners, Russian or foreign alike (corr. -0.091). Second, the structure of ownership is also a significant factor. The presence of state and employee ownership coincides with a low degree of innovativeness (most correlations are negative). On the other hand, the presence of foreign owners pushes companies towards more changes in accounting, quality control and new methods of recruitment and personnel appraisal.

However, the most striking results relate to the impact of government policies. There are almost no significant correlations between the perceived impact of government economic policies and the level of changes in particular areas of enterprise management. The same is true for the impact of local authorities. At the same time, CEOs who claim that they can predict changes in government economic policies are inclined to orchestrate more intensive changes in almost all areas of enterprise management (all correlations are positive).

To look more deeply into this issue we performed a cross-tabulation of CEOs' answers about the assessment of government policies and perceived ability to anticipate changes in these policies (see Table 10)

Although the overall assessment of government policies remains negative (almost 58% of the CEOs surveyed saw the impact of government policies on their companies as 'negative' or 'strongly negative'), there is a positive correlation between two items.[5] When assessments of government policy were better the beliefs of CEOs that they were able to anticipate changes were stronger. We may conclude that the current government economic policies in Russia are neutral towards innovation at the company level. At the same time, as in the case of competition, innovations are measures to respond pro-actively to changes.

Discussion

Let us first summarise our main findings:

1. The economic situation in Russian industries has significantly improved since 1999, but the majority of the CEOs surveyed assessed the capacity utilisation and order backlogs of their companies as unsatisfactory.
2. The economic recovery did not result in massive investment in fixed assets: 78% of the companies surveyed did not invest enough over the past few years to cover the simple depreciation of assets.
3. CEOs of Russian companies lost a substantial amount of their independence in strategic decision making over recent years, as a growing number of previously independent companies became subsidiaries or minor partners in business networks. The lack of independence narrowed the goal sets of Russian CEOs towards clearly identified, presumably quantified goals of maintaining positions on relevant markets.
4. Despite their limited resources and the deteriorating conditions for strategic manoeuvring, the majority of Russian companies continues active innovation attempts. The innovation clusters identified are not concentrated in particular industries. We found 'active innovators' in every industry surveyed. Moreover, the proportion of 'active innovators' greatly exceeds the proportion of 'active investors' in our sample. This means that most of the changes in enterprise management were implemented as 'routine improvements', without establishing special investment programmes.
5. Regarding the capacity for innovation, inter-firm coordination remains the most difficult part of the innovation process. The undeveloped business environment forces large and medium-size Russian companies to exhibit some 'youthful' traits that are more characteristic of small family businesses in developed countries.
6. Competition with foreign companies, including with Russian subsidiaries of multinational firms, remains the major impetus for product and technological innovation. Innovations play both reactive and pro-active roles in company development, as they are used as defensive weapons against anticipated changes in the competitive landscape of firms.
7. Government economic policy in Russia in 2000–02 could be characterised as neutral to innovation activities at company level. However, innovations also play a pro-active role here in order to escape or mitigate the consequences of particular government measures.

In general, our findings depict a very specific 'national innovation system' (in the OECD's terms)—there are strong impetus to innovate and many micro-changes at enterprise level, but Russian companies are struggling to overcome the rigidity of business networks. Lack of choice in selection of suppliers and distributors and the absence of external finance (in the form of either equity injections or long-term credits) seriously impede innovation. In addition, there is no clear government agenda regarding innovation policies at enterprise level. The neutrality of government policy towards innovation may be seen as a good sign, as the overall assessment of government policies is negative, but such neutrality also means lack of support for active innovators.

The picture presented raises questions about the possible ways for 'dynamising' the Russian innovation system. Direct government intervention (including direct

state aid, preferences, national programmes) may have little positive effect, taking into account the experience of direct 'innovation contracts' and 'special programmes' implemented by the Russian government in the 1990s.[6] In recent budgets the Russian government has been trying to reduce the number of government programmes in industries, as most of them have proved to be a waste of resources.

Indirect measures like promotion of local and national innovative clusters[7] may have potentially greater effect in overcoming rigidities impeding innovation. For example, in Ukraine the government is currently busy creating such 'innovative clusters' at the regional level. However, we should remember that a growing number of Russian companies are placed in subordinate positions within newly created industrial empires centred on a few major export-oriented companies, and we have seen that the inclusion of an enterprise in such structures greatly decreases its chances to establish contacts with new business partners. Meanwhile, the centres of those business empires—large export-oriented companies—limit their own innovation repertoire to better methods of managerial accounting and tighter quality control.

Conclusions

We presented a snapshot of current innovation attempts in Russian enterprises, based on the answers of over a thousand CEOs. In general, Russian CEOs see the necessity of profound changes in many areas of enterprise management and are not afraid of such changes, as innovation is perceived to be the best competitive weapon. However, the resources for radical innovation at Russian CEOs' disposal are rather limited. Beside the lack of finance, the superimposed narrower strategic focus, the rigidities of local business networks, the weakness of external infrastructure for innovation and the absence of state support seriously impede any attempts to implement radical changes.

The wave of changes we observed in 2000 in export-oriented companies[8] is over (with some exceptions in metallurgy, which exploited its full export potential a bit later). Besides, large export-oriented companies are unable to serve as innovative locomotives for the business networks assembled around them.

However, the picture is not totally grim. In every Russian industry surveyed there is a visible presence of innovative companies, which constitute 15–30% of all large and medium-size companies. Moreover, increasing imports (the growth of imports was around 22% in 2003) and the growing number of foreign subsidiaries in Russia will continue to push Russian companies towards more intensive changes in all areas of enterprise management.

Notes

1. We adopt a very broad definition of business innovation. This does not contradict the established tradition in the management literature, which suggests indissoluble links between technological, product and organisational innovations; see S. Myers & D.L. Marquis, *Successful Industrial Innovation* (Washington, DC, National Science Foundation, 1969); R. Normann, 'Organizational Innovativeness: Product Variation and Reorientation', *Administrative Science Quarterly*, 16, 1971, pp. 203–215; D.F. Mighly & G.R. Dowling, 'Innovativeness: The Concept and its Measurement', *Journal of Consumer Research*, 4, 1978, pp. 229–242; M.L. Tushman & P. Anderson (eds), *Managing Strategic Innovation and Change* (New York, Oxford University Press,

1997); M.L. Tushman & C.A. O'Reilly III, *Winning Through Innovation* (Boston, Harvard Business School Press, 1997); N. Alter, *L'Innovation Ordinaire* (Paris, PVF, 2000); J. Tidd, J. Bessant & K. Pavitt, *Managing Innovation: Integrating Technological, Market and Organizational Change*, 2nd edn (New York, John Wiley & Sons, 2001).

2. English versions of the questionnaires together with the technical justification (reliability coefficients for scales etc.) are available from the author. The original Russian versions of the questionnaires used in 1998–2002 were published in I.B. Gurkov, *Innovatsionnoe razvitie i konkurentosposobnost': Ocherki razvitiya Rossiiskikh predpriyatii* (Moscow, Theis, 2003).
3. See for example F. Damanpour, 'Organizational Innovation: A Meta-Analysis of Effects of Determinants and Moderators', *Academy of Management Review*, 34, 3, 1991, pp. 555–590; Y. Doz & H. Thanheiser, 'Regaining Competitiveness: A Process of Organizational Renewal', in J. Hendry & G. Johnson (eds), *Strategic Thinking: Leadership and the Management of Change* (New York, John Wiley & Sons, 1993); R.T. Frambach & N. Schillewaert, 'Organizational Innovation Adoption. A Multi-level Framework of Determinants and Opportunities for Future Research', *Journal of Business Research*, 55, 2, 2002, pp. 163–176; S. Gopalakrishnan & F. Damanpour, 'A Review of Innovation Research in Economics, Sociology and Technology Management', *Omega: The International Journal of Management Science*, 25, 1, 1997, pp. 15–28; K. Strandholm, K. Kumar & R. Subramanian, 'Examining the Interrelationships Among Perceived Environmental Change, Strategic Response, Managerial Characteristics, and Organizational Performance', *Journal of Business Research*, 57, 1, 2004, pp. 58–68; D.J. Teece (ed.), *The Competitive Challenge: Strategies for Industrial Innovation and Renewal* (Cambridge, MA, Ballinger, 1987); Tushman & O'Reilly, *Winning Through Innovation*.
4. Arthur D. Little, *The Innovative Company: Using Policy to Promote the Development of Capacities for Innovation*. Final Report to Participating Governments (OECD NIS Project, Cambridge, UK, 2001); M.A. Delmas, 'Innovating Against European Rigidities: Institutional Environment and Dynamic Capabilities', *Journal of High Technology Management Research*, 13, 2000, pp. 19–43; S.H. Hung, 'Institutions and Systems of Innovation: an Empirical Analysis of Taiwan's Personal Computer Competitiveness', *Technology in Society*, 22, 2000, pp. 175–187; B.E. Lundvall & L.J. Christensen, 'Extending and Deepening the Analysis of Innovation Systems—with Empirical Illustrations from the DISCO-project', DRUID Working Paper No. 99–12, Copenhagen, 1999; B. Lundwall (ed.), *National System of Innovation: Towards a Theory of Innovation and Interactive Learning* (London, Pinter, 1992); R. Nelson, *National Systems of Innovation: A Comparative Analysis* (Oxford, Oxford University Press, 1993); OECD, *Dynamising National Innovation Systems* (Paris, 2002); OECD, *Managing National Innovation Systems* (Paris, 1999); J. Suh, 'Korea's Innovation System—Challenges and New Policy Agenda', INTECH Discussion Paper No. 2004, Maastricht, 2000.
5. Directional measure Somer's d is 0.109 for 'ability to anticipate changes' as dependent variable and 0.101 for 'impact of government policies' as independent variable; both measures are significant at 0.000 levels.
6. We may compare the tone of government officials on such programmes in the mid-1990s (see V. Kossov & I. Gurkov, 'The System of Management of the National Economy in Modern Russia', *International Studies of Management and Organization*, 25, 4, 1995, pp. 8–26) and at the beginning of 2001 (see Ministry of Industry, Science and Technology of the Russian Federation, 'The Role of the State in Creating a Favorable Innovative Climate in Russia', in OECD, *Bridging the Innovation Gap in Russia*. Proceedings. The Helsinki Seminar (Paris, OECD, March 2001)). The optimism of early innovation programmes has evaporated completely; Russian government officials nowadays prefer to blame 'inert Russian companies'.
7. See *Innovative Clusters: Drivers of National Innovation Systems*. OECD Proceedings

(Paris, OECD, 2001); *Innovative Networks: Co-operation in National Innovation Systems*. OECD Proceedings (Paris, OECD, 2001).

8. See I. Gurkov, 'Management Innovations in Russian Export-Oriented Companies: The Results of Large-Scale Surveys in Enterprises', in K. Liuhto (ed.), *Ten Years of Economic Transformations* (Lappeenranta Institute of Technology, August 2001), pp. 295–311.