

EVOLUTION OF MINERAL RESOURCES STRATEGIC MANAGEMENT IN RUSSIA AND ELSEWHERE

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ABSTRACT

The main objects, dealt with in this publication, are structurally manifold and functionally diversified economic complexes of various sizes and affiliations, engaged in industrial and commercial operations with mineral resources (MRs) – their exploration, mining, processing, marketing, delivering to consumers, and, ultimately, subjecting to all sorts of scientific studies. With respect to these industrial MRs objects (MROs), two discussed major closely intertwined ‘backbones’ are: (1) their structural composition, which at varying adequacy levels are reflected in mutually competing theoretic and applied scientific conceptions, and (2) steadily advancing, but often conspicuously incoherent methodologies and practices of these objects’ strategic management, applied by particular countries and transnational corporations.

Information basis for the study was compiled upon the legacy of Russia and the former USSR, where strategic projects’ elaboration and realization, involving among others mining industries, are being carried out at least since the mid XIX century. Concerning other countries, prime attention was devoted to those that insignificant amounts possess, mine, process, and industrially utilize MRs – Australia, Canada, China, India, SAR, USA, et al. Owing to three-decades-long in-depth studying and monitoring of MROs’ functioning and development, certain sets of regularities and steady tendencies were discerned. Besides, a ranked set of theoretic and applied concepts was elaborated, to some extent summarized herein.

Keywords: *economic strategy, mineral resources management, rational minerals husbandry, social and economic structure, market or plan-oriented economies.*

INTRODUCTION

Valuable raw materials, extracted in huge quantities from the Earth’s crust (not quite adequately called in Russian ‘Earth Bowels’), as well as from its surface and water objects, are one of a few major industrial resources and commercial assets of the modern World’s economy. To attain possession and disposing capacities over natural MRs, belonging to sovereign states, their governments are sometimes deliberately overthrown by self-proclaimed ‘world’s dominant market actors’. For the same reasons even prospering nations are one by one virtually levelled to the ground, imposing enormous miseries and losses to their populations. It is no wonder therefore that unceasing struggle for MRs, waged between countries and

corporations, has its logical projections also within scientific conceptions being created and persistently propagated, more so in countries leaning to vigorously competing socio-economic systems.

Subsequent discussion is structurally arranged according to a quite obvious and logical watershed narrative. In particular, Russia is rendered there as a country, based initially (until Nov. 1917) on a typically Market-Oriented Economy (MOE). In 1917–1991 period, it went through several substantially different stages of predominantly Plan-Oriented Economy (POE) configurations, often (in Western countries – almost exclusively) indiscriminately labeled as ‘socialist’ or even ‘communist’. After only a decade-long, but disastrous for the country 1990s period of reckless compliance to Western obtrusively imposed ‘recommendations’, Russia resolutely changed its socio-economic development course and both tenaciously seeks and actively forges its unique path within some most adequate for the country and up-to-date Socially Oriented Balanced Economy (SOBE) versions.

As the study convincingly shows, similar ‘swaying motions’, although not so dramatic and lengthy, occur with some unstable regularity among other MRs-endowed countries, including most MOE-admiring of them. Hence, described above classification scheme is not always readily and invariably applicable to all compared countries or corporations. In addition, it should be taken into account, that mining industries have multiple interconnections with other economic sectors. All that justifies presented below examples of those widely known Strategic Management Programs, which do not strictly qualify for chosen categories.

RECENT EXPERIENCE OF RUSSIA AND ITS CLOSE PARTNERS

Trans-Siberian Railway. Russia is one of a few major countries that possess considerable amounts of natural resources, including MRs. No wonder that at accelerating intensity it explores, extracts, processes, as well as industrially and commercially utilize them.

Appreciably large-scale industrial mining operations were first kicked off in the Russian Ural Mountains area more than three centuries ago. Since then such activities are sequentially spreading across other regions. Back in XIX century, the roles of such newcomers acquired Siberia and Russian Far East (RFE) – regions, lavishly endowed by rich although poorly explored natural resources. Besides, these regions were spatially separated from the country’s most populated and economically developed parts by vast distances void of almost any transport facilities.

At 1857, Governor-General of Eastern Siberia N.N. Muravyov-Amurski expressed very bold for that time idea of huge railway line construction, which would facilitate Siberian region’s economic and demographic development, as well as help to solve none-the-less important defensive and geopolitical tasks. Because of financial and technical difficulties, only in 1873, when the Ural Railway Company was created to link iron and coal rich Ural mines with central regions, Russian government started real work on the Trans-Siberian Railway strategic project [1].

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Widely known as Transsib, this project demonstrated its visible positive effects on Siberia's economy by the first years of XX century. An increasing number of Siberian inhabitants from 4.6 million to 7.6 and of the inhabitants of the RFE areas from 0.9 to 1.6 million between 1897 and 1914 was to great extent also results of Transsib's role in the booming of the Siberian economy. The proximity of the railway created favorable conditions for coal mining and processing industries. Rising urbanization created dozens of cities and hundreds of small towns. Toward 1950s, Transsib changed into a real pathway for a modern economy. Energy and transport-intensive industries, such as aluminium and non-ferrous metallurgy, steel manufacturing, heavy chemical industry, created a chain system along the Transsib line [2].

Transsib 1st stage commissioning was widely appraised. After Paris's 1900 World exhibition, excited discussion unrolled in the press about Siberian Highway. The Frenchmen exaltedly stressed the astonishing energy and persistence with which Russians realized their grandiose construction. Englishmen stressed the strategic significance of a new road and its impact on West European maritime commerce. Americans traced Transsib usefulness in the vitalization of vast and rich Siberia, which by itself excited envious and enterprising Americans' interest. German newspapers highlighted Highway's cultural significance, which they discerned in ensuing RFE's "Europeanization". All of them were right in their own way, because in Siberia's economic and cultural life a new epoch began [3].

Transsib endeavor became factually one of Russia's first strategic megaprojects aimed at all-embracing territorial development. As its offspring, the Baikal-Amur Mainline (BAM) initiated in 1970, was positioned by the Russian government. Precursors and supporting pillars for such projects' successful fulfillment, found in the country's near history, were qualified personal; profound pre-project research and forecasts; combinations of both 'plan plus market' (PPM) and 'public-private partnership' (PPP) mechanisms; high transparency standards for major managerial operations; control of all project stages on the part of main stakeholders; managerial functions concentration in hands of a single authority, capable to adopt necessary decisions irrespective of existing bureaucratic barriers, etc. [4].

Alongside with multiplicity of enthusiastic assessments, according to various specialists' and observers' evaluations Transsib hitherto not acquired transnational and global significance that was presupposed even prior to project's initiation. Among immediate causes of such improper situation were several wars, revolutions outweighed by their reversals, as well as the Soviet Union long-term isolation from the World's economy. In fact, since the moment of its emergence, Transsib was largely excluded from the World economy as its highly promising part [3].

Plan GOELRO. As is typically believed, Russia joined a virtual club of market-oriented economies (MOE) later than the United States and some European countries and because of that significantly lagged behind in terms of some major characteristics. Being endowed with huge amounts of natural resources, it excavated several times less coal, iron ore and even oil than USA, produced considerably less quantities of pig iron and steel. However, Russian industrial

growth rates were higher than Western. Only during XIX century's last decade its industrial output rose twofold, and in heavy industry – almost threefold. In spite of this, and besides cheap labor market and mighty foreign industrial capital inflow, even in 1913 Russia continued lagging behind leading World economies.

Shortly after Oct. 1917 revolution, new Soviet authorities, headed by Vladimir Lenin, upheld the idea of Russia's electrification that emerged several years earlier. Being ardent follower of this idea, Lenin enthusiastically took part in organizational work directed at its realization. Already in January 1918, a leading organ creation was proposed to govern that industry's development. Such organ – Electrostroy – appeared in May 1918. Simultaneously Central Electro-technical Soviet (CES) appeared as successor and continuer of prerevolutionary All-Russian electro-technical gatherings. In Dec. 1918, CES created a Bureau for Russia's general electrification plan development. A year later G. M. Krzhizhanovski sent to Lenin his published article "Industries' electrification tasks" that provoked Lenin's enthusiastic reply, added with proposition to prepare a popular booklet, which subsequently was promptly printed. A couple of weeks later the Workers' and Peasants' Defense Soviet approved and Lenin signed an ordination that established Commission, obliged to realize GOELRO – Russia's State Electrification Plan.

GOELRO Plan stipulated a unified program creation for revival and development of both Russia as a whole and specifically its major industries, particularly heavy. The major instrument for this was supposed to be labor productivity uplifting, achieved by not only its intensification and rationalization but also by human's and animal's muscles energy substitution with a mechanical one. Especially stressed was electrification's perspective role in the development of manufacturing and construction industries, transport, and agriculture. Predominant utilization is recommended there for mainly local natural fuels, including fossils – poor coals, peat, shale, gas, and timber. On the other hand, restoration of the devastated Russian economy was rendered as no more than a specified program's part, destined as a basis for subsequent reconstruction, reorganization and economic development of the country.

As a result, so-called 'Program A' of GOELRO Project that stipulated country's devastated energetics industry development was already fulfilled at 1926. Up to the minimalist 10-year Program version, ending at 1931, all major program indexes concerning energy sector were surpassed. Up to 15-year Program's deadline, which ended at 1935, Russian energetics reached universal standards and attained the third worldwide position – just after USA and Germany.

Both in theoretical and applied aspects Plan GOELRO remains original and not having analogs abroad. In 1923-1931 period, somewhat similar electrification programs were initiated in USA, Germany, UK, France, and Japan. Unfortunately, all of them ended unsuccessfully, not surmounting R&D stages [5].

Other Russian strategic undertakings

Among other Russian major strategic endeavors such examples may be recalled once again as Great Patriotic War (1941-1945) victorious operations, including Berlin takeover in May, 1945; atom and hydrogen industries creation, particularly

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in response to US bombings of two Japanese cities and Western plans to annihilate Russia by massive atom bombings; first Russian Sputnik (1957) and Yuri Gagarin's heroic orbital flight (1961); a number of not so spectacular, but none the less economically and scientifically important achievements.

It must be noted, that all mentioned advancements became possible exclusively due to preliminary scrupulous strategic planning, followed by persistent and simultaneously creative strategic plans implementation.

Russian strategic theoretic and applied studies

Both Transsib and GOELRO in addition to urgent economic development problems were engaged in theoretic and applied scientific research. Whereas within Transsib project mostly applied scientific studies were concentrated on geographic, geologic, construction and engineering problems, GOELRO project initiated and raised onto higher levels studies in vast scientific thematic areas. It became essentially first adopted by Federal government long-term State Plan of Socio-Economic Development, as well as virtually laid the corner stone for further 5-year plans that for decades pushed Russian economy ahead and ultimately secured achievements mentioned earlier.

The scientific significance of GOELRO Program is substantiated by the fact that some of its higher managers – Alexandrov I.G., Graftio G.O., Krzhizhanovski G.M. Vedereev B.E., Vinter A.V., et al – subsequently became Russian Academy of Sciences' actual or corresponding members. Unfortunately, a number of GOELRO active participants and managers became victims of struggles, rampaging at that time (domestic inter-class and global inter-systemic), and were, often arbitrarily or even passingly, repressed [5].

Parallel to Transsib and GOELRO projects, specific studies concerning mining industries were conducted. In particular, coal, peat, iron, copper and other MRs, required for GOELRO objects, were in growing quantities mined and used there. Moreover, within GOELRO project most mining, allocation and utilization operations usually bypassed competitive markets. It is not incidental therefore that new terms – “nedra” (namely, ‘earth bowels’, i.e. strictly state-owned assets) and “nedropol’zovanie” (their state-controlled usage) – emerged precisely at that moment. Since then both these notions together with their derivatives, plus old-fashioned “gornyaki” (i.e. developers of mountain contents) are almost exclusively used as the only legitimate names for those activities and their executors, who both excavate minerals, and additionally or sometimes absolutely independently process, transport, commercially dispose them within domestic and World markets, and ultimately industrially utilize MRs.

It must be noted that later in Russia new term emerged – “mineralopol’zovanie” (Minerals' Husbandry), far more adequate within modern World's economy. Curiously enough, but despite authors' numerous personal and collective publications on that score, novel term alongside with its derivatives up to now fail to plough their way into wide scientific studies.

At any rate, Russian scientific studies devoted to mining industries' strategic management are going simultaneously in a number of directions. Besides those

strategic plans and programs that are concentrated on specific MRs-oriented industries (national and regional geologic branches, iron, precious, non-ferrous and rare metals mining, energetics, including oil and gas extraction, processing and delivering to consumers, etc.) there are theoretic and/or applied studies, incorporated into wider national or regional socio-economic strategic projects and devoted to mineral industries development within certain territories or economic sectors.

Other demonstrably fruitful theoretic-and-applied scientific direction are multi-industrial or so-called Cross-Sectoral Resource Megaprojects, created to cope with most promising objects of national or regional economies. According to N.I. Plyaskina and V.N. Kharitonova, Megaprojects are essentially systemic-arranged sets of projects destined to be implemented in interrelated industries. Usually such megaprojects occupy sufficiently large territories and involve several subjects of the Russian Federation. Ultimate strategic goal of such projects' creation and development is their high economic performance, demonstrated in particular by complexes' leading participants competitive functioning within global markets (Figure 1).

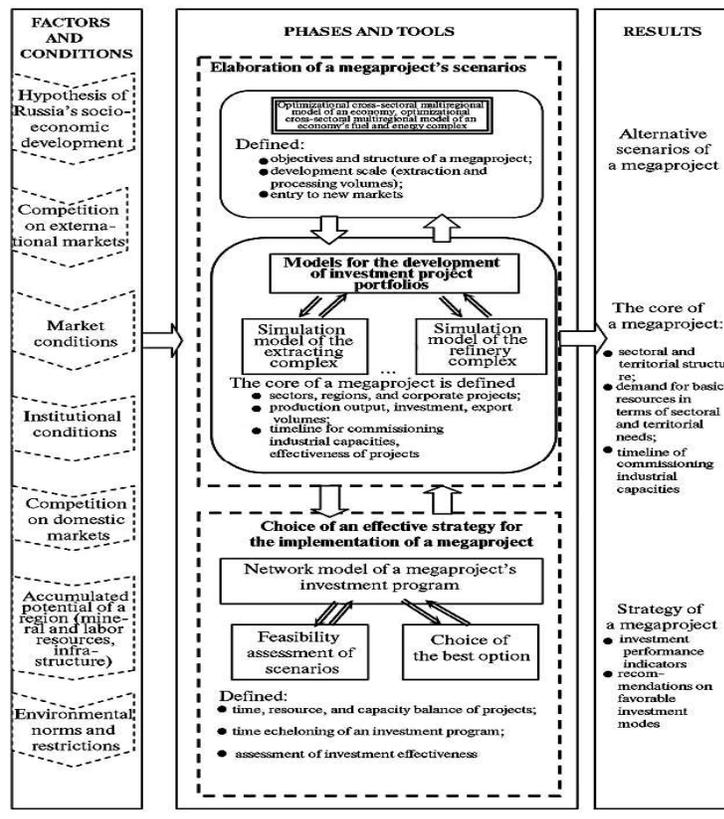


Figure 1 – Organizational and technological scheme for the megaprojects strategic planning and management [6].

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In recent years, a number of cross-sectoral territorial megaprojects were created. Among them are “Integrated Development of Lower Angara River,” “Integrated Development of Trans Baikal region, and Integrated Development of South Yakutia”. Predominant specializations of recent megaprojects are the energy sector (Yamal, Sakhalin, and the East Siberian Oil and Gas complexes) and metallurgical industry – “Industrial Urals – Polar Urals” [6].

Foregoing Russian megaprojects, as well as many other similar projects, are often provided with various, sometime unique structural models and/or mathematic-statistical and computational means. One of most active and widely known participants in this research area is Novosibirsk Scientific Center. By World-wide fame are endowed such former and currently working there academic authorities as Aganbegyan A.G., Granberg A.G., Kuleshov V.V., Kryukov V.A., Suslov V.I., Marshak V.D., Suspitsin S.A., and many others [7], [8], [9].

Concept of Rational Minerals Husbandry

As was already noted, since early 1920s and up to now all activities involving MRs are mostly rendered in Russia under generic term Subsoil Utilization (SU). Meanwhile at 1985 in former USSR an inclusive methodological monograph was published, elaborated by a large group of Russian and Hungarian authors [10]. That publication favored creation of new research direction, called among other versions as Rational Minerals Husbandry (RMH).

Regrettably, this idea was not clearly expressed and sufficiently substantiated in the publication and because of that for some time remained unnoticed. Nevertheless, beginning from 1980-1990s turn, RMH became the leading notion of a research direction initiated in Russian FEB RAS Mining Institute. Somewhat near last century’s end this direction’s thematic setup was essentially widened by methodology problems inserting into it, pertaining to MRs-objects strategic management at different organizational levels.

In subsequent years, RMH-conception was substantially refined and widened, acquiring new theoretic and applied ingredients. At the same time its main ideas, illustrated partially by Figure 2, undergone substantial time-test and remain in their core intact. By and with this paper authors’ participation within discussed research direction, several monographs and many articles were published both in Russian and foreign press. There, in particular, significantly higher adequacy is substantiated of RMH research direction compared to those conducted within various versions of Mineral Resources Management (MRM) and SU conceptions [11], [12].

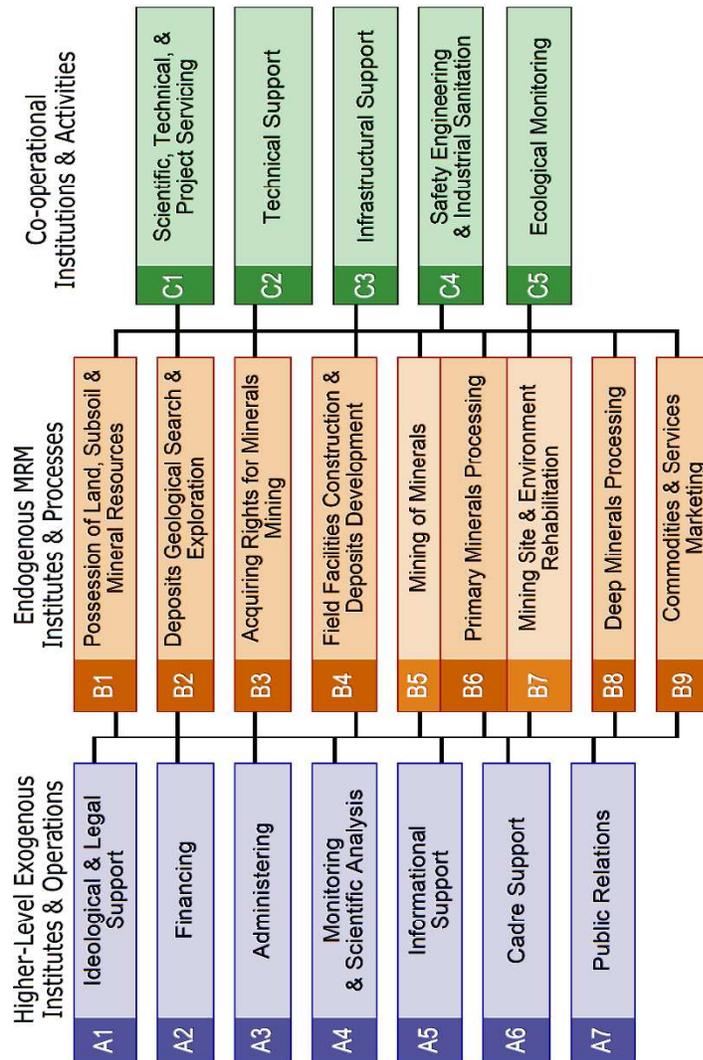


Figure 2 – General holistic Mineral Resources Husbandry model applicable to both plan-oriented (POE) and market-oriented (MOE) economic systems [11].

As compared with widely proliferated MRM notion, which confine researchers' and practitioners' attention primarily to formal managerial processes, being developed in Russia RMH concept fosters research participants' efforts upon multifaceted activities that in their entirety are stimulating economically effective and socially viable mineral assets utilization both on local, industrial, regional, and nation-wide levels.

Modern China's experience

After USSR and Socialist Commonwealth disintegration Peoples Republic of China (PRC) remains one of a few countries whose socio-political and economic life is determined in its strategic landmarks by leading China's Communist Party (CPC). At XX-th CPC Congress (Sep. 1982) a modernization program was adopted, in which strategic goals of PRC's economic development were outlined, including such its aspects as priorities, stages, principles, ideological guidelines.

According to the Congress' guidelines, developmental strategy notion is mainly rendered in the country as long-term landmarks that alongside with the principal goal reflect also development priorities, its successive phases, organizational means for necessary executives' attraction, as well as those strategic and tactical measures that are outlined for program's realization. Thus specified strategy both structurally and essentially is a plan, formulated according to profound evaluation of various factors and conditions of economic development, and besides of different aspects affecting socio-economic situation as a whole.

Both progressive character and fruitfulness of chosen in 1982 strategic direction is convincingly confirmed by Chinese economy, which during dozens of years developed with double-digit percentage growth rates and is now ranked almost equal, in some aspects even superior to 'No.1 World's economy' – that of the USA [13], [14].

SOME FEATURES OF WESTERN-STYLE MINERAL RESOURCES STRATEGIC MANAGEMENT

Compared to Russia, China and former Socialist Commonwealth nations, Western countries are represented by fairly diversified and, except ideological uniformity, loosely organized group. At the same time, there are some features to large extent common to all of them. Particularly may be distinguished: highly incoherent long-term development, subjected to temporary local recessions or vast regional crises; prevailing narrow industrial and operational specialization, dictated by exclusively profit-making strategic orientation; relatively frequent reorganizations, coupled with nationalization/privatization reversive movements.

With respect to mining industries, *Australia* may serve as one of not so frequent exemplary objects of industrial organization [15], [16]. Being a country with full-fledged raw materials and MRs-based economy, on federal and territorial levels Australia retains its economic specialization in mining and processing industries. In particular, this is enabled by country's governmental ministers and departments, charged with exploitation and utilization of certain MRs' groups and varieties. Along with this, such major transnational corporations as BHP, CRA, et al., characterized by vast activities spectrums at major world MRs' market sectors, are naturalized and freely operate in the country. Despite deep recession that engulfed World's economy at the start of 1990s, mineral sector of Australian economy retained its stable positions, initializing new projects and winning important niches for itself within World's raw materials markets.



Two particular circumstances that reinforce practical and cognitive significance of Australian experience are:

- Steady democratic traditions established there and characterized by active public participation in practical resolving of all key problems, undermining interests of the country and its citizens;
- Broad, holistic, and well-engineered attitude to situations analysis and recommendations elaboration with respect to carried out reforms directions, which is characteristic for specially created *ad hoc* research collectives [16].

As for those countries that traditionally adhere to market economic model, they were and to large extent continue to be characterized by (1) predominately confrontational relations between economic players that are void of common interests, (2) never-ending struggle for their own survival and well-being, accompanied by aspiration for absolute domineering and suppression of competitors, (3) reckless and frequently depleting exploitation of 'costless' natural and human resources, (4) endless chase for commercial profits, combined with commissioning of various asocial and lawless mechanisms and schemes, (5) widespread total neglect towards both national interests and local communities' social needs.

By no means accidental is the fact that real strategic studies in mineral and other economic industries began in major Western countries only at the 1950-1960 edge. That is immediately after the launch of Russian Sputnik and subsequent Yuri Gagarin's orbital flight, which demonstrated to whole World virtues of plan-oriented Russian economy. Interestingly enough, that neither these historic events, nor other described above Russian strategic achievements are cited in the rapidly swelling mass of Western publications on strategic and mining industries issues. Table 1 in abstract form shows analyses results of approximately 500 publications, issued in Russia and abroad during recent 5 decades.

Table 1 – Juxtaposition of strategic management historic legacies, arranged according to countries' disposition to plan- or market-oriented national economies

<i>Legacy attribute description</i>	<i>Plan-oriented economy</i>	<i>Market-oriented economy</i>
<i>Predominant subject scope</i>	Holistic	Reductionist
<i>General scientific objectivity</i>	Moderate-to-high	Heavily biased-to-neutral
<i>Self-criticism level</i>	High	Low
<i>Attitude to methodological or ideological adversaries</i>	Pendulous	Contemptuous-to-neglecting
<i>Mathematical substantiation</i>	High	Moderate
<i>Visualization level</i>	Low-to-moderate	Moderate-to-high
<i>Publicity and advertising level</i>	Low-to-moderate	High

CONCLUSION

Russia can boast lengthy and glorious chain of its strategic economic and technical megaprojects. Together with numerous strategic plans, created and implemented on national, regional, industrial, and communal levels, they mobilize and organize human efforts upon successful realization of collective tasks.

Beginning with mid XIX century's Transsib, major Russian strategic projects invariably follow holistic road-maps, Alongside with fulfilling specific industrial or geopolitical goals, these projects simultaneously realize all-embracing tasks of territories' and local communities' complex socio-economic development. Since early 1920s and Plan GOELRO, practically all Russia's major strategic programs are pursuing Ivan Michurin's motto: "We cannot wait for favors from Nature. To take them from it – that is our task".

Unlike Russia and other countries disposed to plan-oriented economies, the so called 'collective West' countries joined global strategic management movement precisely in the wake of Russian spectacular cosmic achievements – launch of the first man-made Earth's satellite (Sputnik, 1957) and Yuri Gagarin's breakthrough orbital flight (1961). Despite unceasing pendulous movements between strictly profit-pinpointed reductionist and somewhat relaxed 'Corporate social responsibility' (CSR) approaches, the first invariably takes upper hand and returns situation to Adam Smith's times. Besides, within a set of five strategic management principles, prescribed for market economies and known as '5 Ps', two openly endorse cheating and fraud as fully legitimate instruments of economic relations. These are *Ploy* – a specific move designed to outwit or trick competitors, and

Perspective – essentially an instruction how to cheatingly ‘make lemons into lemonade’ [17].

It must be noted, that domestic strategic management experience is not in the least ideal and regularly receives critical appraisals both from competitors and from creators themselves. Moreover, even ‘we cannot wait for favors from Nature...’ slogan is currently vividly obsolete, because it ensues serious consequences for our already noticeably overpopulated and in some aspects overexploited planet. Hence, both socio-economic systems, currently vigorously striving for dominance, have no optional exit from situation, except finding compromise and mutually beneficial problems-solving versions.

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