

GLOBAL PERSPECTIVE

Doing Business in Russia— East-to-West Technology Transfer

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During the Gorbachev years—and since—a good deal of attention and money has been focused on the conversion of Russia's massive defense industries. Turning such swords into ploughshares is easier said than done, as U.S. companies like Boeing and McDonnell-Douglas have each discovered, often the hard way. The press is filled with reports about the problems that plague the several dozen high-profile space/aviation cooperative ventures linking the two superpowers. These ventures have been funded by private or government money—or by a mixture of sources. Interviews conducted with senior executives from several of the leading U.S./Russian high-technology commercial partnerships, however, have turned up a surprising finding: There are some success stories, and their numbers seem to be growing. Some companies are demonstrating, in the competitive world of corporate profits, that there is a future for leading-edge U.S. companies.

There are abundant opportunities within Russia's underfunded network of science and technology (S&T) institutes, labs, and enterprises which still carry on the basic R&D work once funded so generously and

patiently during the days of the former USSR. These little-known success stories—and a few failures—show how best to engage the Russians in the often hard work of jointly commercializing good innovations which often go largely untapped.

Moving to a Market-Based Economy

An intellectual bridge must be built between Russia's varied centers of influence and power and those key U.S. centers where opinions and policies are shaped and developed. Many Fortune 500 companies are actively involved in the dramatic and often topsy-turvy worlds now developing in Russia's S&T sector. These companies have been witness to the changes that are creating the potential for lasting political reform and economic development. As a result, the West is now better able to develop an informed interpretation of these issues, especially since they are most likely to affect the development of the West's relationships with Russia's S&T sector—and thereby affect Russia's overall relationship with the West.

President Clinton, Secretary of Defense Perry, and the Chairman of the Joint Chiefs of Staff have said it repeatedly: The single greatest national security challenge the United States faces involves helping Russia through the transition to a market-based economy.

What the U.S. administration now hopes—together with many others around the globe—is quite simple: Sooner, rather than later, Russia's situation will “normalize” or, at the very least, be more normal than it now is. The dream is that one day we can say the following things about Russia:

- Her economy will become more stable and integrated with the global economy.
- Her political authority will become more democratic and respected at home.

- Her industry will become less dependent on military production and less focused for revenue on other “sensitive” exports (such as the export of civilian nuclear technologies that have the potential for dual use).

Under these future conditions, Russia’s weapons of mass destruction (atomic, biological, or chemical—“ABC”) and Russia’s weapons-related know-how are much more likely to be more secure and safer than they are today.

The Human Factor

The know-how or “human factor” is a critically neglected aspect of the security challenge. Little is being done by government-supported programs in the West or in Russia to create an environment where tens of thousands of highly-skilled Russian technical specialists and Russian scientists can find alternative non-weapons-related employment.

Aside from the obvious steps already taken in Russia by the DOD and DOE with Nunn-Lugar funds (hardening storage sites, safe transport of warheads, accounting systems, etc.), what more can be done, and what more is required to ensure that ABC weapons or know-how don’t proliferate out of the Russian Federation? One pressing need is the successful conversion of Russia’s vast military R&D capability to civilian and commercially sustainable ends. In practice, what this means is turning a myriad of institutions of research and development toward more viable and financially sustainable commercial uses.

East-to-West Technology Transfer

Western firms have been successfully using a number of varied approaches in Russia in their efforts to tap the substantial technology prowess (in areas such as aerospace) that lies inside Russian labs and institutes. Advanced space R&D in Russia represents new and profitable opportunities for Western firms interested in technology licensing and patent acquisition—and, of course, in the acquisition of completed systems through purchase or through contract design and manufacturing. With thousands of high-level scientists performing basic research, Russia needs Western partners with the skills to develop and commercialize the untapped technology base. Some—but unfortunately not enough—Western firms have developed experience in facilitating complex East-West business transactions and have used the contacts of

their advisors to gain access to valuable Russian technology.

Like Sun Microsystems, AT&T, IBM, Boeing, and Lockheed—to name a few which have announced important East-to-West technology transfer deals in Russia—there are firms in the West that have just begun to take note of six vital facts that make Russia an increasingly attractive arena for tapping technology:

Research Facilities are World Class

In approximate terms, just before the end of the Cold War, the former Soviet Union spent one-third of the world science research budget, has one-third of the world population Ph.D.-level scientists and engineers, and has been granted one-third of world patents.

Research is Commercially Undervalued

Since these Russian researchers have little exposure to commercial markets, their work tends strongly toward that most expensive and long-term sort of research, “basic research,” although there are some important exceptions. As a result, Russian researchers often do not understand the full commercial potential of their research. This is even more often the case with the sponsors of the Russian researchers: those who run the institutes, design bureaus, academies of science, state science and technology committees, or ministries from which the funds are granted in the first place. Perhaps the classic example is the acquisition some years ago by National Patent Development Corporation (and later, through them, Bausch & Lomb) of the polymer license which is used to manufacture soft contact lenses.

Financial Pressures Result from Budget Cuts

Russian economic reforms and austerity programs have placed the best research institutes under extraordinary financial pressures to open up. Deep cuts in government subsidies have conspired with new cost-accounting and self-financing regulations to force Russian research institutes to look Westward—with rising desperation.

While it used to be the case that military-sponsored research or production organizations in Russia were off-limits to Western firms seeking new technology, this has changed dramatically. Today, President Yeltsin and his counterparts throughout the region have instituted deep-cutting military budget reductions, which have forced such scientific organizations to reach out to the West.

Deals being made now range from the potentially profitable to the extraordinary. Even Western contributions of know-how, small amounts of low- to medium-trade technology, and marketing expertise have been exchanged for such things as the first right of refusal on all licenses arising from new research. In other cases, small-scale capital infusions have allowed Western firms to secure majority ownership of joint ventures into which Russian partner(s) contribute lab space, personnel, and existing licenses or patents.

Window of Opportunity is Closing

The window of opportunity may not be open for long. In our experience, such an assessment is not so much derived from political risk assessments that predict doom for Russian reformers as it is from common sense in business: As Russian researchers secure ever-greater intellectual property rights over their work, thereby enjoying direct financial benefit, they and their sponsoring institutes or academies will become tougher and more demanding business partners. Similarly, Western firms are increasingly aggressive in their Russian dealings. As a result, newcomers will find it harder and harder over time to strike up these kinds of profitable joint ventures and contracts.

An example of a joint research program which stops short of being a joint venture but remains advantageous for both the Eastern and Western partners is Millipore Corporation's deal with the Moscow Institute of Genetics. The Bedford, Massachusetts firm develops products for analysis, synthesis, and purification in life science research, pharmaceutical production, and environmental testing. In the agreement, Millipore plays a supportive role to encourage new discoveries by contributing a lion's share in capital equipment, consumables, spare parts, training, and consultation with the joint R&D center it opened with the Institute. The Russian side contributes labs, office and storage facilities, and a staff of seven specialists. The center focuses on the insulation and purification of certain biological active compounds. While the Russians retain ownership over any manufacturing processes that result from using Millipore's tools, the Western partner intends to integrate any new uses into its worldwide product design and marketing.

More Receptive to Joint Ventures

The Russians are quite responsive to Western firms proposing to engage their inventors in joint ventures. Since few patents or licenses can be commercially

developed without the participation of key inventors, this new willingness represents a significant breakthrough.

Bartering Goods for Russian Intellectual Property

Finally, barter deals involving the swap of manufactured goods for natural resources have recently been joined by a more interesting sort of countertrade: swapping manufactured goods for patents, licenses, or the use (read: rental) of scientists and technologists. Philips NV recently bartered electronics goods for the full-time use over several years of a group of talented Russian software programmers.

A good number of Western multinationals are now actively seeking out promising opportunities for technology acquisition in Russia. The purchase by AT&T of a key relationship with the Joffe Lab in St. Petersburg was just one of many indicators of the level of interest that has developed in the past few years among science/technology firms in the West. In addition to scouting for the right licenses, patents, or partners, these Western firms are seeking opportunities in areas of potential East-to-West technology transfer that include the use of military technologies for civilian applications.

Leaders in the West (in business and industry, government, the military, sciences and academia, public interest, and media) need to begin discussing the implications for S&T of Russian economic and political change. In the context of industrial technology transfer, there are at least two areas that will demand greater research and attention during the 1990s than they received in the 1980s or before:

- The structure and politics of Russian science organizations, especially their budgets and personnel.
- The legal and financial regulations in Russia governing either foreign trade in licenses or technology-intensive joint ventures and research contracts.

The Government's Role

The Carnegie Endowment's Commission of 1992 concluded that post-Cold War economic competitiveness and industrial prosperity must now become the paramount concerns of U.S. foreign and national security policy. A major section of the commission's report focuses on reorganizing the apparatus of the federal government to cope with the demands of economic competition in a global market. However,

the report does not specifically address the need for a coordinated and effective program of federal inter-agency assistance to Russian S&T. Much of the work being done in Russia by U.S. government contractors is being performed by U.S. headquartered firms at work in Russia.

In their search for new and profitable overseas commerce, U.S. corporations are carefully reviewing the problems and potentialities of doing large-scale business in Russia. Government agencies—at NSC, CIA, Commerce, State, Energy, and Treasury—try to do a good job of providing the Executive Branch and Congress with the latest Russian political, economic, and social developments. Yet, when compared with the efforts made by other OECD governments, these same agencies—according to interviews with about 100 CEOs—have so far done little to support U.S.-headquartered firms entering Russia.

In order to redress the imbalances that now exist between government efforts and those of key U.S. competitors around the globe, agencies must be led toward a new and more proactive role in support of private U.S. capital's entry into Russia. In light of severe budgetary restrictions, and in keeping with the goal of advancing Russia's reform and privatization, government agencies must integrate their programs and coordinate policies. One clear aim must be to help secure a larger role for U.S. companies in Russian markets.

Today, U.S. private sector companies which seek to support the reforms and modernization efforts, through trade and investment, find little or no support for their efforts coming from either the executive or legislative branches of the government. This is in stark contrast to the active government assistance given to private (and state-owned) companies by the key industrialized market economies active in Russia: member states of the European Community, European Free Trade Association, Canada, South Korea, R.O.C., and Hong Kong (hereafter referred to collectively as "Western").

It is the accepted conventional wisdom in Washington and other policy centers that the future of U.S. bilateral relations with Russia will be influenced, perhaps to a substantial degree, by U.S. private sector trade with and investment flow into these republics. However, one critical fact is revealed upon interviewing CEOs at those same U.S.-headquartered companies expected to help shape U.S. ties with Russia: These CEOs find themselves and their firms without any truly

competitive U.S. government assistance in their search for profitable Russian business.

In order to determine which government assistance programs to create, which to modify, and which to eliminate, some new thinking is needed to help Americans evaluate the programs which our government, and the other Western states, have organized at great expense to taxpayers.

It is at three distinct levels where this new thinking can be of practical use to both Executive Branch policymakers and to legislators:

- (1) Evaluate the policy choices facing the government, and identify those policies that will be of direct and tangible assistance to firms entering Russian markets.
- (2) Compare the programs offered by other Western governments to their private sector enterprises, and judge their respective strengths and weaknesses.
- (3) Clarify which broader political aims and civic values must undergird integrated and coordinated federal support programs—in parallel to the government's aim of promoting U.S. economic competitiveness.

Policymakers are constantly receiving assistance requests from the private sector. But these same government policymakers rarely have the opportunity to explore, in any great depth, the underlying forces which shape the views held by leaders from business and industry, government, the military, the sciences and academia, public interest, and the media. Competing views need to be aired, just as we need to highlight the differences between them, and then go on to evaluate the impact of redesigned, reconfigured, or entirely new programs and policies. This will also help develop the conceptual and policy basis for a flexible government mechanism to help adjust the programs of the future to the changing needs inside U.S. firms active in Russia.

A wide variety of individuals at key institutions working on Russian reforms can also benefit from the new thinking about R&D and conversion. These include:

- The intergovernmental multilateral institutions.
- Western bilateral government aid and development institutions.
- Western and local non-governmental institutions.

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- Western and local independent non-profit and university-affiliated think tanks and research centers.

Conclusion

There are a number of varied approaches Western firms have been successfully using in the Russian Federation in their efforts to tap the substantial technology prowess that lies inside their labs and institutes. For Western-headquartered firms, advanced R&D found inside today's Russia clearly represents a whole spectrum of new and profitable opportunities. This is especially true for those firms interested in technology licensing and patent acquisition—and, of course, for those looking to obtain completed systems through purchase or through contract design and contract manufacturing. Russia needs Western partners who have the skills to develop and commercialize their untapped technology base. **NTQ**



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