Russia: Offshore Software Development "Diamond in the Rough"

Second Generation Sourcing and the Russian Opportunity

Synopsis: Second Generation Sourcing and the Russian Opportunity

Much has been discussed about trends in Information Technology (IT) outsourcing and more specifically offshore software development (OSD). Tightening corporate budgets, a steady demand for information and communications technologies, and labor shortages in Europe and the US have been the primary drivers for the industry's growth. Sustained competitive differentiation has become virtually unrealistic without an offshore sourcing strategy. A Gartner strategic analysis report published in September 2001 indicated that 40% or more of Fortune 500 companies have utilized the offshore model for software development. Gartner further estimates that by 2005, 30 percent of global 2000 companies will have a sourcing strategy encompassing near-shore or offshore solutions.[1]
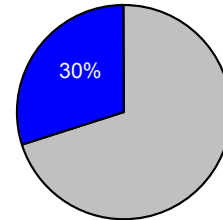
Beyond the traditional benefits associated with OSD, companies are now realizing improved margins, enhanced innovation and accelerated application delivery.

Figure 1

40%
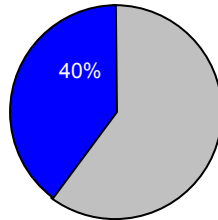
% of Fortune 500 Companies Utilizing OSD in 2000

Figure 2

30%

Estimated % of Global 2000 Companies to Use OSD by 2005

Improved processes for project management and quality assurance, the introduction of quantitative techniques to measure productivity and value, and a variety of other service delivery refinements have also contributed to the growing acceptance of the offshore software development model among companies of all sizes. Expanding on traditional benefits, such as lower labor costs and access to large pools of talent, companies now routinely realize improved margins, enhanced innovation, and accelerated application delivery.

Several offshore destinations have emerged as the preferred locales for software development services. Countries that have elicited the combined support of their government, investment, industry, academic and entrepreneur communities have realized remarkable returns on their efforts, which the success stories of India, Ireland, and Israel demonstrate. As demand for IT services continues to evolve, a steady stream of new international entrants are building out unique and specialized capabilities of their own so that options for offshore, outsourced software development are now more extensive and diversified than ever.

New global entrants are building out unique and specialized capabilities.

Companies can now employ what we refer to as a second-generation OSD sourcing strategy, wherein the sophisticated IT services purchaser has access to a rich network of geographically

distributed providers with distinct economic, productivity, skill, and cultural attributes. OSD partner selection should be geared to the unique characteristics and requirements of each project. By fine-tuning the network based on the company's evolving competitive needs and strategic objectives, the model is more responsive to a full range of changing business dynamics. Over time, as communications and collaboration capabilities further mature, processes will be refined, cultures will mesh, and the global development network will become a fluid extension of corporate IT and the product development enterprise.

The timing for integrating an OSD vendor into a company's IT infrastructure could not be better. As the importance of embedded systems and applications software steadily grows, so too does their level of complexity. And while economics will always play an important and practical role in the sourcing selection process, buyers will qualify OSD vendors based on increasingly exceptional and progressive capabilities criteria which some countries are better qualified than others to meet.

Russia has human and intellectual capital attributes not available through other offshore destinations.

Well-beyond the comparatively simple economic incentives and increased competitive advantages that the distributed offshore development model provides, it is now also within the purview of IT decision makers to consider resource diversification strategies to insure the availability of needed technological expertise. Market demand for leading-edge, as well as foundational (C, C++), technologies is so great that virtually every IT development initiative is in danger of failure due to the inability to secure, or the loss of IT personnel.

Russia has clearly earned a place within the second-generation sourcing network – possessing the fundamental assets of an attractive offshore resource, (low labor cost, vast talent pool, good communications infrastructure, and high quality output), combined with human and intellectual capital attributes not available or as readily available through any other offshore destination.

Resource diversification strategies ensure the availability of needed technological expertise.

For roughly a decade, a relatively small community of entrepreneurs, investors, customers and others has actively participated in, and benefited from Russia's software development industry. They understood early on its unique potential. Today, a larger community has emerged and, recognizing the powerful role that a thriving IT sector can play in the overall economy, has become actively engaged in its support and committed to its accelerated growth.

In terms of offshore software development, Russia is truly a "diamond in the rough," offering exceptional un-mined promise. Unlike most countries, Russia's resources are ample. The education level of available talent is extraordinary on a global scale, and its software development capabilities are arguably unmatched. Today Russia OSD represents an attractive device with which to mitigate the risk posed by global instability. And, the business climate in

Russia has never been more favorable for establishing strong, mutually beneficial relationships. For enterprises in search of uncommon levers to comparative advantage, Russia warrants critical consideration as an OSD resource.

Russia: Software Development Capabilities and Potential

Esther Dyson, the world recognized technology luminary stated to the New York Times in 2001 that, "Many Russian programmers are not mere programmers; they are mathematicians and scientists who turned to software to make a living…they excel at (solving) complex, large-scale technical problems. They don't simply want to follow directions; they want to be creative. The idea is that they can be very creative at solving tough problems, so their customers can put those solutions to practical use."

Background

Russia is frequently mentioned as a rapidly emerging offshore destination for software development. The size of the Russian offshore software development industry market is estimated to have grown to between $130 million and $200 million.[2] Estimates for growth through 2010 vary widely from $1 billion to $6 billion and that in the same period the IT sector will account for 2 percent of Russia's total economic output (compared with the current level of 0.61%).[3]

Currently, more than 100 Russia-based companies are active in software project services. Labor costs are moderate (approximately 30-60% lower than in the US) and the major commercial centers have adequate telecommunications and distributed computing infrastructures. As a result, at least a dozen major US companies have established Russian offshore development centers including Motorola, Intel, Sun, Boeing and Nortel – and the prospects for future growth appear positive. Russia-based vendors have begun seeking ISO and SEI certification, staffed local and US based bi-lingual project and relationship management operations, and established impressive performance track records with blue-chip clients.

Based on the magnitude of untapped talent, the array of specialized expertise, high levels of productivity, and high quality development output, Russia is uniquely positioned to establish itself within the second-generation sourcing network as the premiere source for advanced development services and specialized technical innovation.

Case in Point

Perhaps no event better demonstrates the potential of Russian technological influence than the positive impact resulting from the mass immigration of Russians to Israel between 1989 and 1991. In that short time frame, more than 1,000,000 Russians immigrated to Israel. Thousands of these émigrés were scientists, mathematicians, physicists and engineers educated at top Russian

"The idea is that they (Russians) can be very creative at solving tough problems, so their customers can put those solutions to practical use."
– Esther Dyson

Major U.S. companies that have established Russian offshore development centers include Motorola, Intel, Sun, Boeing and Nortel.

academic institutions and seasoned from years of intensive, government-directed programs and initiatives.

Russia's contribution to Israel's substantial stocks of technological human capital is significant and measurable. "By the end of 1991, 5,300 newly emigrated scientists were registered with the Israeli Ministry of Absorption. While many of these scientists had difficulty penetrating the Israeli scientific and academic communities, a significant segment found their way to the ICT industry or even started their own high tech firms through the incubator programs."[4] In total, more that 13,000 scientists have immigrated to Israel since 1989.

The contribution of Russia's intellectual talent has produced a substantial increase in Israel's stocks of relevant knowledge. "Given the USSR's traditional strength in the theoretical sciences, Israel became a superpower in mathematics."[5] This type of expertise helped fuel the explosive growth of Israel's information and technology communications industry. "The immigration from Russia endowed Israel with a significant share of the USSR's stock of knowledge. Immigrants brought with them both proprietary technologies and very different methodologies than are familiar in the West. They helped fuel the technology boom of the late 1990s, as their innovations and technical skills assisted both startups and established firms."[6] And boom it did. The volume of Israel's high-tech exports ballooned from $4.5 billion in 1990 to some $15 billion in 2000.

And this is but one example. Current Russian thought leadership in science and technology is evident throughout the world and is being harnessed for other high profile projects such as CERN's Large Hadron Collider[7], and China's space program.

Russia's Human and Intellectual Capital Bank
It's no secret that a unique set of factors enabled Russia to achieve such a remarkable technological impact. Massive government-sponsored scientific initiatives and a highly developed academic complex founded on a culture centuries rich in heritage during forty plus years of unprecedented cold-war competition produced arguably the highest concentration of innovative, disciplined, prescient, creative and determined problem solvers in history.

In the decade following the Soviet era, Russia has experienced a decline in its capacity to produce the magnitude of talent it did at its peak. Moreover, Russia has seen a deterioration of its intellectual base due to emigration as well as a marked decline in funding for R&D generally. However, Russia not only retains vast pools of untapped technical resources, but also continues to produce large numbers of highly skilled graduates educated in the proud academic tradition preserved from Soviet times. This, just as Russia begins to gain economic traction and its fledgling IT sector gains meaningful coordinated public and private support.

"Given the USSR's traditional strength in the theoretical sciences Israel became a superpower in mathematics." – Stanford Institute for Economic Policy Research

The World Bank estimates that Russia has more than 1 million technically trained personnel, more than the U.S., China or Japan, and three times as many as India. The ratio of researchers to the number of total inhabitants in Russia was 3,801 per million, just less than Japan (4,909), but greater than the United States (3698), Europe (2476), China (454), and India (151). And Russia ranks third in the world in terms of number of scientists and engineers per capita.[8]

In contrast to India and Israel, where qualified IT personnel are now in short supply and rates have begun to rise, the market in Russia is just now beginning to be engaged.

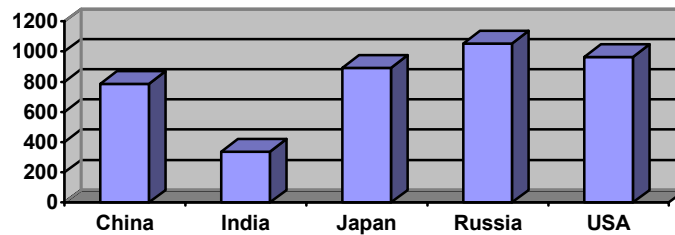**Technically Trained Personnel**
(in 1000s)

Figure 3

Technically Trained Personnel per 1,000,000 Inhabitants
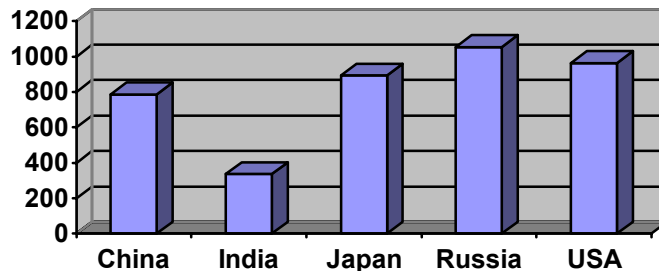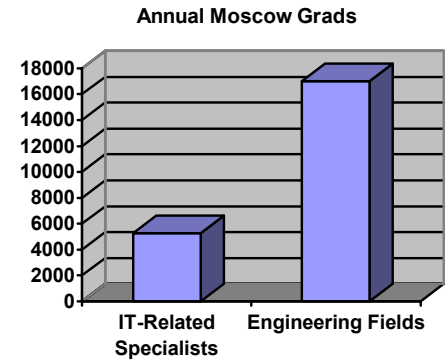

Figure 4

According to surveys by Microsoft Research, within the last seven years, 1.3 million people graduated from Russian universities with the skills to work in the IT industry. But only 70,000 actually work in IT companies in Russia, and only 8,000-10,000 are working within the offshore software industry.[9] Outsourcing-Russia reports that the total number of IT-related specialists who graduate each year from Moscow universities alone is approximately 5,000-5,500 and that Moscow universities produce an additional 16,000-18,000 annual graduates in various engineering fields that are also available for employment as programmers.

Russia's Untapped Resources

70,000 Working in IT

8-10,000 Working in OSD

1.3M

Technically Trained Russian University
Grads in Past 7 Years
SOURCE: MICROSOFT RESEARCH

Figure 5

Annual Moscow Grads

SOURCE: OUTSOURCING RUSSIA

Figure 6

Russians are innately risk-averse and predisposed to overcoming seemingly insurmountable obstacles.

Due to Russia's political transition and current economic conditions, a considerable portion of its technical talent works outside IT related industries and is virtually untapped. Gradually, portions of this qualified labor pool is migrating to various sectors of Russia's IT industry. In contrast to India or Israel, where qualified IT personnel has become in short supply and rates have begun to rise, the market in Russia is just now beginning to be engaged. Consequently, Russia-based firms and their customers enjoy lower turnover, lower competition and more stable labor rates. In more developed markets such as India, many of the best programmers are already employed.

Cultural Compatibility
The perspectives, reactions and behaviors of the world's different cultures are varied and should be strongly considered as it relates to coordinating offshore development teams. The various facets of cultural diversity have been studied extensively by industrial psychologists like Geert Hofstede and others.[10]

Russia's debt ratings are improving, the economy is growing, as is foreign investment.

Russians and particularly those within the academic sector are proud, passionate and hard working. They are able to balance quality of life with the performance-based needs of the company. They respect organizational hierarchy and its related communications protocols, and can effectively perform either independently or within structured work groups. Russians are innately risk-averse, but are socially and culturally predisposed to overcoming seemingly insurmountable obstacles in order to achieve stated objectives. Above all, Russians are able to consistently apply the highest levels of imaginative thinking to creatively solve very complex problems.

The number of IT stimulus programs in Russia is steadily increasing.

Diversification of the IT enterprise's offshore development portfolio must be a priority.

Russia's Political & Economic Climate

Russia's economic and political climate has stabilized and improved during President Vladimir Putin's first term in office. Politically, Putin enjoys the popular support of his domestic constituency as well as an increasing share of the international community. Russia's relationship with the United States is generally strengthening and trends suggest a more cooperative and constructive partnership than ever before. Russia's debt ratings are improving, the economy is growing, as is foreign investment. Major legislative, regulatory and legal reforms planned and/or underway as well as rapid adoption of international accounting standards portend still stronger prospects for continued improvement of Russia's economy, international position and general business climate.

This trend in political and legislative action is beginning to trickle down to Russia's IT sector. The Russian government has stated that it is planning to introduce tax privileges for software developers and IT specialists. Other stimulus programs including incubators to train new entrepreneurs and cooperative research programs such as the Russian Ministry for Economic Development's recently announced $2.6 billion Electronic Russia Program are beginning to emerge. These are but a few examples of the types of support that countries like India and Ireland have enjoyed for more than a decade. Nonetheless, there is a promising consciousness beginning to take shape among a growing community of government, investment, industry, academic and entrepreneur communities in support of Russia's IT sector.

Global Risk

Recent headlines speak to political and social instability in many global IT centers. China aims nuclear missiles at the US, Pakistan and India prepare for war, Israeli/Palestinian hostilities escalate, and the world battles on to eradicate terrorism. While tomorrow the players may change, it is likely that the substance of the headlines will not. Prudent diversification of the IT enterprise's offshore development portfolio must therefore, be a priority.

Russia is by no means void of military turbulence. Conflicts persist in Chechnya and as an ally in the ongoing war on terrorism. But Russia's relationship with the US as well as much of the international community is dramatically improved. In light of the current state of global conflict and positive trends in its relationship with the US and others, Russia presents an appealing candidate with which to diversify offshore programming work and to mitigate exposure to global conflict.

Conclusion

The second-generation IT sourcing network offers a vast global resource from which to create the ultimate corporate IT services portfolio. Fluid and agile, this network offers competitive edge through low cost, high productivity, speed and sticky ROI for those organizations that can successfully tap into the network.

Without question the quality and selection – as well as the differentiation among specific countries and their respective providers – is becoming increasingly attractive. It is necessary to be keenly aware of not only the array of services available, but also where the pockets of value and competitive opportunity reside in addition to the risks.

With all of Russia's appealing attributes as an emerging offshore development resource, scrutiny at the vendor level is vital. Many providers will claim a variety of compelling differentiators, but only a minority of these will actually have the means to deliver consistent quality and service. Aside from cost and general programming capability, location, US-based sales/marketing and project management/client relationship operations, project management & QA processes, domain and/or technology expertise, track record, and management must all be considered during the selection process. The most valued providers possess formal, long-standing academic affiliations, assuring access to the very best IT talent and can demonstrate impeccable performance histories with recognizable and reference-able clientele.

Comprised of low-cost, qualified and often brilliant talent, a cooperative and maturing business climate, and an important means to reduce risk, Russia offers a compelling option as a partner for software development, technical innovation, and competitive advantage. Russia's software development community has recently been discovered by some of the world's leading competitive enterprises, and is powered, primed and prepared for accelerated integration into the ranks of the greater global corporate setting.

"We advise clients to evaluate vendors more on relationship issues (e.g., service levels) than on minor quality differences."
Dean Davison – Meta Group

Russia is uniquely positioned as the premiere source for advanced development services and specialized technical innovation.

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About the Author

In 1993, Greg Salvato foresaw great promise for technological contribution from Russia's newly liberated business and scientific communities. Drawing on his experience as a founder and principal of financial services firms Diversified Capital Markets, Inc. and Sierra Brokerage Services, Inc., Mr. Salvato coordinated support and various stages of venture financing for Russian technology transfer and information technology initiatives, including PWI. In 1999, he assumed the dual role of Chairman & CEO for PWI. In addition to his day-to-day operations responsibilities, Mr. Salvato drives the company's thought leadership activities and serves as the company's chief spokesperson.

Mr. Salvato serves as a director of Russia-based systems integrator, Recursion USA, Inc., electronic transaction and funds management services provider, Internet Transaction Solutions, Inc. and International InfoSearch, Inc., a consumer information service provider. Greg also serves as board chair for the non-profit Windsor Terrace Learning Center.

He brings to PWI and its clients extensive executive management experience in both the financial services and technology sectors. He is an avid student of domestic and global economics, international relations and Russian and Eastern European economic and cultural affairs. Mr. Salvato is a published author and a graduate of The Ohio State University with a degree in English.

About PWI

Headquartered in Red Bank, New Jersey, (www.pwicorp.com) PWI provides advanced technology solutions in analytics, communications, security services and transaction processing to support the core business and product management functions of corporations across a range of vertical and horizontal industry segments. Through American business acumen and custom processes fueled by Russia's best programming resources, PWI expands IT capabilities, stretches IT budgets and consistently generates competitive advantage and unmatched ROI.