

Software Development in Russia

*A Buyer's Guide to the Russian Software Development
and Services Export Industry*

June 2003

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Table of Contents

Preface	1
<i>Chapter One: Executive Summary</i>	3
<i>Chapter Two: Methodology and Summary Findings</i>	5
Research Sample Profile.....	5
Summary Findings	10
Application Development and Integration	11
Other Application Life Cycle Services	11
Resource Utilization and Business Models	12
<i>Chapter Three: Offshore Software Services in Russia</i>	15
Industry Overview	15
Government and Industry	16
Industry Advocacy and Collaboration	17
Outside Perceptions and Industry Realities.....	18
<i>Chapter Four: Decision Drivers, Selection Criteria, and Satisfaction Findings</i> ...	21
Why Offshore, Why Russia?	21
Cost Reduction	23
Internal Resource Drivers	23
Time-to-Market and Quality Improvement.....	23
Business Interests	24
Skills Requirements	24
Supplier Selection	25
Client Satisfaction	26
<i>Chapter Five: Supplier Profiles</i>	29
Auriga, Inc.	30
EPAM Systems, Inc.....	35
Exigen Group	39
LUXOFT	43
Mirantis, Inc.....	48
STAR Software, Inc.....	52
Vested Development, Inc.	57
APLANA Software, I.T. Co. Group.....	62

Table of Contents

GGA Software Services LLC	64
High Technologies Center, Ltd	65
SPIRIT Technologies, Inc.	66
Telma Ltd.	67
Author Profile	68
<i>Appendix A: Lexicon of Acronyms and Abbreviations</i>	69
<i>Appendix B: Related Aberdeen Research</i>	70

Figures

Figure 1: Research Sample by Industry Vertical	5
Figure 2: Research Sample by Geography.....	7
Figure 3: Research Sample by Revenue Size	8
Figure 4: Other Services Sourcing and ODC Locations.....	9
Figure 5: Utilization of Russian Software Services	10
Figure 6: Contract ODC and Project Headcount.....	12
Figure 7: Resource Utilization and Business Models	13
Figure 8: Offshore Decision Drivers.....	22
Figure 9: Russia Decision Drivers.....	22
Figure 10: Selecting a Russian Service Supplier	25
Figure 11: Client Satisfaction Findings.....	27
Figure 12: Projected Utilization	28

Tables

Table 1: Auriga Core Technology Expertise	32
Table 2: EPAM Technology Expertise	37
Table 3: LUXOFT Core Technology Expertise.....	45
Table 4: STAR Core Technology Expertise	53
Table 5: VDI Core Technology Expertise.....	58

Preface

There is a tendency among IT industry journalists, analysts, buyers, and even service suppliers to view offshore software development and outsourcing in geographic terms. At the same time, it is in the interests of national governments and IT associations to promote awareness of their country's industries and to position them as being somehow unique. Even the publication of this *Buyer's Guide* is due to the high level of interest in the Russian software development and services industries. After all, one needs to pick a destination if one plans to "go offshore."

Certainly, a country's history, culture, education system, and political and economic policies influence the nature and evolution of its industries and how outsiders look at them, especially in rapidly growing and continually evolving areas such as offshore software development and service delivery. Moreover, although issues of geopolitical risk and intellectual property rights (IPR) in individual countries are often misunderstood and overblown, they do have a role in offshore development and outsourcing decisions.

However, the problem with looking at the offshore phenomenon from a purely geographic perspective is that one tends to lose sight of the fundamental nature of business relationships. That is, *companies contract with other companies, not with countries*. Software development is a collaborative effort and the IT services industry is, after all, a relationship-based business. From this perspective, a country's labor force, educational system, etc., take on the status of natural resources. What matters most is how companies apply them, whether in the context of offshore outsourcing or as wholly owned or contracted offshore development centers (ODCs).

In trying to balance these two viewpoints, Aberdeen surveyed 50 companies that maintain ODCs in Russia, outsource to Russian or hybrid U.S.-European/Russian services suppliers, and/or collaborate with Russian software designers and engineers in other contexts. This *Buyer's Guide* includes the survey results and information gathered from interviews with individuals who use Russian resources. It also includes an overview of the Russian software development and services industry, as well as a brief survey of current political and economic conditions in Russia insofar as they relate to the industry and its overall competitive profile.

This *Buyer's Guide* is made available at no charge to interested readers through the sponsorship of 12 Russian and Russian/hybrid services suppliers (i.e., companies headquartered outside of Russia with significant development and service delivery capabilities based inside the country). These companies, which are profiled at the end

of the guide, provided access to their clients with the understanding that the survey results would be confidential and presented only in aggregate form. Several companies that participated in previous Aberdeen surveys on offshore software services also contributed to the research study.

With this in mind, Aberdeen thanks the sponsors, individuals, and companies that participated in the survey and interviews. In addition, Aberdeen acknowledges the information provided by the following individuals and organizations: Mark D. Sanor, Partner, Ernst and Young (CIS) Limited; Valentin Makarov, President, National Software Development Association, Russia (RUSSOFT); Artem E. Shardrin, Advisor to the First Deputy Minister, Ministry of Finance of the Russian Federation; Evgeny Tarasov, Director—Emerging Markets, The RiskAdvisory Group Ltd.; and Daniel Satinsky, President of the Board, U.S.-Russia Chamber of Commerce of New England, Inc.

Chapter One:

Executive Summary

Aberdeen surveyed 50 companies that maintain software development centers in Russia and/or contract with Russian or hybrid services providers. The survey results, along with comments made by corporate buyers during individual interviews, presents a picture of a Russian industry that is part of the offshore industry mainstream and, at the same time, also operates outside of the conventional definitions of “offshore outsourcing.”

On one hand, companies use Russian resources primarily to reduce software development and management costs, to utilize internal resources more effectively, and to shorten development cycles to achieve faster time-to-implementation or faster time-to-market. In addition, business and IT decision makers tend to use the same criteria to select Russian software services suppliers as they do for other companies, regardless of country. On the supply side, Russian companies offer many of the same core development language, platform, and database technology expertise as their counterparts in other countries. Moreover, a number of Russian companies also offer dedicated ODC provisioning services that incorporate both contract resource and build-to-transfer models, both of which represent a growing sector of the offshore industry.

On the other hand, Russian software service providers do not feature prominently in offshore sectors such as large-scale development and legacy application support. These activities, which often involve the wholesale transfer of day-to-day internal IT responsibilities to offshore suppliers, tend to be too large for most Russian service suppliers to take on. However, size is not the primary differentiator in this case. In fact, many Russian companies offer mainstream offshore application migration, consolidation, and maintenance services. The typical application management engagement profile involves small, dedicated teams that focus on third-level support activities.

Another characteristic of the Russian industry is that independent software vendors (ISVs) and other IT companies represent more than half of its market by vertical sector. In addition, the predominant service delivered by Russian companies is custom application development (CAD). This last point touches on a commonly held view of the Russian software development and services industry, which is characterized by small niche service providers that are focused on scientific or highly specialized applications based on complex algorithms.

Certainly, Russia's reputation for scientific, mathematics, engineering, and IT excellence have attracted the interest of enterprise technology suppliers and IT-intensive companies looking to tap into the country's rich technology labor pool, universities, and research and development (R&D) centers. Indeed, many small Russian companies specialize in what might be called "niche" technologies, such as speech, character, and facial recognition; bio-informatics; modeling, embedded engineering, and neural networks.

However, to characterize the entire Russian contract software development and services industry as being somehow outside of the offshore mainstream is to ignore its diversity of services, business models, and companies. This diversity is illustrated not only by the survey and interview results but also by the profiles of the suppliers that sponsored this *Buyer's Guide*.

In short, Aberdeen's research reveals an industry that is engaged in custom development and high-end software services for clients that require low-cost but highly skilled technology resources. At the same time, there is an emerging sector of the Russian software services industry with go-to-market strategies and experience based on vertical industry expertise, end-to-end service delivery, and balanced on-site/offshore delivery models. Considering that the offshore industry is growing and evolving at a rapid pace, it is fair to say that the picture of Russian software development and services industry is yet to be finished.

Chapter Two:

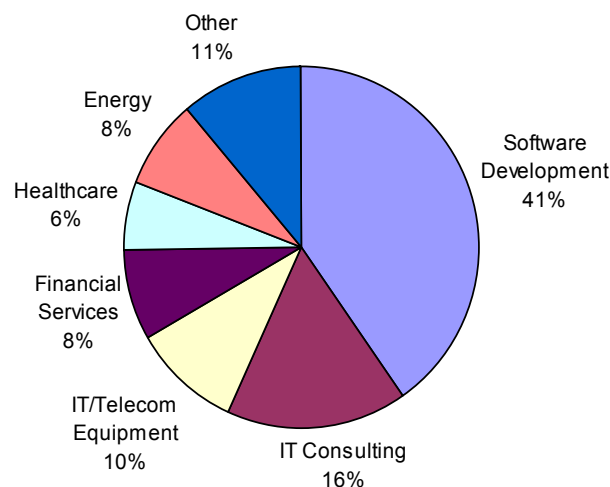
Methodology and Summary Findings

To gather data for a buyer's perspective of the Russian software development and services export sectors, Aberdeen asked the sponsoring suppliers to provide customer contact information. In addition, Aberdeen contacted a number of companies that had participated in previous offshore research projects with the understanding that these companies maintain development centers in Russia and/or contract with services suppliers that do. Fifty companies completed an online survey. Approximately half of the respondents also participated in follow-up telephone interviews.

Research Sample Profile

Companies that participated in the survey represent different industries and geographies (Figures 1 and 2) and include a large percentage of small and midtier companies (Figure 3). What is most interesting about the last data point is that offshore outsourcing is, for the most part, associated with multinational enterprises that have the resources and international business expertise considered necessary to successfully manage offshore projects and supplier relationships.

Figure 1: Research Sample by Industry Vertical



Source: Aberdeen Group, June 2003

The fact that 67% of the research sample is represented by companies in IT industry sectors is consistent with other research, most

notably the 2003 *Russian Offshore Software Development Industry Survey* of software services suppliers published by Outsourcing-Russia.com. The report noted that 74% of the customers of Russian suppliers were in IT-related sectors, including software development (50%), IT consulting (15%), and “other IT” (9%).

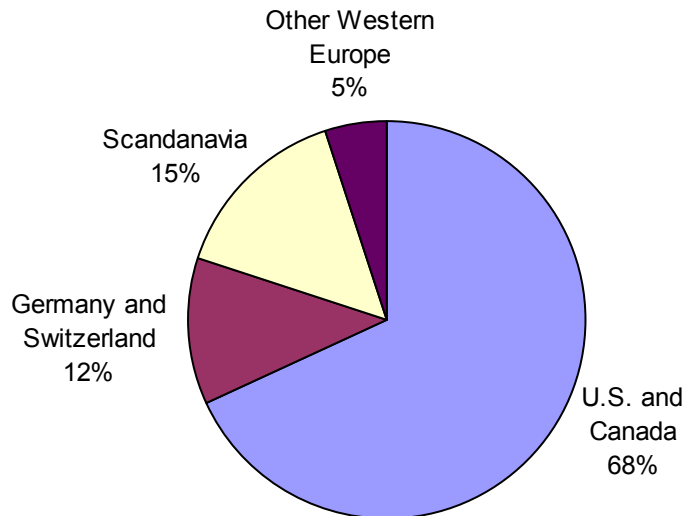
The Russian software services sector’s connection to the global IT industry is due to a number of factors. To begin with, there is the acknowledged competency of the Russian IT labor force in the fundamentals of software development and the depth and breadth of the country’s scientific, mathematics, and engineering resources. — Several leading technology companies — such as Motorola, Intel, Sun Microsystems, Nortel Networks, Dell Computers, and IBM — maintain Russian ODCs or contract with Russian suppliers for dedicated staff.

In addition, Russia’s competitive IT labor rates provide technology companies with access to senior-level individuals and specialized skills at a relatively low cost. This point was echoed by the European country-level executive of a global IT consulting company who noted that he typically subcontracted client project work to a preferred Russian supplier when equivalent local resources were either too scarce or too expensive. The same is true for ISVs faced with the challenge of finding senior-level software engineers and, at the same time, reducing product development costs.

Meanwhile, many Russian companies have, until relatively recently, lacked specific business process and industry expertise in non-technology sectors. This fact, coupled with an initial shortage of foreign language skills (especially among older technology workers), kept Russian suppliers from penetrating certain vertical markets during the industry’s early development stage. However, these shortcomings were less of a factor in the IT industry, where, as one interviewee put it, “We had engineers working with engineers [and] they always found ways to communicate.”

In addition, the vertical industry and language situations have and continue to improve. Successful projects in the financial services, health care, and process manufacturing sectors and, most notably, in R&D-intensive industries, such as bioengineering, have enabled many Russian suppliers to grow their client bases outside of the IT industry. In addition, Russia’s growing business culture and the emergence of a generation of workers who grew up during its transition to a market economy have brought greater vertical industry knowledge and business process sophistication to its software services industry.

IT-related industries have been and continue to be a natural fit for Russian software services providers, given the need for access to skilled and experienced developers and R&D resources.

Figure 2: Research Sample by Geography

Source: Aberdeen Group, June 2003

Given that North America, especially the U.S., represents approximately 65% of the global market for offshore software services, it is not surprising that it also accounts for a nearly equal percentage of the Aberdeen research sample. This number also reflects the role played by hybrid suppliers in the North American market. Russian IT professionals who were part of successive waves of Soviet-era émigrés in the 1970's and 1980's, typically head these companies, many of which are headquartered in the U.S.

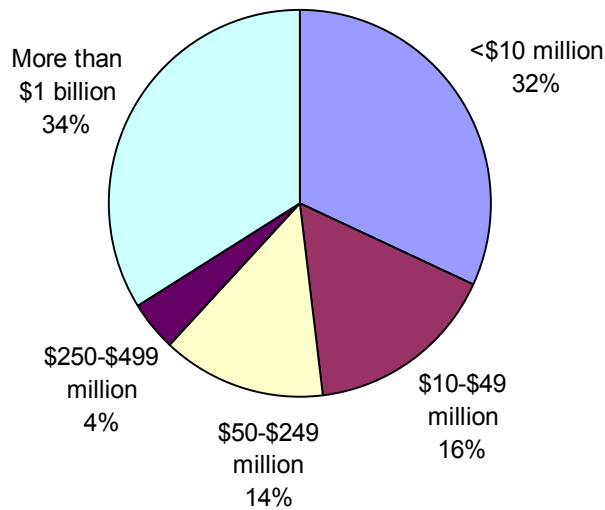
The importance of the North American market is also reflected in the fact that several leading Russian IT services suppliers have established sales offices, commercial agent relationships, or partnerships in the U.S. Moreover, the number of direct sales offices in the U.S. and the number U.S. subsidiaries are increasing as Russian companies look to build on existing client relationships. The existence of local subsidiaries in the U.S. and other target markets also enables Russian suppliers and their clients to avoid much of the bureaucracy and complexities that remain a part of the Russian political and economic environment.

Second in importance to the Russian software services industry are the Scandinavian countries, Germany, and Switzerland, which is due in part to historical and cultural connections between Russia and those areas of Europe. It also reflects the high concentration of IT-related industries in those countries and their proximity to Moscow, St. Petersburg, and other major R&D centers in Western Russia. Although there were no Japanese or other East Asia companies in the

U.S./Russian hybrid suppliers have played an important role in making Russian technology skills directly available to the North American market.

sample, Aberdeen notes that a few Russian suppliers have clients in or are targeting that geography, especially those located in former Soviet-era “science cities” of Eastern Siberia.

Figure 3: Research Sample by Revenue Size



Note: \$500 million - \$1 billion = 0%
Source: Aberdeen Group, June 2003

Small and midtier ISVs and other technology companies reported that they use Russian IT resources to reduce development costs and reduce time to market for new products.

Perhaps the most interesting characteristic of the research sample is the large percentages of companies at the extreme ends of the revenue spectrum. On one hand, the large number of companies with annual revenues of less than \$10 million is unusual in an offshore industry user sample. One explanation for this apparent anomaly is the large number of ISVs in the sample. Interviewees representing small and midtier software companies often noted that by using Russian IT resources, they were able to access experienced technology professionals, many of whom possessed specialized skills that were difficult to find or too expensive locally. Time-to-market was also a significant contributor in these companies’ decisions to use offshore Russian resources.

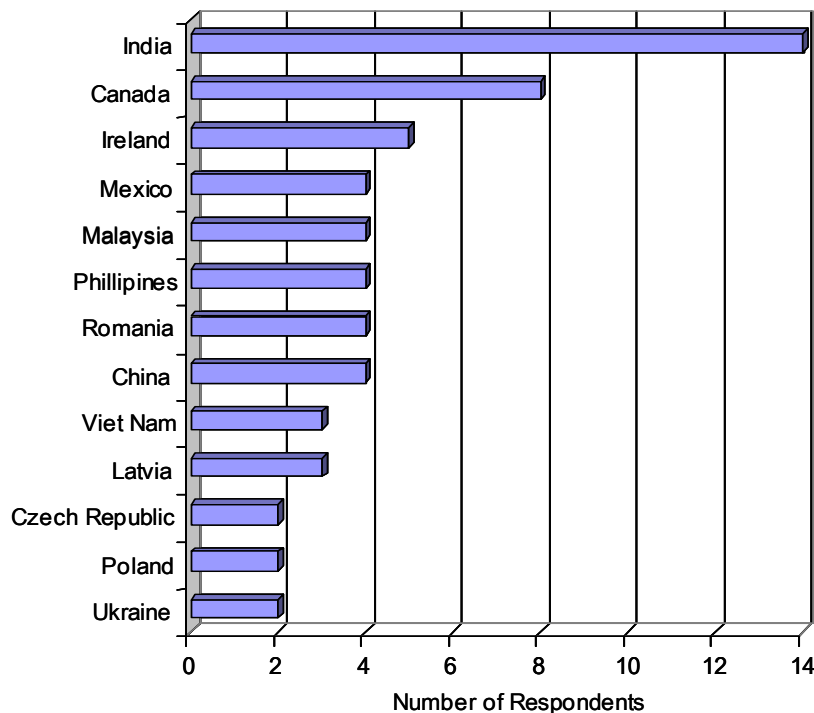
In addition, the presence of so many small and midtier enterprises in the sample is another reflection of the role of hybrid suppliers in the offshore market, many of which qualify as small and midtier companies. These suppliers often have clients because they are themselves “local” and they serve companies that typically pass under the radar screens of major IT services suppliers and big offshore companies. Several interviewees in this category stated that they were unaware of a supplier’s offshore delivery capability until they reviewed request for proposal (RFP) responses.

Meanwhile, the relatively small percentage of companies with revenues between \$10 million and \$1 billion represented in the sample — including a complete absence of companies with revenues between \$500 million and \$1 billion — is consistent with overall offshore market trends. However, with offshore development and outsourcing becoming more commonplace, and with global and U.S. and European IT services suppliers adding offshore delivery capabilities, penetration of the midtier market will increase. This will create opportunities for offshore suppliers, especially those with strong local market presences.

It is not surprising to find enterprises with annual revenues greater than \$1 billion represented in the research sample. Such companies, especially those in the Fortune 500 or Global 2000, dominate the demand side of the offshore outsourcing market. Of the 21 companies in the sample that outsource to more than one offshore service supplier and/or maintain ODCs in more than one country, 17 are in the \$1 billion-plus revenue category. This last point serves to illustrate the expansion of the offshore software services industry and the move toward global sourcing by large corporations (Figure 4).

Interest in Russian software services and the country itself as an ODC location is increasing, as more multinational enterprises adopt global services sourcing and software development models.

Figure 4: Other Services Sourcing and ODC Locations



Source: Aberdeen Group, June 2003

Companies involved in offshore development and outsourcing tend to see its cost benefits as outweighing geopolitical risks and manage the latter with policies, processes, and good governance.

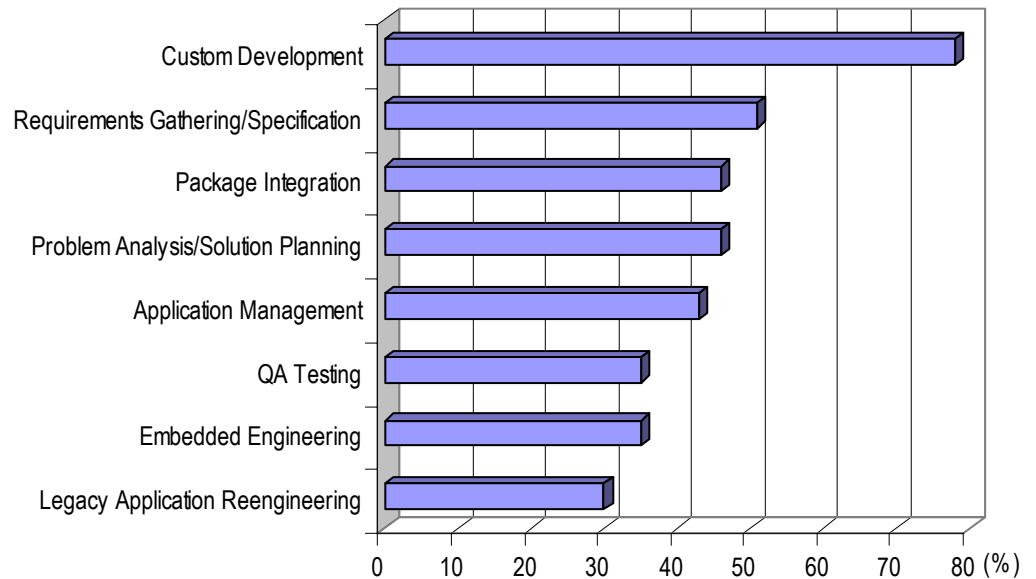
Only three of the 21 companies that outsource to suppliers in multiple countries cited as very important the need to “spread offshore risk.” Among companies with experience in offshore outsourcing, concerns related to geopolitical events have less of an impact on sourcing strategies or ODC location decisions than issues concerning technology skills, labor costs, and other factors.

Moreover, several respondents expressed the view that risk management is a policy matter best addressed in contract negotiations, supplier management, and good governance. As one interviewee noted, “I have far less control over whether or not a country might go to war than what my offshore supplier and I do in response.”

Summary Findings

Although respondents reported working with Russian services suppliers across a number of application life cycle phases and disciplines, survey responses and interviews indicated that engineers and software developers are most often involved in core application development projects (Figure 5). The percentage of CAD activity is even higher (92%) in dedicated ODC environments.

Figure 5: Utilization of Russian Software Services



Source: Aberdeen Group, June 2003

Application Development and Integration

Custom application contract work represents the majority Russian software services that are delivered to clients. These projects, as well as software development occurring in dedicated Russian ODCs, center typically on core business functions or, in the case of ISVs, on core products. The relatively high number of such projects involving Russian IT resources is atypical of the majority of offshore outsourcing initiatives, which tend to focus on non-core software development, application maintenance, and support.

ISVs reported working collaboratively with Russian suppliers or contracting for dedicated offshore teams on product development. Related activities include developing software modules, and adapters, as well as legacy product upgrade and enhancement work. Several IT industry respondents also reported contracting with Russian services providers to develop internal operations and e-commerce applications. Equipment suppliers use Russian resources for embedded application development and R&D and to create development and testing tools, whereas IT consulting companies subcontract to Russian service providers on a variety of client projects.

Russian software providers also develop custom supply chain management (SCM), customer relationship management (CRM), content management and electronic publishing, and project and asset tracking systems, as well as other business applications, often in the context of client e-commerce initiatives. Russian companies are also heavily involved in developing database management systems, decision support systems, and other business support applications.

In the area of enterprise application package implementation services, there is little activity on the part of Russian suppliers. This finding also applies to the offshore industry in general. CRM, SCM, and enterprise resource planning (ERP) package implementations tend to require specific vertical industry and process expertise and heavy on-site interaction with business decision makers, stakeholders, and internal IT organizations. On the other hand, a number of respondents reported outsourcing post-implementation package management activities to Russian software service providers.

Other Application Life Cycle Services

Survey respondents reported the relatively high level of involvement by Russian software services companies in project planning, requirements gathering and analysis, and specification design activities, which is particularly noteworthy given that these life cycle activities are not typically associated with software offshore outsourcing. This finding supports a growing consensus view of Russian en-

Although most Russian software services providers offer a variety application life cycle services, contract custom application development represents the majority of the project work in which they are involved.

An important part of the business of many Russian companies involves managing applications that they helped develop.

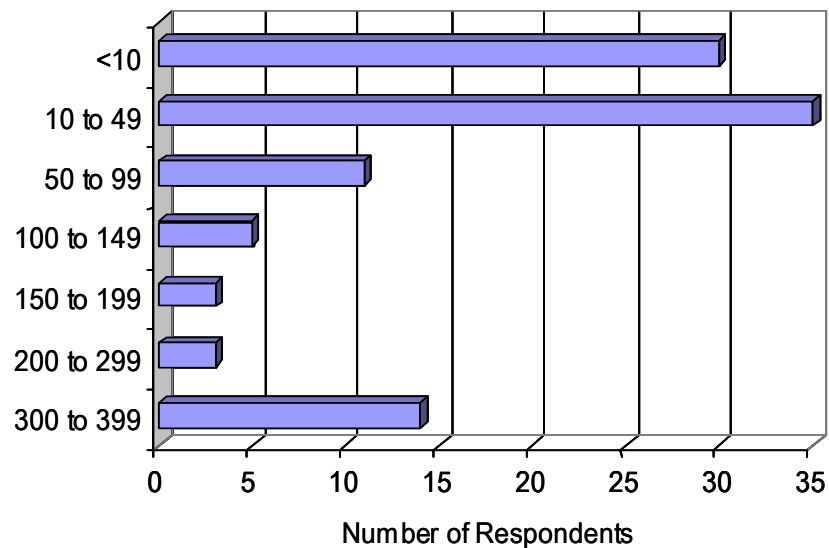
gineers as being technology problem-solvers rather than simply low-cost programmers.

Respondents also reported a relatively high utilization of Russian resources for other application life cycle functions. In the area of application management, for example, several companies noted that the same suppliers they worked with to help develop applications are now under contract to enhance and maintain them. Testing services, independent of contract application development, also play a relatively important role in respondents' use of Russian resources. So, too, do legacy application reengineering services such as Web-enablement, migration, and consolidation.

Resource Utilization and Business Models

Survey responses indicated the sizes of Russian project teams working on outsourced initiatives and in contract and wholly owned ODCs to be small (Figure 6).

Figure 6: Contract ODC and Project Headcount



Source: Aberdeen Group, June 2003

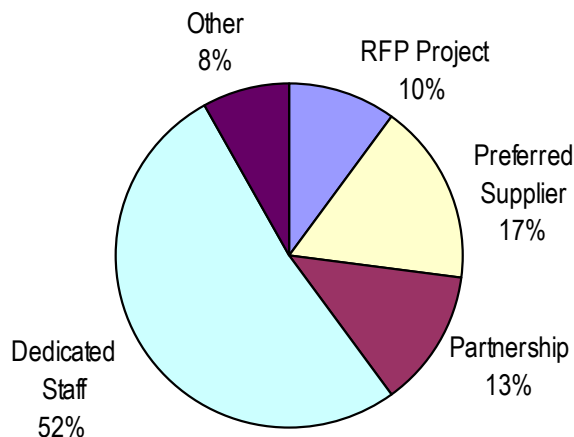
One explanation for the small project and ODC staff numbers is the fact that even a large Russian offshore software service company typically has no more than 250 employees, with 450 to 500 representing the high end. In its survey of the Russian offshore software development industry, Outsourcing-Russia.com noted that the leading suppliers average 150-plus permanent staff.

Meanwhile, Ernst and Young, in its study of the Russian IT industry, put the number of employees in the wholly owned ODCs of companies (such as Motorola and Intel) at between 150 and 200 employees. Ernst and Young noted that these and other multinationals operating in Russia plan to hire new personnel aggressively over the next few years, in some cases doubling current numbers by 2005. However, looking at staffing numbers alone ignores the development activities and services sectors in which Russian resources figure most prominently; i.e., CAD and early-stage application planning, requirements gathering and analysis, and design.

Compared with most mainstream offshore outsourcing initiatives — which tend to focus on cost reduction through labor arbitrage and the wholesale transfer of non-core functions — CAD and early-stage activities involve small, focused teams made up of experienced, highly skilled individuals. This also accounts for the relatively small size of project teams and dedicated contract resources. In addition, many Russian and hybrid suppliers work with small- and midtier ISVs and other IT industry clients that neither need nor can afford to maintain large resource pools on an ongoing basis. Here, too, the emphasis tends to be on resource quality rather than quantity.

Although ODC provisioning accounts for the higher numbers (100 and above) in Figure 6, more than half of the survey respondents noted that their relationships with Russian suppliers were based on having access to dedicated resources regardless of the size and duration of the project or projects (Figure 7).

Figure 7: Resource Utilization and Business Models



Source: Aberdeen Group, June 2003

Several Russian companies have achieved preferred supplier status with companies that maintain relationships with more than one offshore supplier. These relationships tend to vary, with some companies issuing individual RFPs to preferred suppliers who then compete for the business. However, in other cases, the client company builds a stable of preferred suppliers based on specific technology skills and services specialties. Examples involving Russian suppliers fall into both categories.

Relationships based on one-time RFP-based projects with a possibility for repeat business is consistent with systems integration and other classic IT services models. When working with offshore suppliers, however, especially on CAD initiatives, companies tend to contract for dedicated resources regardless of the size of the project or its duration. Often, such projects end up generating repeat business and evolve into long-term relationships in which the original team remains attached to the client.

Chapter Three:

Offshore Software Services in Russia

According to Outsourcing-Russia.com, more than 150 Russia-based companies are active in offshore software development (source: *The Russian Offshore Software Development Industry Survey*, 2003). In addition, a number of foreign companies have established wholly owned Russian ODCs or contract with Russian and hybrid suppliers for dedicated staff and facilities. A majority of these foreign companies are represented by ISVs or other technology companies, as are the clients of Russian service providers.

The typical profile of a Russian offshore software services supplier is one of a privately held, owner-operated company. Indeed, the industry as a whole is entrepreneurial in nature, having developed independently of any outside influences, including the Russian government. At the same time, the picture of Russian software services companies as small niche players that focus on technology markets is changing, as is the industry itself. In this chapter, Aberdeen briefly examines some of shared characteristics that define the Russian software development and services sectors, as well as internal and external change agents that are likely to influence its future.

Industry Overview

In its 2002 study of the Russian information and communications technology (ICT) market, Ernst and Young noted that offshore programming and related application management services (including foreign ODC activities) are Russia's primary IT export. Estimates of the market size for Russian software services range from \$150 million to a high of \$250 million. Some sources estimate that the sector has been growing at approximately 50% a year. Ernst and Young, however, estimated that offshore programming revenue increased 2.5 times between 2000 and 2002, and projects a 23% CAGR for the next five years.

The discrepancies between current revenue and growth estimates among analysts and other market watchers are indicative of overall nature of the Russian software services industry. Because companies are privately held it is difficult to obtain complete and accurate revenue numbers. In addition, the industry as a whole is characterized by fragmentation, a lack of qualified project managers and business subject matter experts, a generally unfavorable view of Russia as a place to do business, and a government/industry relationship that can best be described as ambivalent.

Conversely, Russia has more personnel working in R&D than any other country in the world, and, according to United Nations Education Scientific and Cultural Organization (UNESCO) figures, is the third-ranking country in per capita number of scientists and engineers. Moreover, Russia's growing economy and improving business culture have helped overcome lingering memories of the 1998 economic collapse, helped transform the country into a desirable market for foreign companies, and has resulted in an overall noticeable increase in foreign investment. In addition, Russian software services companies have been quietly building a solid and growing client base over the past few years in spite of past negative perceptions of the country's business climate.

Government and Industry

The relationship between the Russian government and the country's offshore services industry has been ambivalent at best, although the former's growing awareness of the importance of IT lobbying by the industry is resulting in some positive changes.

In a November 2001 report on the global software outsourcing industry, Aberdeen quoted one Russian software services company executive as saying that, from the industry's perspective, the role of the government was one of "merciful neglect." Compared with its focus on the oil industry and other major sources of foreign currency and investment, the Russian government has paid little attention to the IT industry in general and the offshore services sector in particular.

Historically, the Russian government has done a poor job of keeping track of the IT industry, resulting in limited and often unreliable statistical data and key performance indicators. This paucity of information, coupled with a lack of commercial lending sources, made it difficult for Russian suppliers to acquire outside investment. Moreover, the lack of a modern communications infrastructure outside of major cities, such as Moscow and St. Petersburg, also hampered the early development of the Russian offshore industry.

As seen by Russian software services companies and, in some cases, by their clients, the biggest problem with the Russian government and its influence on the country's business culture is a lack of overall business transparency, a complex bureaucracy, and restrictive tax, customs, and immigration laws (although the country's problems with human capital flow is as much the responsibility of foreign governments as the Russian system). Russia's tax laws are a particular bone of contention for suppliers, forcing many of them to operate in regulatory gray areas with regard to employee compensation and client contracts.

To get around the tax problems, many suppliers have established legal entities outside of the country that are separate from the Russian entity — the foreign client contracts with the "offshore" entity, which then transfers funds to the Russian entity while minimizing its level of activity in the client relationship in order to reduce the tax

burden. Russian companies also use creative compensation plans, including setting-up employee bank accounts in Latvia and other former Soviet Bloc countries that allow for the relatively free flow of funds in and out of Russia. Moreover, the existence of foreign legal entities also serves to mitigate potential client concerns with respect to contract enforcement.

Although Russia's tax system represents a major obstacle to foreign investment and the growth of industries such as offshore software services, the government has made some significant steps toward making the system less complex and intimidating, according the American Chamber of Commerce in Russia. The government has already taken steps to lower the tax burden on individuals. However, the optimistic outlook for tax reform is based on a two-to-three year timeframe to complete the process.

Meanwhile, continued political and economic stabilization in Russia have served to improve outside attitudes toward the country. In addition, the Russian government is planning to introduce tax incentives for software services suppliers in keeping with a growing recognition of the IT sector's importance to the nation's economy. This recognition is reflected in activities such as the U.S.-Russia IT Summit organized by presidents Putin and Bush, and the follow-on meetings involving U.S. and Russian companies. The government is also investing in the national communications and computing infrastructure, most notably through its Electronic Russia Program (e-Russia).

Industry Advocacy and Collaboration

Much of the drive toward improving business contentions in Russia for IT in general and offshore suppliers in particular has come from industry associations. These groups have taken on a role similar to that of NASSCOM in India, which acts as both a government lobbyist and as a promoter of the country's IT and business process outsourcing industry abroad.

The largest and most active internal lobbying organization is the Information and Computer Technologies Industry Association (known by its Russian acronym APKIT). With a membership that includes Russian companies and the CIS units of global IT industry giants such as IBM, Intel, Hewlett-Packard, Microsoft, Cisco, and Xerox, and others, APKIT's goals and objectives are to represent the consolidated opinions of individual companies in negotiations with public authorities. In that regard, the organization defines its role as defending the interests of its members and the IT industry in Russia; as an advocate with representative and executive branches of the Russian Federation on issues of legal, economic, and social development; and to act against monopoly and unfair competition, among other activities.

Russian offshore services suppliers have developed mechanisms for shielding their clients from the complexities and uncertainties of doing business in the country. However, only fundamental changes to Russia's business culture and systems will resolve systemic problems and change outside perceptions.

Looking after and promoting the interests of the Russian offshore services sector are such groups as the Fort-Ross Consortium, Info-rus, Silicon Taiga, and RUSSOFT. The activities of these groups vary from promoting their respective members to acting as information and marketing consortia. Groups such as Fort-Ross and Silicon Taiga, for the most part, represent the interests of members from the same geographic regions. The largest organization, RUSSOFT, is, on the other hand, an APKIT member that lobbies on behalf of its members (primarily companies headquartered in Moscow and St. Petersburg) internally, as well as organizes and takes part in international trade shows and seminars such as U.S.-Russia IT Roundtable conferences.

There are a number of industry associations and consortia attempting to increase awareness of the Russian software services industry or their member companies. Too many, however — there is a risk of diluting the overall message.

The existence of multiple organizations, especially those looking to promote Russian software services abroad, both reflects the historic fragmentation of the country's offshore industry as well as more recent efforts to create a "Russian brand" and improve awareness among foreign business and IT decision makers. Whether or not the collective goals and objectives of these organizations can be best accomplished individually or through some sort of consolidation remains to be seen.

The same can be said for the companies themselves and their prospects for increasing market share and revenues. Of the 150 services suppliers identified by Outsourcing-Russia.com, 38.7% are less than three years old and average 31 employees; companies between four years and six years old (16.1%) average 96 employees. The remaining 45.2% (companies that are seven years old and older) average 202 employees. For the overwhelming majority to compete for large-scale offshore initiatives and to staff-up to meet the requirements of companies looking to transfer entire internal IT functions overseas, some amount of consolidation will have to occur among them.

Outside Perceptions and Industry Realities

Efforts at raising the level of awareness of the Russian software services industry among C-level executives and individuals involved in offshore outsourcing decisions are taking place and producing positive results for some companies. However, with increased awareness come perceptions that have had a negative impact both the industry and individual suppliers, from the perspective of market expansion and revenue growth.

Some of these negative perceptions are a result of a tendency on the part foreign news outlets to focus on problems in Russia, such as crime and corruption. Although the country has suffered and continues to suffer from these and other internal problems, there has been little or no impact on its software services industry, according to the

companies that participated in the research for this report. This includes incidences related to IPR, one of the most relevant offshore outsourcing topics to companies, especially those in the IT industry.

When looking at the issue of IPR in the context of offshore outsourcing, it is important to distinguish between protection of copyrighted materials — videocassettes, sound recordings, books and musical compositions, packaged software applications, etc. — and other forms of intellectual property, such as business data, internal applications and algorithms, and trade secrets.

With regard to copyrighted materials, a 2002 Special 301 Report on Russia by the International Intellectual Property Alliance (IIPA) found that the estimated revenue loss for business software application copyright infringements in the country amounted to 83% in 2001. The equivalent numbers for China and India were 93% and 69%, respectively (*IIPA 2002 Special 301: Peoples Republic of China* and *IIPA 2002 Special 301: India*).

In all three cases, the countries in question are signatories to all major international agreements and have strong laws designed to protect copyright owners. At the same time, the problem is a fundamental lack of enforcement in spite of the efforts of all three governments to deal with the issue from the top down. However, there have not been any reported incidences of intellectual property theft by offshore services providers in India, Russia, or China, although there have been cases of industrial espionage.

Ultimately, offshore software services companies, as with all IT services providers, are in the relationship business. One reported incident of intellectual property theft and such a company is out of business. At the same time, it is critical that companies involved in outsourcing to any service supplier conduct a strict internal study to determine what intellectual property should or should not be handed over to a third-party, regardless of its location and legal system. In addition, common sense and due diligence require that companies examine every potential service supplier's reputation, legal standing, hiring practices, employee and IT security, and business continuity policies and practices.

Another issue relative to the Russian software services industry is the overall perception of the industry as being made-up of small, niche suppliers that specialize in science and math-oriented projects involving complex algorithms. Although Aberdeen and other research indicates a high level of individual industry and technology specialization among Russian companies and a tendency on the part of buyers to seek specialized skills, the Russian IT services industry is becoming more diversified. Several of the larger suppliers offer a

Potential buyers of offshore services must be aware of threats to intellectual property, but must also understand the differences between copyrighted materials, internal data, and business knowledge, and to follow appropriate due diligence and governance best practices.

full range of IT consulting, systems integration, and application management services.

Chapter Four:

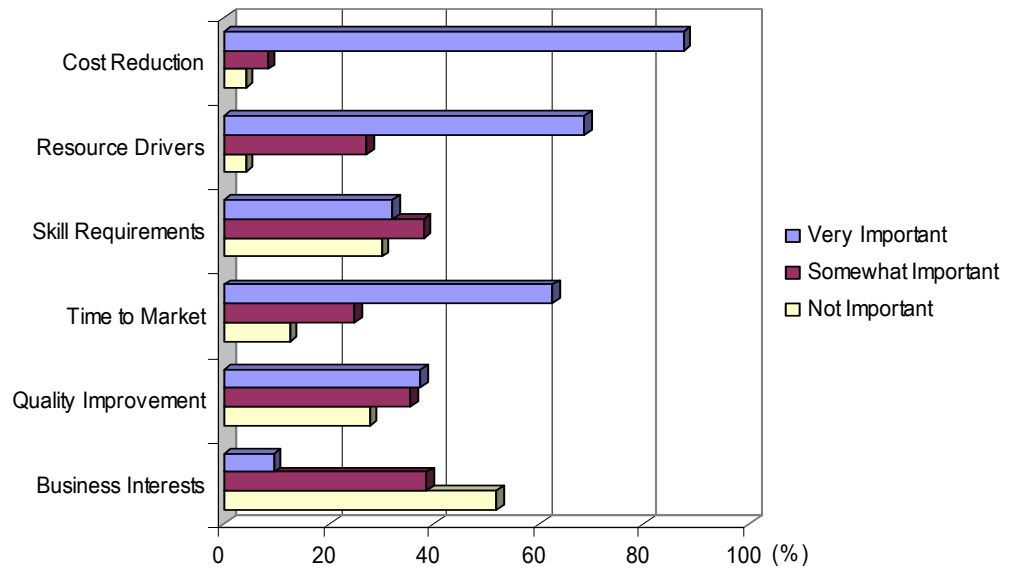
Decision Drivers, Selection Criteria, and Satisfaction Findings

Geography, history, culture, language, and government policies contribute to the development and growth every country's industries. To what extent do geographic, cultural, and related issues influence companies' offshore decisions and what impact does national differences have on those decisions? On the other hand, at what point or to what extent do the qualifications, viability, reputation, delivery model, cultural adaptability, and hourly labor rates of individual companies enter into decision processes?

Why Offshore, Why Russia?

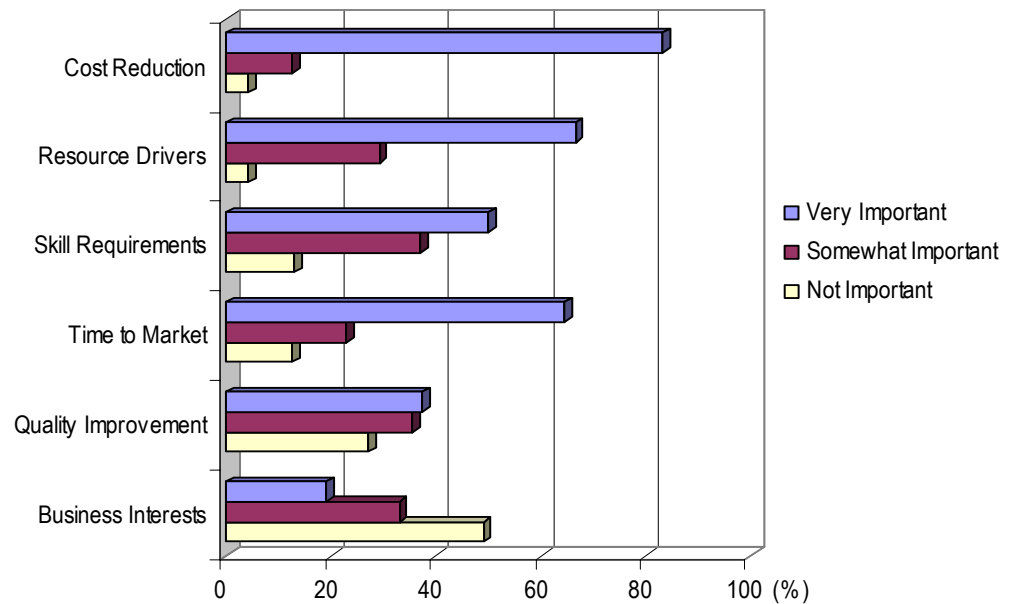
Aberdeen asked the survey participants two sets of related questions. The first focused on the relative importance of the reasons for locating software development and related application life cycle activities offshore, regardless of the country in question (Figure 8). The second question asked the participants to identify and rank order the same decision drivers with regard to directly or indirectly locating software activities in Russia (Figure 9).

Figure 8: Offshore Decision Drivers



Source: Aberdeen Group, June 2003

Figure 9: Russia Decision Drivers



Source: Aberdeen Group, June 2003

Cost Reduction

Given the current state of the global economy, it is not surprising that the chief offshore decision driver in both cases is cost reduction. Indeed, the desire to reduce costs is a constant in outsourcing, regardless of the industry, economic conditions, or function being outsourced. IT labor costs in Russia, though not the lowest among countries associated with offshore outsourcing, are competitive, especially in high-skill scientific and engineering disciplines.

Concurrently, economic growth in Moscow and St. Petersburg is driving-up labor costs in those cities. Although those locations remain competitive in a global context, Russian suppliers and multinationals that maintain Russian ODCs are also locating new or expanding existing facilities in lower-cost cities and former Soviet R&D centers, such as Nizhny Novgorod, Novosibirsk, and Sarov.

Cost reduction is the chief reason why companies adopt offshore outsourcing or ODC strategies, regardless of the destination country.

Internal Resource Drivers

Internal resource issues, due either to budget constraints or to labor shortages, are consistently cited as the second most important reason for locating software activities. For example, throughout the late 1990's and into 2001, developed economies were experiencing IT labor shortages, resulting in some countries adjusting their immigration policies and the growth of offshore outsourcing.

With reduced IT spending, however, resource drivers merge with cost reduction. Companies faced with flat or shrinking IT budgets move non-core software maintenance and support offshore, allowing internal staff members to focus on business-critical activities. Others also go offshore to augment internal skills. Although most offshore activity represented in both sets of responses is focused on outsourcing non-core activities, several interviewees noted that they also use Russian resources in the latter role slightly more often.

Companies citing budget and resource constraints noted that they use Russian resources to add required skills, as well as to free internal staff to focus on core activities.

Time-to-Market and Quality Improvement

Two drivers that are particularly important to the offshore decision are time-to-market and quality improvement. The former has to do with companies being able to take advantage of time differences in order to lengthen workdays and shorten project schedules.

The eight-hour time difference between Moscow and the east coast of the U.S., for example, allows geographically separated teams to collaborate during overlapping shifts. ISVs in the research sample also identified that collaboration between on-site and Russian offshore organizations improved time-to-market for new products. In this regard, the research sample's use of Russian resources is consistent with that of the offshore industry overall.

On the quality improvement side of the ledger are the International Standards Organization (ISO) 9001 and Software Engineering Capability Maturity Model (SEI CMM). ISO 9001 and SEI CMM certifications are becoming increasingly commonplace in the offshore industry. However, Russian companies lag behind their Indian counterparts in overall percentage of companies with CMM certifications (in fact, the Indian industry leads all other countries in CMM Level 5 certifications — the highest level).

SEI CMM certification has become an entry-level requirement in the offshore outsourcing industry, driving suppliers to seek certification even though their current processes may already be quite mature.

Several interviewees indicated that they expected and achieved quality improvements using Russian resources, ISO- or CMM-certified or not, because development teams tended to consist of small, highly focused, and relatively senior individuals. In addition, ISVs and technology suppliers, which form the majority of users of Russian resources, typically require that offshore suppliers and/or ODCs adhere to their internal standards, which tend to be more mature than those of other industries.

However, ISO and CMM certification have taken on “minimum requirement” status in offshore requests for proposals (RFPs). Thus, more than 35% of Russian IT services suppliers plan to achieve CMM status in the near future, according to the Outsourcing-Russia.com industry survey. In the same study, 9% of respondents were already certified at CMM Level 3 or higher.

Business Interests

Some companies see ODCs and relationships with offshore service providers as providing an entree into new markets and locations from which to serve customers in different countries.

Although most companies adopt offshore outsourcing primarily to reduce costs or efficiently manage resource requirements, others are driven by market decisions. China is a case in point. Not only does the country’s low manufacturing cost attract foreign technology investment, but so too does the fact that it is the world’s fastest growing economy. Companies looking to penetrate that market recognize that they must locate there to do business there.

With its domestic economy growing at a 6%, CAGR for the past four years and with improving business conditions Russia is becoming a more attractive location for foreign companies for outsourcing and ODCs and as a market. Technology companies, in particular, are looking at Russia’s projected 20% domestic five-year ITC CAGR. Of the 21 respondents that reported maintaining ODCs or outsourcing in more than one country, four cited business interests in Russia as being very important and seven reported it as being somewhat important. Corresponding numbers for other countries were two and eight.

Skills Requirements

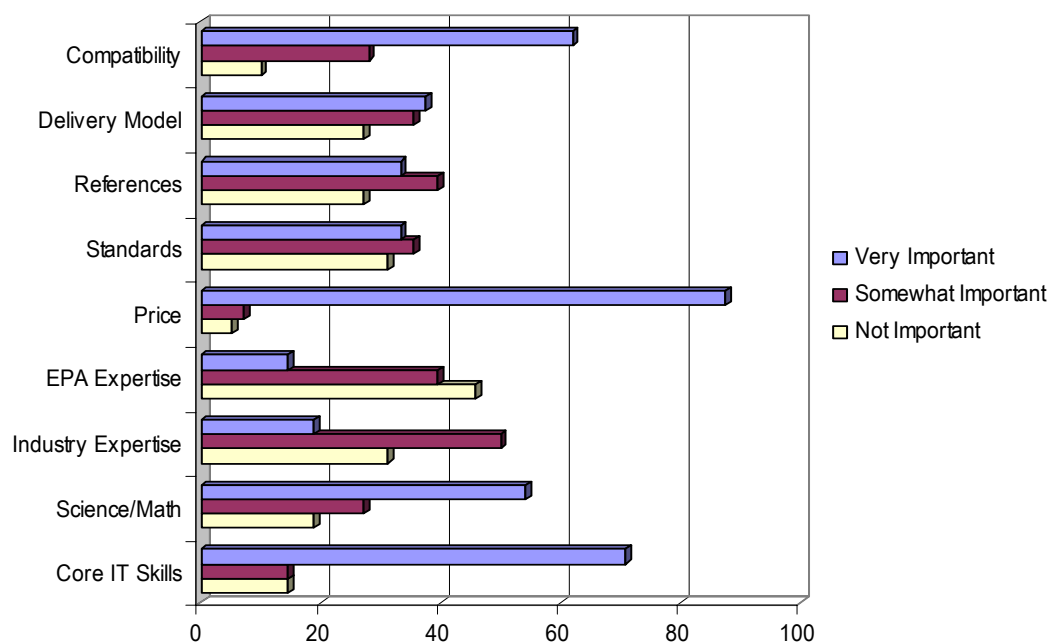
The most notable difference between overall offshore decision drivers and those specific to Russia is in the area of skill requirements.

Approximately 50% of the respondents indicated that access to strong, specialized technical skills — as opposed to standard programming language, platform, and database skills — is very important. The same figure for offshore outsourcing in general is approximately 30%. This finding is consistent with other studies indicating that although cost reduction is the principal offshore driver regardless of country, the depth and quality of Russian engineering, mathematics, and scientific skills is an important factor among companies that directly or indirectly conduct software development and related activities in Russia. It also indicates why ISVs and technology suppliers in general comprise the largest industry segment that uses Russian resources.

Supplier Selection

Research participants were asked to rank order the criteria they used to select Russian or hybrid services suppliers. The questions related not only to outsourcing but also to other business models that included joint ventures and ODC provisioning. Interestingly, in decisions related to offshore outsourcing in general versus outsourcing to Russian suppliers in particular, respondents ranked cost reduction as slightly less important in the latter case. However, when it came to selecting a particular supplier, price competition led all other decision drivers (Figure 10).

Figure 10: Selecting a Russian Service Supplier



Source: Aberdeen Group, June 2003

The level of importance assigned to different selection criteria is relatively consistent, regardless of the supplier's country of origin, with the exception of access to specific technical and scientific resources.

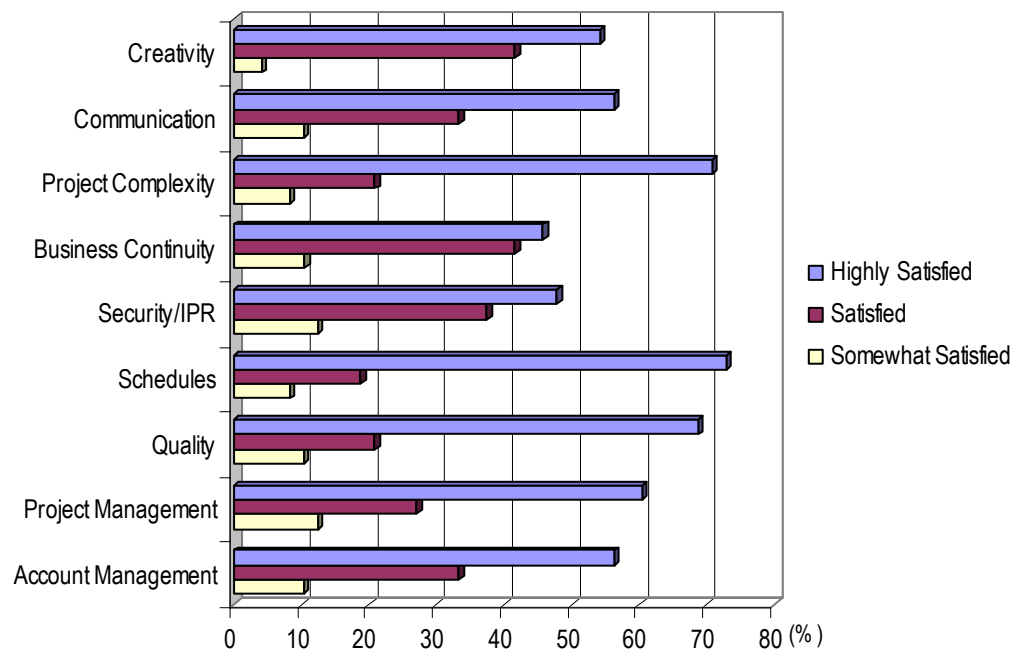
In addition to price, the relative importance of the criteria used to select Russian service providers is consistent with those used to select offshore suppliers regardless of country. Not surprisingly, the second most important criterion is technical competency; that is, does the supplier's staff possess the required development language, protocol, operating system, or database competency? However, as noted above, the importance of being able to access scientific, mathematics, and other specialized skills ranks as more important when the country in question is Russia.

The emphasis on compatibility is also consistent with other Aberdeen research on offshore supplier selection criteria. Supplier staff that interacts with clients must not only speak the client's language, they must also work in a collaborative fashion by adapting to different business cultures. In the same context, delivery model, although not as important, relates to how the supplier balances on-site and offshore resources. References also tend to be less important than other criteria, because clients prefer to use their own standards and judgment when sizing up companies and people with whom they intend to collaborate.

The relatively moderate level of importance assigned to vertical industry and enterprise package application (EPA) expertise is consistent with offshore supplier selection criteria in general. EPA initiatives require business process knowledge during planning and design phases, and tend to be location-intensive during implementation. After ERP, SCM, or CRM implementations reach the operational stage, however, they become candidates for outsourced application management and the importance of package expertise increases. Standard certifications, such as ISO or SEI CMM, are also moderately important to decision makers.

Client Satisfaction

Research participants were asked how satisfied they were with the performance of their Russian or hybrid service supplier. Their responses indicated relatively high levels of satisfaction across all major categories. These findings are, for the most part, consistent with service industry norms, in which 80% client satisfaction (i.e., satisfied to very satisfied) is a realistic goal (Figure 11).

Figure 11: Client Satisfaction Findings

Note: Not satisfied = 2% in Security/IP and Business Continuity;
0% for all other categories

Source: Aberdeen Group, June 2003

Although early studies of the Russian software services industry pointed to an overall lack of experienced project managers, the survey respondents gave their suppliers uniformly high marks in project-management activities in general, as well as in specific areas such as adherence to schedules, milestones, and communication. Conversely, several respondents noted that their suppliers needed to improve in the area of account management, noting that a lack of experience in “soft” business skills sometimes kept Russian companies from gaining recognition among high-level client decision makers. As one interviewee noted, “My Russian team is great on delivery but they’re short on schmoozing.”

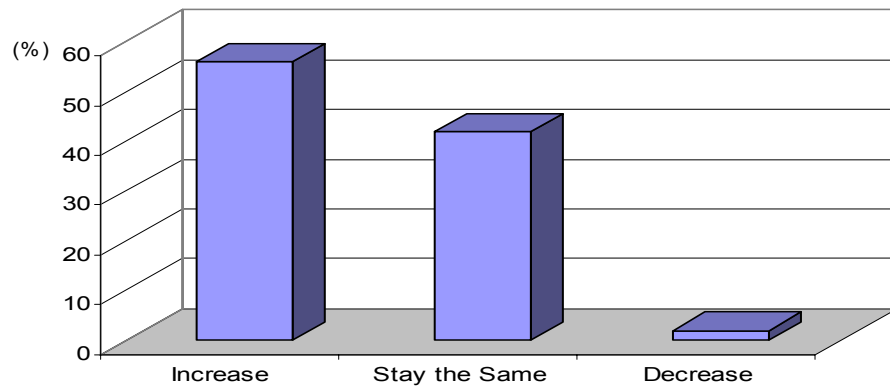
Despite the comparatively low number of Russian suppliers that have achieved standard process certifications, respondents gave their suppliers high marks for quality delivery (e.g., error-free code). In addition, the survey responses confirm the reputation of Russian engineers and developers for creativity and an ability to solve complex problems.

The only two categories in which the “highly satisfied” responses did not greatly outnumber the “satisfied” responses — and where

there was one “not satisfied” response — had to do with business continuity, IPR, and security practices. Although the combined “highly satisfied” and “satisfied” responses exceed 80% in both categories, a number of interviewees noted that, given the country’s poor record in the area of IPR, Russian suppliers need to be more proactive in codifying and promoting their business continuity, IPR, and security policies and practices.

Finally, the high levels of client satisfaction received by software services suppliers is echoed in survey responses to a question asking if respondents’ intended use of Russian resources would increase, decrease, or stay the same (Figure 12). In addition, the 50% response indicating a planned increase is consistent with consensus projections for the growth of the Russian contract development and software services sectors.

Figure 12: Projected Utilization



Source: Aberdeen Group, June 2003

Chapter Five: **Supplier Profiles**

The participating sponsors of this *Buyer's Guide* represent a cross section of the Russian software development and services industry. All 12 companies offer deep technical skills and a wealth of project management and good governance expertise in addition to decades of collective experience collaborating with international clients.

At the same time, they characterize the growing diversity of the Russian software and services export sectors, spanning the spectrum in terms of size, breadth of services, solutions expertise, and industry specialization. They also range from a software product company to full-service IT consulting, systems integration, and offshore outsourcing service providers and reflect a variety of business models from Russia-based offshore to hybrid services suppliers.

Auriga, Inc.

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Sergei Riabov, Director, Business Development
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Company Overview

Supplier Snapshot	Founded: 1990
	Office Locations: U.S.: Amherst, NH
	Development Centers: Russia: Moscow
	Number of Employees: 130
	Quality Certification(s): SEI CMM Level 4 (pending)

Auriga, Inc. is a registered U.S. corporation with an affiliated company in Moscow. The company was founded in 1990 by Dr. Alexis Sukharev and several other computer scientists and researchers from Moscow State University and technical institutes in the Moscow area. Originally incorporated in the State of New Mexico for the purposes of doing software development projects, Auriga is now headquartered in Amherst, NH. With more than 100 Moscow-based engineers and developers, Auriga has evolved into a technology-focused IT consulting company, specializing in offshore and collaborative in-house software development projects for a diverse customer base.

Auriga combines onshore account and project management with offshore resources to provide information technology offshore outsourcing services encompassing the software application life cycle: In September 2002, Auriga's offshore capabilities were highlighted in one of 15 case studies in an Aberdeen report, titled *Offshore IT Best Practices: Building Successful Relationships on a Diverse Delivery Model*. The company's core services include systems programming and programming for Web-enabled applications, client/server systems, and database applications.

Market Position

As a U.S. company, Auriga serves a largely North American customer base. Although the company's primary vertical industry focus is on IT hardware and software manufacturers, Auriga also has several clients in the government, aerospace, education, and telecommunications and networking sectors. Since its founding Auriga has delivered solutions to a number of Fortune 500 companies, including Fidelity Investments, IBM, Hewlett-Packard, Motorola Computer Group, Intel, Siemens, Putnam Investments, among others.

Since 2002, Auriga has delivered software solutions to several New England state government organizations under the auspices of ITS07, a shared contract vehicle. As a mark of its focus on collabo-

ration and quality delivery, Auriga continues to maintain close relationships with many of its original clients, including LynuxWorks, BroadVision, Pilot Software, Pigeon Point Systems, and NMS Communications.

Key Solutions and Technologies

Auriga has implemented large and midsize projects that span the IT life cycle, including software development, software integration, software porting/migration, QA and testing, and release engineering. These capabilities are integrated into the company's core services offerings of systems level software development, Web-enabled solutions design and implementation, and sustaining engineering.

- *Systems software development* — Auriga is experienced in product development on all major computing platforms and operating systems, including real-time and embedded systems; complete Linux/Unix solutions; Windows NT/2000/XP internals and applications; industrial and telecommunications process systems; computer telephony and VoIP; and networking systems.
- *Web-enabled solutions* — Auriga's business solutions sectors include content and document management systems, configuration reporting and auditing tools, Web site analysis solutions, and enterprise information systems. Among the projects that the company has delivered are corporate Web sites that present client companies to a world of customers, suppliers, and partners; information portals that manage knowledge bases, provide personalized page appearance and access rights, and integrate client software for authorized users; Web content management applications that enable online business information creation, management, and version control.
- *Sustaining engineering* — Auriga has evolved a mature methodology-based service that has enabled large organizations to maximize the value of installed applications. The company's comprehensive offshore maintenance service includes bug fixes and corrective maintenance; adaptive maintenance to support changing business or technical environments; enhancements to add new application functionality and reports; and preventive maintenance to increase applications maintainability through data rationalization and performance tuning.

In delivering these and other solutions, Auriga engineers access decades of collective experience and expertise in a broad variety of programming languages and technologies (Table 1).

Table 1: Auriga Core Technology Expertise

Systems Programming	Assembler languages for embedded architectures and platforms: Intel, PowerPC (including AltiVec), Alpha, MIPS, ARM, Xscale, ColdFire, SuperH, and others
	Unix scripting: Tcl/Tk, Expect, Visual Tcl, and all Unix command line tools
	C, C++
	Operating systems: VxWorks, LynxOS, OSE, Windows NT Embedded, embedded Linux, Windows 2000, Windows XP, Solaris, SCO OpenServer, SCO UnixWare
	Hardware platforms and technologies: PCI, CompactPCI, VME, and ISA buses; StarFabric and GigaBridge switching fabrics; and SCSI/SCSI2, iSCSI, Fibre Channel communication and data storage solutions
	Network applications, drivers, and protocols: Internals of BSD 4.4-based TCP/IP stacks, STREAMS-based TCP/IP stacks
Internet Technologies	Web services: Perl, Java, XML
	Web servers: Netscape Enterprise Server, Microsoft IIS, Apache
	Application servers: BEA Weblogic, IBM WebSphere, Oracle Application Server, Microsoft Transaction Server
	BDatabase servers: Oracle, MS SQL Server, Sybase
	ORB providers: Inprise VisiBroker, Iona Orbix
	Web design tools: Borland JBuilder, Microsoft Inter-Dev, Extensibility XML Authority, Macromedia Flash

Source: Auriga, June 2003

Service Delivery Model

Auriga provides project-based software development services as well as dedicated offshore software engineering teams for long-term assignments. Each dedicated team works as an extension of Auriga client engineering organizations. The company's staff selection and personnel policies have allowed Auriga to build stable and highly professional offshore project teams. These teams operate under a project management methodology that ensures accuracy, efficiency

and client satisfaction throughout all stages of a project life cycle. The methodology fully complies with the requirements of SEI CMM Level 3 and ISO 9001 standards. Auriga is currently undergoing a CMMI Level 3 certification assessment.

Auriga's project management processes form a management system that allows companies to effectively monitor the project, avoid deadlines and schedule constraints, apply risk management mechanisms immediately when necessary, and provide integrated communication with the client across different phases of the project. All processes are documented, usable, and consistent with the way the work actually is done. The company has also developed procedures that provide integrated communication with clients to ensure continuous and well-managed knowledge transfer. During a project's requirements-gathering phase, Auriga's engineers will typically move on-site for two weeks to two months and work collaboratively with the client team to master the client's techniques and practices necessary to do the project.

Throughout all phases of a project, knowledge transfer is organized in a convenient and cost-effective manner by means of e-mail, instant messaging, and teleconferencing facilities. Moreover, security and protection of clients' intellectual property rights are a high priority at Auriga, and the company is legally committed to preserving confidentiality and protection of client information. Auriga's Master Service Agreement protects clients by specifically designating submitted information as confidential, and every employee signs an NDA as a condition of employment.

Aberdeen Conclusions

As one of the earliest U.S./Russia hybrid software services companies, Auriga has been making Russian IT talent available to U.S. and multinational companies for more than 12 years. The company has also been a leader in creating bridges between Russian and foreign IT communities. During that time, Auriga has refined its collaborative on-site/offshore development and service delivery methodologies. As a result, its teams have become virtual extensions of their clients' internal IT organizations, often overcoming the latter's initial concerns about geopolitical risks and cultural differences in the process.

With interest in offshore development and service delivery now growing beyond Fortune 500 companies, the same characteristics that define Auriga and other hybrid IT services suppliers are worth examining. This is especially true for enterprises that are looking to expand their offshore geography footprints and, most of all, for companies that need to access offshore IT skills but believe that they

lack the resources and international business expertise to manage projects across multiple time zones.

EPAM Systems, Inc.

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 Arkadiy Dobkin, President and CEO
 Arkadiy_Dobkin@epam.com

Company Overview

With more than 500 staff members dedicated to its offshore operations, EPAM is one of the largest on-site/onshore/offshore software solutions and outsourcing services organizations in the former Soviet Union. Focusing on e-business, CRM, ERP, BI, and CMS solutions, EPAM has conducted engagements in more than 30 countries over the past ten years. Headquartered in Princeton, NJ, the company also has offices in Minneapolis, MN; London; and Amsterdam; and maintains ODCs in Moscow and Minsk.

EPAM has played a key role in delivering a number of mission-critical applications that have received numerous IT industry awards, including the Institute of Transport Management eCommerce Award in 2001, Top 10 Significant CRM Implementations Award from Aberdeen Group in 2000, and the Smithsonian Innovation Award in 1999. In 2002, the company was recognized by both Deloitte and Touche and *Inc. Magazine* as one of the fastest growing companies in the U.S., and was featured in Aberdeen Group's *Offshore IT Best Practices: Building Successful Relationships on a Diverse Delivery Model*. The same year, EPAM was the subject of a cover story in the August issue of *Consulting Magazine* and was featured in an *InformationWeek* article, "The Politics of Outsourcing" (September 2002).

Market Position

EPAM operates at a practice level in markets where significant knowledge, experience, and qualifications exist. Focusing on e-business, CRM, ERP, BI, and CMS solutions, EPAM has a customer base that includes Fortune 1000 companies such as Colgate- Palmolive, CareFirst, Blue Cross Blue Shield, Savings Bank Life Insurance USA, Merrill Lynch, Verizon Communications, Samsung America, Reuters, KeySpan Energy, TNK-BP, and Mandalay Bay Resort Group.

EPAM is in strengthening its vertical industry capabilities via a combination of consultative services and solutions delivered by sub-

Supplier Snapshot	Founded: 1993
	Office Locations: U.S.: Princeton, NJ; Minneapolis Netherlands: Amsterdam U.K.: London
	Development Centers: Russia: Moscow Belarus: Minsk
	Number of Employees: 515
	Quality Certification(s): ISO 9001 SEI CMMI Level 4 in progress

ject-matter experts and architects with deep industry experience; project management methodologies and tools; and high-quality, dedicated offshore technical teams. One such vertical is the IT industry, in which EPAM provides core product life cycle services to companies such as SAP, BRIO Software, ServiceWare, and others.

As a U.S.-based company, EPAM initially concentrated on building a strong presence in its home market, which represents 95% of the company's total revenue. The remaining 5% comes from Western Europe and Russia; the former represents the company's strategic growth area. Privately held, EPAM has achieved robust growth since it was founded in 1993 — most recently growing from \$10 million in 2001 to \$12 million in 2002. According to company management, EPAM will grow another 33% to 45% in 2003.

EPAM's core services are IT strategy, solutions design, applications development and maintenance, as well as critical business process optimization services. This mix provides the company with the well-balanced revenue stream that includes:

- Software product development (25%)
- Application maintenance/enhancement (20%)
- Custom software development (20%)
- Systems integration (15%)
- IT strategy consulting (10%)
- Content management solutions (10%)

EPAM's balanced customer base is broader than that of most Russian software services companies, as well as U.S. and European suppliers that maintain Russian ODCs. It includes software and technologies, health care and insurance, retail and consumer products, travel and entertainment, financial services, and manufacturing companies, which account for 30%, 20%, 15%, 15%, 10%, and 10% of the company's revenue, respectively. EPAM is increasing its investment in these industry verticals as a key component of its business strategy to drive growth, create differentiation in the marketplace, and reach the next level in the business maturity cycle.

Key Solutions and Technologies

EPAM's primary business offerings are divided into three areas: software product development, maintenance and support services, and business process optimization solutions. The latter category includes a broad array of successful multi-client initiatives, including content management, CRM, e-commerce, enterprise information

portals, warehouse management and order management systems, and workflow management and optimization applications. Many of these solutions have been based on the company's expertise and experience with product-definition engines, data warehouse and analytics, OLAP, and related technology building blocks. EPAM competencies also include programming languages, operating systems, and database platforms, as shown in Table 2.

Table 2: EPAM Technology Expertise

Languages/Protocols	
Java 2 Enterprise Edition (J2EE)	
.Net	
C/C++ and Java	
Web services	
Web portal/portlet	
Extensible Markup Language (XML)	
Extensible Stylesheet Language Transformation (XSLT)	
Refer to www.epam.com for the complete list of key technologies	
Operating Systems	Database Platforms
Windows	Oracle
Linux	MS SQL Server
Unix	DB2 and Sybase

Source: EPAM, June2003

Service Delivery Model

EPAM's operating model was designed to help clients decrease their cost of application development while improving quality, speed of delivery, and mitigating risk. The company maintains that the experience and competency of its engineers yields a collaborative approach to problem solving — critical attributes embraced by its clients. EPAM continually reinvests in the project management skills and infrastructure that are essential for seamlessly integrating on-shore and offshore resources.

EPAM's project management methodology leverages its proprietary Web-based Project Management Center (PMC), which includes a dedicated, independent quality-assurance process that is based on ISO 9001 standards. The PMC is the dashboard that provides data and guidance for direction setting, identifying potential problems, and reporting. The company is also on track to achieve SEI CMMi Level 4 certification by fall 2003.

EPAM maintains experienced on-site project managers who are in daily contact with client team members — as well as EPAM onshore senior architects and offshore project leads and developers — to ensure close collaboration and communication during the entire project life cycle.

Project managers possess the necessary technical skills and experience to define and manage to project objectives and to maintain schedules and deliverables. They also oversee the PMC, the basis for tracking progress at the macro and task levels, managing and reporting time to completion and progress to milestones, managing project documentation, and managing software releases.

The company's approach to knowledge transfer is a two-part process that begins with the capture and recording of business and technical details about a customer's systems or functions and workflows. The process continues with the orderly transfer of all documentation relating to the project, its technologies and processes, as well as other information and insights critical to the successful running of these systems.

EPAM is committed to the protection of all intellectual property. The company's systems administrative team oversees compliance through a rigorous and comprehensive security policy; confidentiality clauses are included in every contract. The company also maintains state-of-the-art infrastructure and communications links to ensure a secure collaboration environment and rapid responses to client needs.

Aberdeen Conclusions

EPAM's history, business model, and core services are more in line with a classic IT consulting and systems integration business than with what characterizes a typical offshore software services company. Thus, EPAM is something of a trendsetter, given that established offshore companies are trying to move up the industry value chain as mainstream IT services suppliers are adopting offshore models in response to client demands. Concurrently, transparent offshore delivery is very much a part of EPAM's business model. With a growing base of vertical industry expertise and a business-solutions focus, EPAM is well positioned to compete in a continually evolving and increasingly diverse global IT services market.

Exigen Group

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Company Overview

Exigen Group (Exigen) is a global business process solution company that was founded by Gregory Shenkman and Alec Miloslavsky, the former cofounders and CEO and COO/Vice Chairman, respectively, of Genesys Telecommunications Laboratories. After selling Genesys to Acatel in the fall of 1999, they started Exigen to develop process automation solutions for specific vertical industry sectors.

Bringing in business and technology executives from Merrill Lynch, FleetBoston, MetLife, and other service industry leaders, Shenkman and Miloslavsky created vertically aligned business units focusing on the financial services, telecommunication services, and insurance sectors. Counting Allstate Insurance and Bell Canada among its more than 300 customers, Exigen is also expanding into the public services sector.

Exigen's go-to-market strategy encompasses software development and service offerings that include business process optimization, IT expense reduction, labor efficiencies, and business process utilities. In addition to license sales, the company also delivers its core technology products through a flexibly priced, utility-based delivery model. The result is an onshore/offshore hybrid software product services supplier that is focused on helping enterprises reduce service operations costs.

Market Position

Exigen's combined process software solutions and service-oriented business model is reflected in its diverse revenue streams. Sales of its core technology products make up 42% of Exigen's current total revenues. The remainder is divided among managed services (21%); application outsourcing services, including custom software development (29%); and legacy application maintenance and enhancement (8%). In addition to direct sales and service delivery, Exigen maintains strategic partnerships with leading IT services suppliers, such as EDS and BT Ignite Solutions, a division of BT Group PLC.

Supplier Snapshot	Founded: 1999
	Office Locations: U.S.: Austin, TX; San Francisco; Los Angeles; Seattle; New York; Columbus, OH; Edison, NJ Canada: Saint John, NB Europe: Amsterdam; Paris; London; Munich; Riga Asia Pacific: Melbourne; Sydney; Adelaide
	Development Centers: Russia: Moscow, St. Petersburg Latvia: Riga Lithuania: Vilnius
	Number of Employees: More than 500 in 12 countries
	Quality Certification(s): ISO 9001 – 2000 SEI CMM Level 4 (pending)

Exigen has had a global development strategy and service delivery capability since 1999. The company's first acquisition, Latvia-based Software House Technologies, was an established application out-sourcer with a solid base of multinational clients. Since then, Exigen, which is headquartered in San Francisco, has expanded into 12 countries and established development and service delivery centers in Canada, Lithuania, and Russia. The company's global customer base spans North America, Asia/Pacific, and Western and Eastern Europe. These geographies currently account for 52%, 39%, and 9% of Exigen's revenues, respectively.

Key Solutions and Technologies

Exigen's core technology solutions consist of trademarked industry-specific Exigen Process Backbones, software infrastructures for automating, streamlining, and managing service delivery processes that span customer channels, mid-office operations, and back-office transaction processing. These Process Backbones allow companies and/or external service providers to track and manage in-house and/or outsourced processes as discrete components and, at the same time, aggregate transaction volumes of departments, divisions, or even companies within the same industry, enabling the creation of what Exigen calls Business Process Utilities (BPUs) to deliver significant unit cost improvements.

The company's technology is prebuilt yet highly configurable, requiring minimal expenditures on start-up, integration, consulting, and maintenance. It enables companies to leverage and integrate existing systems through a single business object model that was designed to unify existing legacy technologies within a single process-centric architecture, rather than replace them.

Process Backbones also let designers and developers automate the monitoring and measurement of business process performance indicators for management reporting. In addition, with Exigen's drag-and-drop management and deployment features, business users can model process flows, task flows, and compliance rules engines for execution, and simulate activities and results to create dynamic business rules.

Exigen technology allows for the integration of heterogeneous IT environments, including Solaris, HP-UX, AIX, and NT/W2K operating systems; Windows, IE5, IE6, and Netscape Version 4+ clients; 3270, 5250, CICS EPI, and Telnet terminals; and WebLogic, WebSphere, iPlanet, Tomcat, JRUN, and other J2EE-certified application server platforms. The company's Process Backbone's are used in conjunction with TCP/IP and SNA networks; Oracle, DB2, Sybase, Informix, MS/SQL, and ODBC relational databases; IMS and XML hierarchies; CICS, ECI, IMS, APPC, and Tuxedo

hierarchies; CICS, ECI, IMS, APPC, and Tuxedo transactional formats; and VSAM and flat files.

Exigen Process Backbone supports MQ Series and MSMQ messaging systems. It also supports Web Services technologies, including XML, XML/HTTP(S), and SOAP, as well as SAP RFC, BAPI BC-CTI, BC-AL; Siebel7; and FileNet applications. Used in contact centers and Web-based customer self-service transactions environments, as well as in supply chains, Exigen technology solutions support a broad spectrum of PXX/ACD, IVR, predictive dialing, VoIP, fax, e-mail, and mobile products and technologies, as well as paper scanner, OCR, ICR, bar coding, digital signatures, and other electronic forms inputs.

Service Delivery Model

Exigen's service offerings include full life cycle design, implementation, and management of the company's Process Backbones, as well as maintenance, enhancement, and support of client legacy applications. The company also offers custom software development and ongoing management, delivered using a combination of on-site, off-site, and offshore resources to ensure the best solution based on specific project needs.

Managed Services

Exigen's managed services offering, Software-On-Demand, provides a way to reduce the cost of deployment and ownership of its technology. The company manages the entire application life cycle to ensure that clients are operating with the latest versions without service interruption. The service includes all components necessary to support Exigen's technology — including hosting, operations, software and hardware — while providing provisions for companies to “scale” requirements up or down in real time, depending on existing demand for transactions.

The company's Atlantic Canada call center supports thousands of managed services clients using procedures and technology designed to deliver single-call problem resolution. Intelligent routing ensures that calls are directed to a dedicated specialist with on-the-spot troubleshooting and a knowledge base. SLA-based escalations are directed to managers and programmers around the clock, with an advanced problem-tracking request system with escalation, analytics, knowledge base, and cross-reference of source code to programmers.

Application Outsourcing

In addition to managed services, Exigen provides immediate cost-reduction opportunities through offshore outsourcing services, in-

cluding custom software development, legacy system maintenance, quality assurance, production support, and help desk support. Over the long-term, Exigen enables companies to migrate business processes to advanced outsourcing models. The company has been in the applications outsourcing business for 12 years, offering a mix of talent, quality, and diversification that incorporates U.S.-based Silicon Valley and Wall Street management teams with research and development facilities in Eastern Europe and Russia.

The company's delivery model is structured to ensure the availability of the right skills for the right activity at the right cost, including on-site business solutions consulting, dedicated project management, architecture design, deployment, and user-acceptance testing. These client-facing activities are augmented by off-site call center, integration and support, and system and integration testing functions, as well as offshore design and programming, production support, issue tracking and resolution, and unit and string testing.

Exigen project management processes are an integrated part of the company's overall quality management system. Moreover, all of its project managers and project leaders are either Project Management Institute (PMI) certified or on track for Project Management Professional (PMP) certification. The company's development centers are ISO 9001 certified and have passed IBM security audits. In addition, Exigen is currently preparing for SEI CMM Level 4 certification later this year.

Aberdeen Conclusions

Driven by customer demands and current economic conditions, a large and growing number of ISVs and services suppliers are focusing on business process integration and automation solutions, and, at the same time, offering hosting and managed services as alternatives to traditional software licensing schemes. Meanwhile, mainstream IT consultancies, systems integrators, and outsourcers are incorporating offshore delivery into their business models while established offshore companies move up the industry value chain.

In the context of these seemingly diverse trends, Exigen is noteworthy because its business model incorporates and, in some cases, anticipated them. With its focus on providing industry-specific process solutions, its adaptable software life cycle approach, and its balanced on-site/off-site/offshore service delivery model, Exigen exemplifies the fundamental changes going on in the global IT industry. It is also among the leaders that are bringing these changes about.

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Company Overview

LUXOFT is a member of the IBS Group, Russia's largest IT holding company, with operations in 16 countries and more than 2,000 employees. Established in 1995 as IBS's software development center, LUXOFT became a separate entity within the larger group in April 2000. Since its founding, the company has provided custom application development and related services to leading Russian companies, as well as to multinationals with significant business presences in Russia. As LUXOFT, the company has focused on building its global client base in the U.S., Europe, and Asia.

LUXOFT offers total project life cycle services, including custom software development, enterprise application integration (EAI), legacy system reengineering and enhancement, and application testing and maintenance, as well as product co-development services. The company operates dedicated ODCs for multinational companies operating in Russia; it also partners with global IT companies and major Russian R&D centers to bring to market advanced technologies representing a range of scientific and engineering disciplines.

As a leader in Russia's growing software services industry, LUXOFT is ISO 9001 certified and was the country's first supplier to achieve an SEI CMM Level 4 certification. The company is targeting autumn of 2003 to become Level 5 certified and has scheduled a Six Sigma assessment for 2004. In 2002, LUXOFT was recognized by *CIO* magazine as one of the top-three global IT services companies operating in Russia. The company's goal is to expand the boundaries of offshore outsourcing — with its emphasis on fixed requirements coding and legacy application maintenance projects — and take the offshore model to a higher level of collaborative development.

Market Position

LUXOFT's client list includes multinational corporations such as Boeing, IBM, Dell Computers, Citibank, Computer Associates, Ford, General Motors, Renault, Groupe SEB, Shell, and British Pe-

Supplier Snapshot	Founded: 1995; re-launched in 2000
	Office Locations: U.S.: Seattle; New York; Atlanta; Washington, D.C.; Portland, OR Russia: Moscow
	Development Centers: Russia: Moscow, Omsk, Dubna
	Number of Employees: 450
	Quality Certification(s): ISO 9001 – 2000 SEI CMM Level 4 Six Sigma (assessment pending)

troleum. The company has internal and dedicated client development centers in Moscow, Omsk, and Dubna. It also has offices across Russia and in Atlanta; Seattle; Portland, OR; and Washington, D.C. The company has delivered more than 65 international projects since 2000 and has more than doubled its headcount to more than 400 employees during the same period, while maintaining a steady 20% compound annual growth rate. LUXOFT has also taken on unique projects, such as its collaboration with the U.S. Department of Energy to train Russian nuclear and defense industry scientists for work in nonmilitary commercial application sectors.

LUXOFT's early work with Russian and multinational energy, financial services, IT, manufacturing, and aerospace companies gave the company a base of knowledge from which to grow its vertical industry expertise. As part of the IBS Group, LUXOFT has access to the latter's 2,000-plus subject matter experts representing a broad array of technologies and packaged solutions, as well as its partnerships with such IT industry leaders as IBM, Intel, Oracle, Microsoft, SAP, Siebel, and Siemens Business Services.

Key Solutions and Technologies

LUXOFT delivers a broad array of IT services, including technology consulting, architecture planning and design, systems integration, custom software development, and legacy application reengineering and maintenance. The company is one of Russia's largest suppliers of turnkey ODC services to leading multinational hardware and software manufactures, and it develops industry-specific solutions for targeted vertical industries, including:

- *Manufacturing* — maintenance and repair automation and parts, content, and supply chain management systems
- *Financial services* — management information systems, SWIFT funds transfer and settlement software, online banking and payment systems, and core application integration platforms
- *IT industry* — VoIP, embedded software, network management applications, IVR technology, wireless applications, and intrusion detection systems

LUXOFT developers and technical staff are cross-trained to work in different disciplines and have an average of six years' experience in more than one core technology; 21% have more than 10 years' experience. In addition, all LUXOFT developers and technical personnel are certified IBM, Sun, Microsoft, and Oracle specialists — with percentages of 37%, 11%, 41%, and 11%, respectively. The company's custom development and integration services are based on a foundation of core technology expertise (Table 3).

Table 3: LUXOFT Core Technology Expertise

Languages	C, C++, COBOL (CICS/VSAM, IMS), Fortran, IBM assembler language, IBM Visual Age for Java, Java, PERL, PL/1 and PL/SQL, Visual Basic and Visual Studio, Xwindows/Motif
Web Technologies	HTML, LDAP, Macromedia, XML, Web Services
Application Platforms	IBM WebSphere: Application Server, MQ Series, MQ Integrator, B2B Integrator, Host-on Demand BEA: Weblogic Application Server and Enterprise Server, Weblogic Integrate, Weblogic Portal, Tuxedo
Systems and Platforms	Support: FTP Utility, Network Operations, PC Operations, Server Operations Unix: Clustering and High Availability, Internals, Networking, System Administration Windows NT: Internals, Net, System Administration SNA Abend-Aid V8.0 (IPCS)
Miscellaneous	.Net, MS SQL Server, COM/DCOM, ActiveX, CORBA, Crystal Reports, Sybase Adaptive Server, Sybase PowerBuilder, Embedded Systems development tools

Source: LUXOFT, June 2003

Looking beyond popular packaged applications and core technologies, LUXOFT is heavily invested in advanced R&D, reaching into Russia's rich scientific and technology research communities to offer advanced solutions in disciplines such as the following:

- Security and risk assessment tools, including a visual simulation framework for situation modeling and analysis and security systems based on novel face-recognition technology
- Unit, functional, system, and regression testing level utilities for mission-critical applications
- Business process modeling and optimization solutions to optimize logistics for placement, allocation, distribution, and transportation of goods
- Adaptive and autonomous computing solutions for data acquisition, collection, and analysis from telemetry and control devices over wireless sensor networks and active router platforms for on-demand, custom application deployment

Service Delivery Model

LUXOFT's delivery model incorporates dedicated project managers and core on-site and offshore resources. This balanced approach to resource utilization enables the company to focus on requirements gathering, architecture design, change management, and other client-facing activities while maintaining a price-competitive, interactive development model. Moreover, in keeping with its global ambitions, LUXOFT maintains an active cultural acclimation program, hiring and training personnel with language skills in English, German, French, Arabic, and Japanese.

A review of LUXOFT's U.S. and European engagements shows that the company is often brought in at project visioning, planning, and design stages and that it uses small, focused project teams that study problems and present options, often creating prototypes that incorporate workable code. LUXOFT is also able to tap into the 2,000-plus IBS resource pool, making the company one of the few Russian-based IT services suppliers capable of scaling to large long-term projects.

In an industry where third-party quality process certifications are rapidly becoming a "check-off-the-box" on prospect RFPs, LUXOFT's Quality Management System (QMS) is notable in that its SEI CMM Level 4 certification is a starting point and not an end in itself. LUXOFT's QMS program is more than a set of processes designed to ensure quality code and on-time delivery. It combines program and client risk management functions, as well as elements of client satisfaction best practices, and shares many of the characteristics of total quality programs implemented by the leading multinational IT services suppliers.

Aberdeen Conclusions

As a member of Russia's largest group of IT services companies and with an international client list made up primarily of Fortune 500 companies, LUXOFT fits the profile of a mainstream offshore services supplier better than most Russian companies. This image is reinforced by a suite of service offerings that span the technology life cycle from IT strategy consulting to application outsourcing to turnkey ODS provisioning.

At the same time, LUXOFT is very much a part of a Russian IT services and software development industry that is characterized by advanced R&D and collaborative development of complex software solutions. Moreover, as a member of Russia's largest IT services group, the company has the ability to scale that most of its smaller compatriots do not possess. This combination of size and flexibility, coupled with a global delivery capability and quality processes,

places LUXOFT in a solid competitive position as the global IT industry continues to evolve.

Mirantis, Inc.

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Company Overview

Supplier Snapshot	<i>Founded:</i> 2001
	<i>Office Locations:</i> U.S.: Foster City, CA Russia: Moscow, St. Petersburg
	<i>Development Centers:</i> Russia: Moscow, St. Petersburg
	<i>Number of Employees:</i> N/A
	<i>Quality Certification(s):</i> N/A

Mirantis serves as a two-way bridge for high-technology companies seeking entrée into Russian markets, as well as those looking to access the country's rich scientific, mathematics, and engineering talent pool. Originally founded in 1998 as RSI, a Silicon Valley, CA-based financial services software supplier with development centers in Moscow and St. Petersburg and acquired in 1999 by London Bridge Software, Mirantis has extensive experience on both sides of the offshore equation.

When London Bridge Software spun off its Russian operations in 2000, the company's management saw an opportunity to apply its experience and contacts in Russia to the emerging ODC provisioning market. Changing the company's name to Mirantis, its founder, Alex Freedland, developed a suite of technology development center (TDC) offerings designed to enable U.S. and European technology companies to set up, staff, and manage Russian development centers.

The company has since expanded its core business to include to a broad-based managed services model incorporating both a la carte and packaged ODC provisioning, as well as business development consulting services for technology enterprises that target the growing Russian domestic market. Depending on a company's strategic interest, Mirantis offers a range of options from opportunity assessment consulting to entry strategy development to TDC implementation, staffing, and operations.

Market Position

With its consulting and business development services on one hand and its managed TDC offerings on the other, Mirantis offers non-Russian companies two separate but related value propositions — access to the Russian market and access to Russian resources. The basis for both lies in the company's knowledge of doing business in that country and its ability to bring the appropriate skills, access to

facilities and resources, and ongoing management capabilities to its clients' strategic objectives.

Since 2001, Mirantis has helped companies expand beyond offshore project outsourcing and establish product development centers in Russia. The company's clients include leading software, technology engineering, and life sciences companies, such as Genesis Microchip Corp., United Healthcare Group, and Cadence. These and other clients rely on Mirantis' facilities and infrastructure setup and ongoing management services, tax and labor law expertise, as well as its access to a broad array of skills, including:

- *Mathematics expertise* in analytics, algorithm design, mathematical modeling, simulation, and optimization
- *Engineering design* for a range of control systems, programmable logic devices, analog and digital circuits, and control systems
- *Scientific skills*, including genomics, organic and inorganic chemistry, molecular biology, and other life sciences; mechanical, chemical, electrical, and industrial engineering of biotech devices; and informatics data modeling, database management, and data mining

In its consulting and business development services, Mirantis applies the same facilities and organizational development expertise and management expertise — in combination with deep knowledge of the Russian domestic market— to assist U.S. and European technology companies achieve strategic goals.

Core Services

Mirantis' core services are divided into four major groups: Consulting and Business Development, Offshore Managed Services, Human Resource Managed Services, and Business Incubators and Technology Acquisition.

Consulting and Business Development

Drawing on their extensive knowledge of the Russian domestic technology market, Mirantis consultants analyze and identify windows of opportunity and develop appropriate entry strategies. To support client strategies, the company also offers dedicated sales and marketing, development engineering, manufacturing, education, and technology acquisition resources through its managed operations services organization (MSO), as well as direct business support and facility operations.

Offshore Managed Services

Expanding on its original TDC offering, Mirantis has developed a diverse set of offshore managed center (OMC) services for technology suppliers, professional service and system integration firms, and enterprise IT organizations. These services include setup, staffing, and management of local marketing and sales, customer support, distribution management, university programs, and operations, in addition to full TDC implementation and management. Mirantis' OMC offerings are based on a set of implementation and client coordination processes and deliverables that span the entire managed center spectrum, including:

- Facility, physical security, data network and telecommunications, and IT infrastructure (hardware and software) hosting
- Recruiting to requirements (R2R), corporate cultural assimilation, retention program design, tax and labor law compliance, employee benefits, and orientation and training human resources services
- Data security, system administration, government liaison, accounting, and administration operations management, as well as visa and travel support and hospitality services coordination
- Implementation, account and program, and process training management services.

These and related services employ Mirantis' block-matrix operation (BMO) structure, a modular approach that allows for flexible organization and facility implementation and growth based on changing client requirements.

Human Resource Managed Services

Mirantis maintains and continuously updates a skill-defined database of several thousand resumes spanning a broad variety of scientific and technology expertise. The company also maintains strong relationships with Russian universities and research organizations, enabling it to monitor and recruit professions from different, often unique fields in order to meet client requirements.

Working with client hiring managers, Mirantis handles all facets of staff sourcing, screening candidates for languages skills and client business culture "fit." Selected resumes are then forwarded to the client, who, working with Mirantis, schedules interviews. This process ensures that only qualified candidates are presented to clients, who retain total authority over hiring decisions. Mirantis also develops orientation and training programs to ensure that offshore staff members are fully integrated into the client's corporate culture.

Business Incubators and Technology Acquisition

The breadth and depth of knowledge that enables Mirantis to tap into Russia's research and engineering resource pool is also reflected in its ability to identify clients and assist them in acquiring new technologies and products. With its country-specific legal and business incubation services, Mirantis can also help clients establish joint ventures with Russian research organizations to incubate new products and bring them to market.

Service Delivery Model

Each Mirantis service offering incorporates a set of delivery options: opportunity assessment, entry strategy, implementation, organization buildup, and ongoing operations. For example, the TDC opportunity assessment was designed to help clients identify how to best leverage offshore development. It is based on a multistep process that includes a business alignment analysis to identify strategic and operational goals of potential programs, forming a body of knowledge on which all future activities are based.

Following an assessment, Mirantis can help a client develop an entry strategy based on a review of priorities, needed skills, and technical requirements. A combined Mirantis/client team reviews and validates the feasibility of different alternatives, detailing risks and benefits in order to identify the most appropriate approach. Clients also have the option of choosing any of the company's organization development and operations service options. Mirantis also offers a buyout option to its OMS services, enabling clients to transition to a wholly owned offshore operation.

Aberdeen Conclusions

With a fairly stable ruble and nearly five years of robust economic growth, Russia represents more than just a source of IT skills for foreign technology companies. Although most ODC provisioning service models focus on the latter, Mirantis' go-to-market strategy also embraces companies whose interest in Russia includes the business opportunities it offers. Moreover, the company's managed services offerings are differentiated from most ODC services insofar as they can be uniquely tailored to specific client resource, facility, and operations requirements.

STAR Software, Inc.

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Company Overview

Supplier Snapshot	<i>Founded:</i> 1991
	<i>Office Locations:</i> Russia: St Petersburg U.S.: Newburyport, MA Germany: Berlin Sweden: Stockholm Switzerland: Zurich
	<i>Development Centers:</i> Russia: St. Petersburg
	<i>Number of Employees:</i> 212
	<i>Quality Certification(s):</i> SEI CMM Level 3 in process

STAR Software (STAR) was founded in 1991 by Nikolai Puntikov, a member of the Institute of Computational Linguistics of the Russian Academy of Sciences. Puntikov continues to lead STAR St. Petersburg as CEO and serves as president of the company's U.S. affiliate, STAR Software, Inc., which is headquartered near Boston. Since its inception, STAR has focused on serving an international clientele, specializing in software life cycle services and dedicated ODC provisioning.

The company's core service offerings include custom application design and development, legacy application reengineering and migration, e-commerce solution implementation, technology research, and multilingual software localization. STAR has been consistently profitable for more than a decade and, in the past five years, has achieved an average 45% compound annual growth rate. The company's 2002 revenues place it among the top three services companies based in Russia. STAR has also been cited as one of the country's leading suppliers of offshore software services by *CIO* magazine, Ernst and Young, and other industry analysts and publications.

Market Position

Although STAR offers a range of development capabilities that are applicable across the vertical industry spectrum, it has developed particular expertise in the health care, pharmaceutical, and application software industries. These sectors account for 35%, 10%, and 25% of its revenues, respectively. Much of STAR's work is in database-intensive applications; data mining tools for corporate knowledge management; and eCRM solutions, including online Internet call centers.

Because of its long and deep expertise in software localization and internationalization, STAR develops software for its clients and delivers it in languages for users around the world. The company's international focus is illustrated by the number of its Northern European clients (in Denmark, Sweden, Germany, Switzerland, the Neth-

erlands), which accounts for 75% of its revenues. The remaining 25% of the company's business comes from the U.S., where the company is currently in the midst of a major expansion.

Among STAR's Global 2000 client base are industry leaders such as BMW, Contex, DaimlerChrysler, IBM/Tivoli, Millennium Pharmaceuticals, Roche, Symmetricom, and TogetherSoft. The company collaborates with regional and multinational consulting, systems integration, and ISV partners such as CSC Denmark and the Localization Industry Standards Association (Switzerland) on complex custom development requiring specialized technology skills.

Key Solutions and Technologies

More than 35% of STAR's revenues come from custom development of Web-enabled and e-commerce solutions, on-line CRM solutions, knowledge management systems, and document workflow and other process-intensive business systems. The company's 200-plus developers and engineers have extensive experience in the leading programming languages, operating systems, and database platforms (Table 4).

Table 4: STAR Core Technology Expertise

Development Platforms	Windows 9x/ME/NT/2000/XP, Unix, MacOS (9, X)
Programming Languages	C, C++, .Net (C#, VB.NET), Java (Swing, EJB, J2EE), Perl, VB, VBA, COBOL
Databases and Data Access	SQL (MS SQL, Oracle, Sybase, Informix, MySQL), DB2, Lotus Notes, ODBC, JDBC, DAO
Internet/Extranet Communications	MS IIS, Apache, BEA Weblogic, IBM WebSphere, WebServices, Java technologies, XML/XSL, ASP, ASP.NET, JavaScript, VBScript, SOAP, MS Exchange
Technologies	.Net, LDAP, MS Active Directory, CORBA, COM/DCOM/COM+, ActiveX, Win32, Device Drivers
Methodologies	UML, RUP, Agile Development (XP, FDD), Together
Project Estimation	Function Point Analysis
Industry Partnership	Microsoft Certified Partner Oracle Member Partner

Source: Star Software, Inc., June 2003

The core technology skills that form the basis of STAR's custom solutions design and development services include the following:

- *Database development*, including design and programming of databases, database-intensive applications, and data mining tools for corporate knowledge management initiatives
- *Legacy system migration*, including platform-independent migration and Web enablement
- *Application development*, including logistics, workflow automation, and custom business operations software solutions
- *Application management*, including 24×7 reactive and proactive maintenance and support of corporate information systems and commercial software packages
- *E-commerce solutions*, including B2C and eCRM systems and Internet call centers
- *Software localization* for major European, Middle Eastern, and Asian languages, as well as localized software integration and testing

STAR architects and developers are also a key element of the company's ODC offering. STAR's methodology for building and managing dedicated Russian centers combines the basic benefits of mainstream dedicated offshore resource augmentation models and facilities management with flexible staffing and contract options — an approach that the company calls FlexODC. FlexODC provides dedicated staff with client-specific business knowledge and technical expertise, as well as custom hardware, development tools, secure office facilities and communication links, and other tailored operational features coupled with competitive rates.

FlexODC offers flexible staffing based on a mix of flat headcount and peak period discounted rates. Using the FlexODC stable staff approach, companies can receive discounted rates by committing to 100% utilization of dedicated core staff trained in client-specific business knowledge and technical expertise. With FlexODC extra personnel option, 50% of the additional headcount is billed at STAR's standard core team rate with the remaining 50% billed at standard commercial rates. STAR also works with clients on a risk-sharing basis to train existing staff to new technologies or by hiring additional personnel with required skills (by offering 50% discounted rates during transition periods).

Service Delivery Model

STAR's early focus on the Northern European and U.S. markets enabled it to adapt to and become intimately familiar with established IT industry project management techniques. Each new project or FlexODC relationship starts with the formation of a STAR team that is assigned to the client throughout the life of the relationship. Teams are made up of technical and business specialists and headed by dedicated project managers. Requirements gathering and analysis are initially managed through an intense proposal preparation process that incorporates teleconferences, e-mail interactions, and on-site visits, which often involve one or more STAR senior managers. The company stresses English-language fluency to ensure smooth collaboration and open communications between client staff and project teams.

STAR is continually investing in its infrastructure and adheres to strict physical, network, and system security policies and standards. The company maintains a version control system to distribute modules among development servers and performs integration tasks on specially controlled and supervised systems. In addition to technical security, STAR maintains rigorous client intellectual property processes to protect client data from being intentionally or unintentionally compromised. All contracts include special confidentiality clauses and project team members operate under individual NDAs.

In addition to having a Software Process Policy based on SEI CMM standards (the company is currently preparing for a Level 3 assessment), STAR has developed expertise in extreme Programming (XP). Although the XP approach is not appropriate for all projects or clients, the company notes that it has proven to be particularly effective for projects that fall outside of the offshore mainstream; that is, those with rapidly changing requirements. With XP, small teams maintain short development cycles, communicating extensively with their client counterparts to limit the scope of each cycle and dynamically incorporating testing with each software release.

Aberdeen Conclusions

Collaborative software development on a global scale requires flexibility, talent, and the ability to manage relationships and projects across time zones and cultures. Many offshore software services suppliers have adopted these practices over time to expand into foreign markets. STAR, on the other hand, started with a cross-border/cross-cultural collaborative delivery model and a go-to-market strategy centered on serving a global clientele.

STAR also developed and continues to improve methodologies and processes designed to remove the uncertainties and risks that keep

many enterprises from pursuing and achieving the benefits of collaborative offshore development. At the same time, in an industry where every supplier has a “methodology” and third-party quality certifications are table stakes, STAR’s ability to handle both mainstream projects and innovative “back-of-the-napkin” development are its major selling points.

Vested Development, Inc.

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 Sergey Yezhkov, Chief Operating Officer
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Company Overview

Originally launched in 1997 as an offshore software development company, Vested Development, Inc. (VDI) rapidly expanded and evolved its business model to meet the myriad IT challenges facing its clients. Based on more than 300 successful project engagements, VDI's value rests on its ability to analyze and solve complex IT problems. This focus has served as the impetus for the company's evolution as a full-scale software engineering services provider.

VDI's broad service portfolio spans key engineering functions and responsibilities. These include software product life cycle services ranging from engineering and development to deployment to maintenance and support. Collaborating with customers in solutions design, VDI specializes in customized software engineering, including new product development, application reengineering, project recovery, porting and migration, quality assurance, and maintenance. VDI also offers an ODC turnkey service to technology companies looking to establish their own offshore development facilities.

Market Position

Headquartered in the U.S., VDI derives 70% of its revenue from the North American market, and Russian and Western European clients account for the remaining 30%. VDI's early focus on the ISV sector afforded its management team and engineers the experience and expertise needed to successfully address complex software engineering problems. Although VDI offers a full range of application life cycle services, the company's primary strength is in software engineering, with an emphasis on planning and design as opposed to coding to existing specifications.

This emphasis on the problem-solving side of software engineering enables VDI project managers and engineers to work with clients at the beginning of a project, participating in creating the blueprints and specifications that form the basis for all subsequent development activities. Indeed, "early involvement" is core to the company's approach to delivering custom engineering services.

Supplier Snapshot	<i>Founded:</i> 1997
	<i>Office Locations:</i> U.S.: Burlington, MA
	<i>Development Centers:</i> Russia: Moscow, Tver, Kazan Armenia: Yerevan
	<i>Number of Employees:</i> 225
	<i>Quality Certification(s):</i> ISO 9001 – 2000

Building out from its ISV client base, which accounts for almost half of the company's revenues, VDI has expanded into other IT-intensive industries. These include media/entertainment, telecommunications, insurance, and financial services industries, sectors in which a combination of on-site project management skills and a disciplined software engineering methodology and experience are particularly well suited to client needs.

In addition to custom software engineering, which makes up approximately half of its client engagements, the company also specializes in application reengineering, delivering value to its clients by efficiently building bridges to integrate new and old technologies to meet current business requirements. VDI has also launched a relatively new security governance practice, leveraging its strong reverse engineering and problem-solving skills to reduce the likelihood of IT security breaches.

Key Solutions and Technologies

VDI has decades of collective experience and expertise using the technology building blocks that form the foundation for solid legacy and emerging applications (Table 5).

Table 5: VDI Core Technology Expertise

Languages/Protocols	C/C++, Java (J2SE/J2EE), Microsoft .Net Framework (C#, VB, VC++), JavaScript, VBScript, Delphi, Pascal, PL1, SQL, Assembler, Active Server Pages/Java Server Pages, Java 2 Enterprise Edition (J2EE)
Operating Systems	Sun Solaris, Unix/Linux, IBM AIX, HP UX, Microsoft Windows NT/2000/XP, Palm/OS and Palm Computing Platform, Mac OS
B2B/EAI Platforms	Commerce One, Ariba, i2, Microsoft BizTalk, IBM WebSphere Business Integrator (MQSI and Cross-Worlds), Sun ONE Integration Server, Vitria, WebMethods
Database Platforms	Oracle, MS SQL, IBM DB2, Sybase, Informix, MySQL, Berkley DB
Wireless Applications	WAP/WML, Palm.Net (Web clippings and iNetLib)
Streaming Media	Real Server, Net Show Theatre
Web Servers and Technologies	Microsoft IIS, Apache, Netscape Enterprise Server, Cold Fusion, COM/DCOM/MTS/COM+, SOAP/CORBA/IIOP, JSP/Servlets/ASP/PHP/CFM

Source: VDI, June 2003

In addition to core software development, VDI offers consulting, implementation, and integration services for leading enterprise application packages, including:

- *CRM* — Pivotal, Siebel, MS CRM and Onyx
- *ERP* — Navision, SAP, PeopleSoft, Oracle Apps, and Scala
- *SCM* — Ariba, i2, and Commerce One

VDI delivers business intelligence and data-mining solutions using DataWatch Monarch ES, Cognos, Business Objects, Brio, and Hyperion, as well as content and document management using Documentum, Hummingbird, iManage, Staffware, Domino Doc/Workflow, and e-learning solutions (several of those companies are actually using VDI's engineering services). In addition, the company has developed a proprietary tool kit to reduce application-reengineering time by 40% (when compared with off-the-shelf packages) and employs a phased migration process to reduce the risks associated with legacy transitions.

Service Delivery Model

VDI combines an extensive Russian resource pool with strong on-site co-project management to provide all of the benefits of offshore delivery while minimizing complexity and risk. English-speaking, multicultural project managers act as liaisons between the developers in Russia and the customer, ensuring clear understanding of a customer's business problems and the IT requirements to solve them. Project managers are responsible for day-to-day communications and status monitoring, while helping customers maintain continuous insight into and ultimate control of their projects.

Client engagements are built around dedicated project teams. Each team is self-managed and fully supports the project implementation (excluding support activities such as accounting, system management, and other shared functions). The project flow is defined by implementation procedures and client requirements using an iterative-incremental approach that allows for early risk mitigation and experimentation on complex solutions. This approach facilitates solution modifications at each step and provides insight into successive project stages for the development team and the client.

The same client-centric values are at the heart of VDI's approach to communication, project documentation, requirements management, knowledge transfer, and intellectual property protection. The company is responsible for all the activities and procedures required for a productive and secure communication environment. This responsi-

bility starts with regular on-site visits throughout the project life cycle. It includes securing Web-enabled individualized project management portals and ensuring that the entire software development process is entirely transparent to customers.

VDI's requirements-management process starts with a well-defined problem statement and detailed business and technical requirements, which are used to establish and maintain a shared understanding of responsibilities and expectations. Requirements statements become living project plans after they have been documented and approved by the customer, and they form the basis for estimating, planning, performing, and tracking activities, as well as for managing change requests.

To further ensure effective project control and execution, VDI has developed a centralized, Web-based project management portal for consolidating and managing key project data and processes. The portal is a highly secure workspace that enables customers to view and perform project management activities, to communicate comments, and to change requests to their offshore counterparts.

VDI also takes a multipronged approach to protecting clients' vital intellectual property, maintaining a staff that has experience working in military and other government and commercial controlled-access working environments in Russia and the U.S. Access to project documentation and source code is strictly controlled, and project teams and development platforms are physically separated as appropriate. As a U.S. corporation, VDI affords clients full legal protection through standard software services agreements that are backed by individually signed NDAs.

Aberdeen Conclusions

VDI's focus on complex IT challenges, breadth of core technology expertise, and its legacy reengineering capabilities typify the strengths of the Russian IT industry. Being a U.S. company with a great deal of experience understanding customers' business needs and a history of collaborative product engineering, VDI can successfully deliver innovative software solutions and provide professional engineering services to its demanding customer base and still remain price competitive.

The ability to balance price and skills is becoming a competitive necessity in the offshore services sector, as ISVs and IT-reliant companies increasingly look for low-cost, high-level technical skills to achieve competitive advantage. In this market, suppliers cannot rely on cost-reduction based on labor arbitrage alone. Increasingly, competitive differentiation will be based on a supplier's ability to apply appropriate skills to problems in a cost-effective manner. This

approach has been the foundation of VDI's go-to-market strategy since it was founded, and that continues to form the basis for its growth strategy.

APLANA Software, I.T. Co. Group

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 Victor Weinstein, CEO
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Company Overview

Established in 1999 as the software development center of I.T. Co., a leading Russian technology group, APLANA Software was re-launched as a separate business unit in 2001. The company delivers a broad range of IT consulting and solutions planning, custom development, package customization, and ongoing maintenance services. APLANA has advanced competencies in CRM solutions, including sales force automation and call center, and has developed custom billing systems, asset tracking, and other core business applications for financial services, manufacturing, energy, and IT industry clients. During FY 2002, the company achieved 100% growth and is on target to achieve the same level in FY 2003–2004.

Market Position

APLANA serves Russian/CIS, North American, and Western European clients, targeting midtier enterprises and business units of Fortune 1000 companies. The company's domestic clients include Central Bank of Russia, Ministry of Industry, Science and Technologies of Russia, Comstar, and Gazsviaz (a unit of GAZPROM), as well as units of leading multinational enterprises in Russia/CIS. The company has expanded on these relationships to grow its international customer base to include OTIS, Wrigley, Procter & Gamble, GE Medical Systems (France), SYSTRAN S.A. (France), and ICL Smart Card Group (a unit of ICL/Fujitsu, USA).

Delivery Model

APLANA's delivery model is based on openness and transparency, adapting its development processes to those of its customers. The company emphasizes real-time information exchange employing proven methodologies, such as Rational Unified Process and Microsoft Solution Framework, using a variety of business modeling, project management, and testing and documentation tools. APLANA follows strict hiring procedures to ensure communication ability and

Supplier Snapshot	Founded: 1999; re-launched in 2001
	Office Locations: U.S.: Essex, CT Russia (HQ): Moscow
	Development Centers: Russia: Moscow, Novosibirsk
	Number of Employees: 110
	Quality Certification(s): ISO 9001 – 2000
Core Technologies:	Programming Languages: Java; Oracle Developer; T-SQL, PL SQL, ANSI SQL; Lotus Script, JScript, ASP; VBA, VB, VB.Net; C#, VC++, XML, HTML
	Application Servers: IBM WebSphere, Oracle IAS, Tomcat, WebLogic, JBoss, MS IIS
	Technologies: Java Swing, JSP, Servlets, CORBA, RMI, EJB; MS .Net, MFC, ATL, DOM, OLAP, COM, DCOM, ActiveX; Oracle OLAP, PKI
	Databases: Oracle, IBM DB2, Informix, MySQL, MS SQL, MS Access, Sybase

cultural compatibility, and it requires strict employee confidentiality agreements to ensure the protection of client intellectual property.

GGA Software Services LLC

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Company Overview

GGA focuses on software programming, algorithm development, and content development. The company's primary market has been the life sciences industry, which accounts for approximately 80% of its revenues. GGA has also developed significant expertise in the financial services, publishing, and new technology sectors. Since 1994, GGA has developed more than 20 commercial scientific software products that incorporate advanced computation, data visualization, and modeling tools. The company's St. Petersburg-based R&D and engineering organization has deep technical and scientific expertise. Most of its team members have at least a master's degree, and more than 40% hold Ph.D., M.D./Ph.D., or DSc degrees.

Market Position

GGA's software programming group has special expertise in data visualization, data mining, database architecting, pattern recognition, signal processing, image processing, statistical modeling, molecular graphics, chem-informatics, bio-informatics, and quality assurance. Its content developers have extensive backgrounds in a range of scientific disciplines, including material sciences, medicine, biochemistry, chemistry, molecular biology, toxicology, pharmacology, and oncology. The company often undertakes projects that involve collaboration between its scientists, mathematicians, and other specialists and those of its clients.

Service Delivery Model

GGA's delivery model involves close on-site client collaboration on requirements analysis and specification development. Offshore teams have primary responsibility for project execution, coordinating with dedicated onshore project management staff, and providing regular progress reports and frequent deliverables. GGA adheres to a disciplined management methodology for project design, execution, and delivery, and rigorous quality assurance procedures.

Supplier Snapshot	Founded: 1994
	Office Locations: U.S.: Cambridge, MA
	Development Centers: Russia: St. Petersburg
	Number of Employees: 125
	Core Technologies: Operating Systems: Windows 2000/NT/XP/9X/ME/CE; Mac OS; Unix (BSD Systems, Solaris, HP-UX, Linux, etc.); em- bedded systems (Windows CE, Palm OS) Programming Languages/Tools: MS Visual Studio 6.0 (Visual C++, Visual Basic, etc.); MS VBA; C++; Java, JSP, JavaScript; Perl, Active Perl; LISP, AutoLisp; Debugging tools (Soft-Ice, Bound Checker, Rational ClearTest, SilkTest, etc.); Performance tuning tools (JProbe, Optimizelt); GNU tools (Cygwin, Rational Rose, TogetherJ) Database Management Systems: Oracle, MS SQL, MySQL, Informix, MS Access, FoxPro, InterBASE Data Analysis and Statistics: Variance analysis, regression analysis, neural networks, multi- variate procedures, discriminant analysis, cluster analysis, fuzzy logic, graph theory

High Technologies Center, Ltd

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Company Overview

HTC, Ltd. is an international software design company dedicated to engineering customized software and solutions for workflow, document management systems (DMS), and Internet/intranet, ranging from stand-alone applications to complex systems. Consisting of qualified IT professionals with extensive work experience in the American and European markets, HTC focuses on transaction-oriented custom applications using the latest in development languages and tools, workflow software, and database technologies.

Market Position

HTC's primary markets are the financial services, health care, insurance, and IT industry sectors. Clients include Wells Fargo, SunTech Student Loans, CSI Insurance, KMS Consulting, F1 Compliance Software, and NetCareUSA. The company's customers are located throughout the U.S., Scotland, and Russia, which account for 70%, 20%, and 10% of its revenues, respectively.

HTC specializes in Internet/intranet, workflow, and DMS application development. Approximately 45% of the company's revenues come from custom application-development projects, with another 40% coming from systems integration work within its primary focus areas. The company's workflow and DMS solutions are found in student loan processing and debit card dispute systems, as well as in similar document/workflow-intensive processes. HTC also develops and licenses DMS and workflow software components to OEMs.

Service Delivery Model

In working with clients, the company follows its branded six-stage HTC Process Model that spans the full development cycle and enables it to seamlessly blend on-site requirements gathering, planning and design, and ongoing project management with development resources in Izhevsk, Russia, for round-the-clock service delivery. Using the latest Internet communication techniques, requirements and development are handled seamlessly between on-site and offshore locations.

Supplier Snapshot	<i>Founded:</i> 2000
	<i>Office Locations:</i> USA: Jackson, MS Russia: Izhevsk
	<i>Development Centers:</i> Russia: Izhevsk
	<i>Number of Employees:</i> 21
	<i>Quality Certification(s):</i> N/A
<i>Core Technologies:</i> Java/J2EE, ASP.Net, ASP, XML, VB.Net, Staffware Workflow, Oracle PL/SQL, Active Workflow, and MS SQL Server workflow technologies; and OTG DMS, HTML/DHTML, Web Services, FileNet DMS.	

SPiRiT Technologies, Inc.

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Company Overview

Since it was founded in 1992 by a group of Moscow State University graduates, SPIRiT has grown to become Europe’s largest express digital signal processing (eXpressDSP)-compliant software house. A leader in communications software development, Spirit’s stated mission is to bring advanced DSP software products for network backbone infrastructure and mobile devices to people worldwide, which it does as both a product and custom application services supplier to leading telecommunications OEMs. With an 80-person development organization that includes 15 Ph.D.’s, SPIRiT combines Russian research and engineering talent with competitive labor rates to deliver quality software products for telephony, VoIP, fax over IP, hands-free conferencing, sophisticated speech processing, MP3, GPS receiver design, and other DSP environments.

Market Position

SPIRiT delivers communication products as well as technical consulting and custom development services to the world’s leading telecommunication equipment and semiconductor suppliers. SPIRiT clients include Atmel, Furuno, Hyundai, Japan Radio Company (JRC), Leica, Marconi, NEC, Nortel Networks, Panasonic, Samsung Electronics, Siemens, Tadiran, Texas Instruments (TI), and Toshiba. SPIRiT is TI’s largest third-party software partner in Europe. Used in 50 countries, SPIRiT products are tuned to meet customers’ specific requirements for MIPS, memory, and target hardware. The company sells direct through representatives in 11 countries.

Research and Development

SPIRiT is actively involved in R&D in advanced communications services such as multimedia messaging (MMS) for third-generation (3G) cellular networks and, through its SeeStorm.com subsidiary, developed an innovative synthetic-video product that has been licensed in Europe and Japan. SPIRiT has also developed a joint product with TI — a flexible DSP solution, C54CST — for applications that require a telephony or voice-band processor.

Supplier Snapshot	Founded: 1992
	Office Locations: Russia: Moscow U.S.: San Jose France: Sophia-Antipolis Japan: Tokyo
	Development Centers: Russia: Moscow
	Number of Employees: 100
	Quality Certification(s): Texas Instruments Corp. eXpressDSP standard
	Core Technologies: Programming Languages: C/C++, Assembler, Matlab, Verilog, Vera Tools: VCS, Vera, SureFire, Vericov, Code Composer, Synopsys Design Compiler, Xilinx Foundation, CVS, and Synchronicity Platforms: RISC (ARM, Atmel, NEC), Windows 9X/2000/NT/XP/CE FPGA (Xilinx)

Telma Ltd.

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Company Overview

Telma has been providing custom development and IT consulting, testing, and maintenance services to major U.S. and European telecommunications OEMs since 1991. In the past 12 years, the company has grown at a consistent rate, achieving a 30% revenue increase from 2001 to 2002. Telma is headquartered in Nizhny Novgorod, a city that, since the Soviet era, has been a center for advanced telecommunications and radio R&D — a heritage that is reflected in its management and development staff. Telma's location also enables it to offer highly competitive rates compared with service suppliers working out of major population centers.

Market Position

The telecommunications industry accounts for 90% of Telma's revenues. Since signing its first contract with Motorola in 1992, Telma has completed more than 90 successful projects for this company (its number one client). Telma also serves financial services clients and has worked on a subcontract basis with several global IT consulting companies. Using its wireless technology expertise, Telma delivers mobile e-business solutions for supply chain management, remote security, and object tracking as well as synchronized remote data access and Web services applications. Telma's geographically diverse client base spans North America and Western Europe — which account for 65% and 20% of its revenues, respectively — and Asia/Pacific, Latin America, and Russia/CIS.

Service Delivery Model

With a development center certified at SEI CMM Level 5, Telma works to effectively balance on-site assistance and knowledge transfer with offshore development. Development teams are joined by testing and quality assurance experts at the outset of every project and remain involved through to completion. Telma personnel average more than a decade of multisite collaboration experience to ensure successful handover and integration of project deliverables.

Supplier Snapshot	Founded: 1991
	Office Locations: Russia: Nizhny Novgorod
	Development Centers: Russia: Nizhny Novgorod
	Number of Employees: 250
	Quality Certification(s): SEI CMM Level 5
Core Technologies:	Programming Languages: C, C++, C#, Pascal, Object Pascal, Java, Visual Basic, Perl, SQL, JavaScript, VBScript, PHP
	Communication Protocols: GSM/GPRS, CDMA, UMTS, FLEX, ReFLEX, POCSAG, WAP, HTTP, TCP/IP, UDP
	Web technologies: .Net, HTML, XML, WML, ASP, Macromedia Flash, Microsoft IIS, Apache, Tomcat
	Desktop Operating Systems: Windows, Unix, Linux, Solaris
	Wireless Operating Systems: Windows CE, Java 2 Micro Edition, Personal Java, Palm OS, Symbian OS, Wisdom OS, Microsoft .Net Compact Framework, SIM Toolkit

Author Profile

Stephen Lane, Research Director, IT Services

Lane's research spans the IT service industry, from application solutions to infrastructure life cycle disciplines. In this context, he works in collaboration with subject matter experts from Aberdeen's other core solutions practices, bringing a services perspective to a range of technology subjects. Lane also tracks and analyzes trends specific to the IT services industry. Lane has managed custom research projects for many of the IT services industry's leading consulting firms and systems integrators. This work has given him significant insights into the changing nature of the industry.

One of the most important of these changes has been the rise and evolution of offshore delivery and its impact on the global IT services industry. This report represents a continuation of Lane's extensive research into the offshore IT and business process outsourcing phenomenon. Lane is also conducting research on the internal quality assurance, client satisfaction, and business development strategies and processes of leading global IT service suppliers.

This *Buyer's Guide* is the third major research report that Lane has published about the offshore software services industry in two years, in addition to company profiles and case studies. In May 2003, Lane also published *IT Services Suppliers from Opposite Ends of the Industry Value Chain are Racing to the Middle*, a paper that examined the impact of offshore delivery on the global IT services industry.

Lane joined Aberdeen in 1998 with more than 21 years of experience in network operations, product management and marketing, and IT consulting. As a consultant, he managed systems and network architecture design and implementation, systems integration, and outsourcing projects for large-scale help desk and call center environments. Lane has traveled to Russia on several occasions for conferences and consulting projects. Lane has also contributed to several industry publications and been quoted in numerous publications, including *CIO* magazine, *The Wall Street Journal*, *BusinessWeek*, *InformationWeek*, *VAR Business*, and *Enterprise Europa*.

Lane holds a B.A. in history from Baldwin-Wallace College and an M.A. in international studies, specializing in East Asia, from Georgetown University.

Appendix A:

Lexicon of Acronyms and Abbreviations

APKIT	Information and Computer Technologies Industry Association
CAD	Custom application development
CAGR	Compound annual growth rate
CIS	Commonwealth of Independent States
CRM	Customer relationship management
ERP	Enterprise resource planning
IIPA	International Intellectual Property Alliance
IPR	Intellectual property rights
ISO	International Standards Organization
ISV	Independent software vendor
MMS	Multimedia messaging services
NASSCOM	National Association of Software and Services Companies
ODC	Offshore development center
OEM	Original equipment manufacturer
R&D	Research and development
RFP	Request for proposal
RUSSOFT	National Software Development Association, Russia
SCM	Supply chain management
SEI CMM	Software Engineering Institute Capability Maturity Model
UNESCO	United Nations Education and Cultural Association

Appendix B:

Related Aberdeen Research

Aberdeen Group has produced several publications that provide complementary market research and strategic market information relating directly to the outsourcing and offshore IT services markets:

- *IT Services Suppliers from Opposite Ends of the Industry Value Chain Are Racing to the Middle* (May 2003)
- *Legacy Applications: From Cost Management to Transformation* (April, 2003)
- *IT Outsourcing and the Midtier Enterprise* (April 2003)
- *Offshore Software Outsourcing Best Practices: Building Successful Relationships on a Diverse Delivery Model* (September 2002)
- *Offshore Software Development: Localization, Globalization, and Best Practices in an Evolving Industry* (November 2001)

Information on these and any other Aberdeen publications can be found at www.aberdeen.com or by e-mail at info@aberdeen.com.