CHAPTER THREE

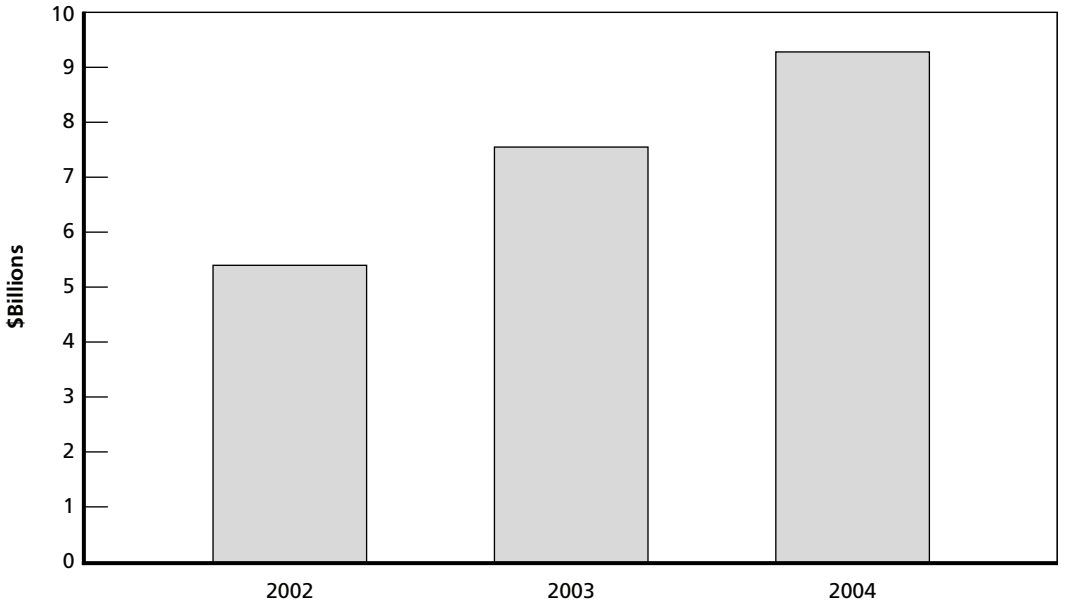
IT in Business and Industry

The Soviet Union collapsed in part due to its outdated and inefficient economy. As one would expect, many Russian businesses today are investing in information technologies to modernize their operations and management and develop new capabilities within a wide range of business processes:

- Finance: Software and systems for budgeting, internal and external accounting, tax reporting, billing, and retail and electronic transactions.
- Human Resources: Payroll, personnel management.
- Process Controls: Systems for monitoring and controlling industrial process equipment.
- Office Automation: Systems to document production and management, database management, e-mail.
- Enterprise Resource Planning: Complex database-driven software used for inventory management, purchasing, and product planning. ERP programs also may include modules for finance and human resources management.
- Customer Relationship Management (CRM): Database-driven software that enables organizations to track customer activity and customer preferences and to develop marketing strategies.
- Communications: Firms increasingly are using the Internet for marketing, public relations, and investor outreach.

This modernization process began in the mid-1990s and accelerated markedly around 2001 as the Russian economy recovered from its post-Soviet economic disarray, a recovery trend fueled by high energy and minerals prices. Since then, demand for IT goods and services by business and industry in Russia has been growing at 25–30 percent annually, and by the beginning of 2005 purchases of IT goods and services were worth about $9.3 billion a year (see Figure 3.1). Surveys by the *Ekspert*

Figure 3.1
Purchases of IT Goods and Services by Business and Industry, Dollar Value, 2002–2004



SOURCE: Vitaly Solonin et al., *The IT Market: 2004 Results*, Moscow: CNews Analytics, 2005.

Rating Agency and CNews Analytics indicate that the financial sector and telecommunications are the largest purchasers. Other leading purchasers are the oil and gas industry, electric power generators, and, more recently, mining and metallurgy.[1] Sibir, Russia's largest airline, as well, has embraced IT technologies to help it manage an increasingly complex business within an increasingly competitive market (see the related discussion under "Siberia Airlines Uses IT to Manage Growth").

The growth in IT spending has helped fuel the growth of the IT sector discussed in the previous chapter. Approximately one-half of IT spending goes toward hardware (see Figure 3.2). Hardware plays an unusually large role in IT sector development in Russia because many organizations are in the process of acquiring their first information systems. Twelve percent, or approximately $1 billion, of IT acquisitions is for services, such as systems integration and consulting. As was discussed in the previous chapter, Russian firms tend to draw heavily on in-house IT departments and expertise. This situation contrasts with global IT markets, and the West in particular, where IT services and outsourcing are a much larger portion of overall IT spending (see Figure 3.3).

[1] Dmitry Grishankov and Larisa Krashchenko, "Virtual Sector," *Ekspert*, June 23, 2003.

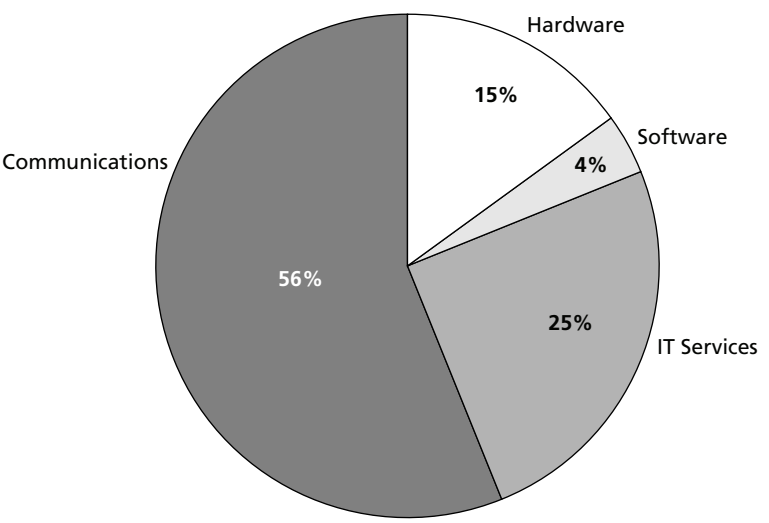
Siberia Airlines Uses IT to Manage Growth

Siberia Airlines (Sibir), which was founded in 1992, has a large domestic and international network with a major hub in Novosibirsk. Sibir is Russia's largest airline in terms of domestic passenger traffic. Its passenger load grew by more than 40 percent in 2002 alone to 2.7 million people. Sibir has adopted IT to better manage its growing and increasingly complex operations.

The main reason for upgrading the company's information management system was intensifying competition in the airline's main routes to and from Moscow, creating the need to better manage resources and costs. Sibir operates as many as 100 flights per day on its network. Because each flight involves the coordination of a significant number of suppliers, the company had to process a large volume of accounts. The volume and variety of documents slowed accounting and billing and caused troubles in managing vendor accounts and monitoring cash flows.

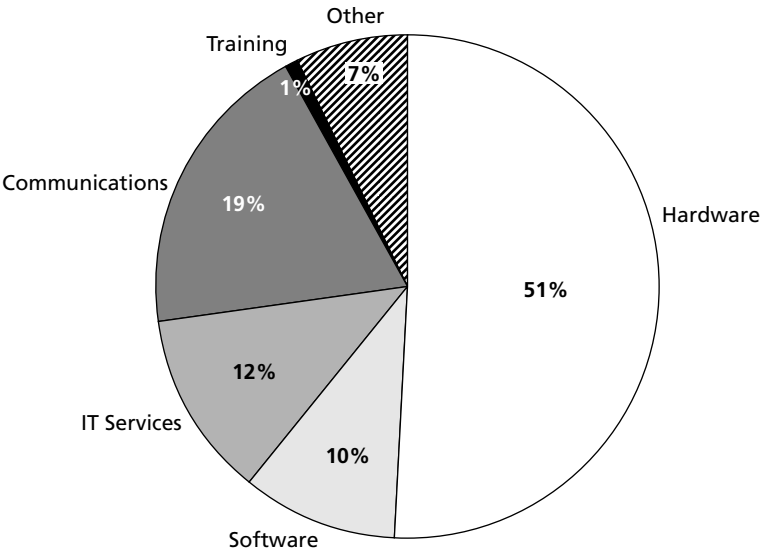
A business-process automation project was started in 1998, initiated by the company's chief financial officer and chief accountant. Galactica, a Russian enterprise resource-planning package, was chosen, and the F1 Center company in Novosibirsk was selected as the supplier and integrator. Galactica enables the company to maintain a single database with all of the company's accounts and transactions. System architecture, analytical indicators, and data flows were developed by F1. With the implementation of Galactica, the volume of open accounts receivable and accounts payable decreased significantly, the quality of financial information increased, and management of the company's cash flow improved. After launching, a separate system for accounts payable was created.

Figure 3.2
Proportion of IT Goods and Services Purchased by Business and Industry in Russia, 2004



SOURCE: Solonin et al., 2005.

Figure 3.3
Proportion of IT Goods and Services Purchased Worldwide, 2004



SOURCE: Gartner Dataquest, cited in Solonin et al., 2005.

Because integration of modern information technologies in Russian businesses is a very recent phenomenon, the process is far from complete in most firms. This lagging technology integration makes it difficult to assess in a comprehensive manner the overall impact of IT spending. The following sections present anecdotal evidence regarding three broad and somewhat overlapping objectives: exploiting new markets and developing new business opportunities, boosting the performance and productivity of operations, and improving internal management and governance.

Use of IT for Business Development and E-Commerce

Russia's banking industry was the first Russian industry to make large investments in IT in the 1990s to automate such core functions as accounting and transactions settlements. Banks that have made a commitment to develop serious client-oriented retail businesses have gone further and made significant investments in IT to improve their services. Over the past several years, Alfa Bank has invested heavily in developing state-of-the-art retail bank branches outfitted with self-service kiosks and tellers with large volumes of information at their fingertips. Citibank's retail business development strategy in Russia is to create a "virtual" presence that relies heavily on ATMs and electronic banking in an effort to overcome the overwhelming advantage Alfa Bank and Sberbank, the large state-owned savings banks, have in the number of bank

offices. Probusiness Bank is using IT to speed up intrabank communications and information delivery to enable bank representatives to appraise customer creditworthiness and make car loan and home loan decisions within a couple of hours—something generally unheard of in Russia. In January 2004, Vneshtorgbank, a Soviet legacy bank in which the federal government still has a controlling share, announced that it was embarking on a $200 million expansion in Russia and abroad and it planned to offer new services—all of which would be facilitated by information technologies. To this end, it hired Andrei Korotkov, the federal government's E-Russia program coordinator, to spearhead its IT development strategy. In recent years, Russia's insurance industry has experienced very strong growth, and many insurance companies are investing in IT for both core operations and customer service.

As recently as the mid-1990s, the abacus was the standard accounting tool used at checkout counters in Russian stores. They now have been replaced by optical scanners at fast-growing hypermarkets. The large retail chain Perekriostok and the juice and dairy products maker Wimm-Bill-Dann rely on IT to manage inventory and product flows across their rapidly growing operations, including at facilities outside of Russia.

The telecommunications industry, by definition, is an intensive user of information technologies, both on the operations side and for accounting, billing, and customer service. Jere Calmes, Vice President for Customer Relations of Vympelcom, noted that his firm in an effort to develop a competitive advantage and to distinguish itself in the marketplace had created a number of ways in which customers could manage their mobile phone accounts electronically. While there were concerns that customers would prefer the traditional method of making a payment—to a clerk at a service window—to ensure that a payment was registered, Vympelcom's customers are quickly adopting the electronic alternatives.

An example of just how far electronic commerce has come in Russia is the online brokerage system offered by the Siberian Interbank Currency Exchange (see the discussion under "The QUIK Electronic Broker.").

The Russian media are using IT and the Internet to reach new markets. As of September 2004, more than 1,200 online periodicals had been registered with the Ministry of the Press—an increase of 35 percent over the previous 18 months.[2] In late 2004, the Rambler Foundation for Research and Social Initiatives tracked 1,608 media sources.[3] *Interfax,* which was founded in July 1989 and was one of the first

[2] "Over 1,000 Periodicals Registered in Russian Internet," *RIA Novosti,* September 30, 2004; "What Do Russians Read?" *Pravda.ru*, March 26, 2003. Registration with the Ministry of the Press is a legal requirement. For comparison, as of March 2003, more than 38,000 print publications were registered.

[3] Ivan Zassursky, *Economics of Attention: The Internet in Russia in 2004*, Rambler Foundation for Research and Social Initiatives, Moscow, January 2005.

The QUIK Electronic Broker

The QUIK electronic broker (http://www.quik.ru) represents an example of successful business-process automation and the development of electronic commerce using a Russian technology.

The IT department of the Siberian Interbank Currency Exchange in Novosibirsk created a proprietary information and brokerage interface called QUIK (Quickly Updateable Information Kit) to enable clients to trade on the exchange remotely and securely. QUIK evolved out of an electronic currency-trading system first implemented by the exchange in 1994.

QUIK gives banks, financial services providers, and individual traders direct access to Russian markets for currency, equities, bonds, commodities, and other financial instruments without the need for middlemen (i.e.. brokers). In addition to executing trades through its proprietary interface or via an Internet browser, the system allows banks and their clients to monitor market information in real time and to manage their accounts. The QUIK system is certified as secure by the federal communications agency FAPSI (Federal Service for Government Communications and Information), and it is certified for trading on a number of exchanges, including Moscow's Russian Trading System stock exchange and the St. Petersburg stock exchange.

Many regional exchanges in Russia have adopted the technology, and it is being used by more than 150 Russian banks and 5,000 clients. A number of allied products have been developed, including a trading and information interface for mobile phones (pocketQUIK) and a real-time training module (QUIKjunior) for use by teachers in the classroom.

news agencies in the world to distribute its dispatches via facsimile, has grown to become the largest and most comprehensive and authoritative independent news service in Russia and the CIS. Online-only media were the first news sources to emerge on the RuNet in the mid-1990s, and they typically rank as the most popular news sources on the RuNet today. Three Moscow-oriented Internet media sites—Gazeta.ru, RosBusinessConsulting (http://www.rbc.ru), and Lenta.ru—are the most popular and influential online media sites in Russia. They also are regularly cited by the mainstream press, and their material is frequently repackaged and redistributed by regional and local online information services. The mainstream media—*Izvestiya*, *Komsomolskaya Pravda*, *Moskovsky Komsomolets*, *Kommersant*, and *Vedomosti*—also have developed popular online versions of their periodicals that carry a mixture of material from their offline productions and original content, such as discussion forums and trivia. Adjacent to the news articles on its Web pages, Izvestiya.ru offers a feed of daily news briefs on the same topics. Vedomosti.ru, popular in the business community, has a searchable database of job listings. RuNet portals, such as Yandex and Rambler, emerged in the late 1990s to become the most popular online sites, and by 2004 they equaled Russia's leading press in terms of their number of daily readers or viewers.

Russian firms of all sizes increasingly are using the Internet as a communications channel. The number of domain names registered on the RuNet grew by more than 40 percent in both 2003 and 2004, a trend attributed to growing interest by busi-

nesses in getting online.[4] In 2004, the number of goods and services, leisure, and building materials sites tracked by Rambler increased by more than 30 percent. The most rapidly growing online sector was insurance—up 114 percent in 2004.[5] Because Internet users in Russia tend to be younger, better educated, and wealthier than the general populace, they are targeted by online content providers and advertisers as style-, opinion- and thought-leaders, said Yelena Koneva, CEO of a market research firm, in comments to RAND. Given the proficiency of local IT talent, many Russian sites rival their Western counterparts in style and functionality.

Russian businesses are developing Web sites for many purposes. Many large firms have invested heavily in flashy sites for public relations purposes. Such examples include the sites of the state-controlled natural-gas producer Gazprom (http://www.gazprom.ru) and state electricity monopoly Unified Energy Systems (http://www.rao-ees.ru). Some sites are being used to a greater extent for investor relations, such as those of the major oil company Lukoil (http://www.lukoil.ru).[6] The Internet also is seen a handy way to quickly make a company and its products look up-to-date. An example is GAZ (http://www.gaz.ru), which makes a sedan that dates back to the early 1960s. In the highly competitive consumer retail and travel and leisure sectors, firms are using the Internet to advertise lower prices and enhanced services. Popular sites that have emerged are Sotovik.ru and Porta.ru, which offer consumer and technical information about mobile phones and portable electronics. Price.ru, a bulletin board, is used by smaller offline electronics stores in Moscow to advertise their prices.

Unlike in the United States, business-to-consumer e-commerce has been slow to take off in Russia. While the Internet is being used intensively for marketing, most consumers are not making purchases online. The lack of an efficient and extensive logistics network outside of Moscow makes shipping goods difficult, costly, and time-consuming. Credit and debit cards are still not yet widely held, and government regulations concerning encryption have thwarted the development of secure online transactions. Consequently, purchasers typically have to wire money via interbank transfer or fax their credit card information. That said, Russian consumers are not averse to conducting business electronically, as is often believed. In many cities, electronic payment systems are emerging that work without credit cards and work around the shortcomings of the banking system (see the related discussion under "A Russian Approach to Electronic Commerce"). Given such workarounds, business-

[4] "Internet Audience Growing Fast in Russia," *Izvestiya*, April 6, 2005.

[5] Zassursky, 2005.

[6] For more on the subject of online investor information, see Ludmila Budnikova, "The Role of Russia's Internet in Attracting Foreign Investment," in Ilya Semenov, ed., *The Internet and Russian Society*, Moscow Carnegie Center, 2002 (http://pubs.carnegie.ru/books/2002/08is/; in Russian; last accessed August 2005).

A Russian Approach to Electronic Commerce

In Novosibirsk, the city (*gorod*) e-payment system has brought e-commerce and e-government to a broad segment of the population. Gorod brings together more than 300 service suppliers and organizations and more than 20 payment-recipient organizations into a unified "one-stop" payments system (see http://www.kvartplata.ru/scdp/page; in Russian). The technology originally was developed by a local software developer, the Financial Technologies Center, on contract to the city government in Novokuznetsk in a neighboring region. The goal was to better manage payments for such basic services as rent, electricity, heating, and telephone. In the past, consumers had to fill out forms and pay in cash at the cashier window of each service provider.

The success of the system in Novokuznetsk motivated the firm to develop and manage a similar system for Novosibirsk. A citywide network of one-stop payment points was set up around Novosibirsk and neighboring communities, including 40 Sberbank branches and 48 cashier offices maintained by the local telephone company—Novosibirsk Electrosvyaz. More organizations have joined the City System, enabling residents to pay for mobile phone, cable, and Internet services; private patrol and security services; insurance; newspapers; and traffic tickets. Consumers can also make payments using a mobile phone, with the "Golden Korona" banking card at more than 70 automated teller machines, or with a standard credit card (such as VISA, MasterCard) over the Internet. (Since about 2001, many of Novosibirsk's enterprises have disbursed paychecks electronically to debit card accounts.) Within four years, City System was handling up to 1.9 million transactions a month. Other regions and cities, including Kemerovo, Bashkiriya, Chelyabinsk, Barnaul, and Izhevsk, are implementing this technology, while others, such as Moscow, are considering or implementing their own e-payment systems.

to-consumer e-commerce is increasing, and purchases totaled an estimated $662 million worth in the first 11 months of 2004—a 38 percent increase over the dollar amount of the previous year.[7]

Business-to-business e-commerce has been growing on a similar scale: Sales totaled an estimated $442 million in the first 11 months of 2004—a 40 percent increase over the previous year.[8] According to the Russian online publication *Web Planet*, 58 percent of workers in the construction industry used construction-oriented sites to gather information about building materials.[9] The biggest, and perhaps most important, e-commerce development involves business-to-government trade. In 2004, the segment saw a 15-fold increase in turnover, to more than $2.1 billion, thanks to the rapid development of online procurement schemes.[10]

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[7] Zassursky, 2005.

[8] Zassursky, 2005.

[9] Zassursky, 2005.

[10] Zassursky, 2005.

Use of IT for Managing Operations and Boosting Productivity

Since 1999, the Russian economy has enjoyed robust growth, and it has seen huge improvements in business productivity—up 49 percent in the industry as a whole between 1998 and 2003.[11] Unlike the growth in output and productivity seen in the United States in the 1990s, the turnaround and impressive performance of many firms in Russia is generally not attributed to the integration and use of IT. To the contrary, despite growing spending on IT, most managers in Russia interviewed by RAND, especially those in industry, were highly skeptical about the value of investing in IT to improve the performance and productivity of operations.

Russia's most financially successful industries—such as oil and gas production, refining, metallurgy, paper, and chemicals—continue to rely on Soviet-era plant and equipment, including many legacy information systems. While many firms have invested in basic systems for monitoring processes and equipment with the objective of improving efficiency and output quality, Soviet-era information technologies and control systems that are in use, though often crude and outdated, commonly are viewed as being adequate for the short- to medium-term. Switching to advanced process automation and integration based on international technologies is seen as very costly if not impractical, given the outdated and often worn-out condition of the underlying equipment they are supposed to control. A prominent example of the view that large-scale investment in new IT systems is not needed is the nuclear power sector: While Western industries and policymakers in the second half of the 1990s scrambled to avert the so-called Y2K problem, leaders in the Russian nuclear-power sector argued that Y2K was not a problem because Russian reactors did not depend on automated control systems.

A 1999 McKinsey report pointed out that Russian firms in many sectors can achieve significant gains in productivity and become more competitive internationally through better management of existing assets and thus avoid the need, at least for the intermediate term, for extensive investment in new plant and equipment.[12] These points were reiterated in personal interviews with RAND. Russia's second-largest automaker, GAZ, uses a large number of robots based on Western technology that the company acquired during the 1980s automation drive of the Gorbachev regime. But the cost of labor at GAZ is so low (only about 15 percent of total costs), and the number of employees is so high (even after large-scale layoffs in recent years), that its popular light commercial vans are still assembled mostly by hand. An executive of a prominent Russian heavy-engineering firm commented in 2002 that he was achiev-

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[11] Andrei Illarionov, advisor to the President of the Russian Federation, in a radio interview on *Ekho Moskovy*, January 30, 2004.

[12] McKinsey Global Institute, *Unlocking Economic Growth in Russia*, Moscow, October 1999 (http://www.mckinsey.com/knowledge/mgi/Russia/; last accessed August 2005).

ing enormous productivity increases at his operations just by getting rid of excess workers. And, he said, his operations still had a long way to go before information technologies would be needed to offset laid-off workers. Another CEO said that after acquiring a major manufacturing operation in 2002, his first priority was to secure facility perimeters and post armed guards at exit points to reduce theft. Other priorities business leaders identified for turning around their operations included shedding noncore operations, such as housing, health, and recreation facilities; reducing drunkenness; improving safety; and increasing worker discipline. (For a notable exception to this thinking, see the related discussion under "IT at Yukos.")

Many industry executives who were interviewed for this study argued that even when IT is useful for the operations side, it is not a critical necessity on the business side. Firms in petroleum, metals, and other basic industries, those executives pointed out, typically have rather stable planning horizons, customer relations, and distribution networks. Managing their supply chains without large investments in IT seems feasible to many of them. The CEO of a major tire producer commented that the supply-chain management needs for his firm were not that complex and could still be adequately managed using existing personnel and manual processes. Similarly, e-commerce also was not seen as a priority for such firms. The CEOs of two of Russia's largest industrial conglomerates known for their high-technology products both chuckled when asked for their views about information technologies. One cited several reasons why IT was not important in the business office and could be seen as detrimental to productivity. First, after spending $20,000–$30,000 per work station (including several generations of hardware, software, and networks), he complained that his secretary still could only type at a rate of 12 minutes per page. Second, having the Internet at one's fingertips is a huge distraction, the CEO added. "What does a person do with a computer?" he asked. He argued that one is tempted to spend more time then necessary engaged in e-mailing and surfing the Web. He equated having a computer at one's desk to having a television in one's bedroom: It is too easy to turn on and watch for long periods of time. Third, because government regulations require that essential documents be handled and maintained in hard-copy format, the need for electronic document management and data-storage systems was obviated.

IT at Yukos

A notable exception to the general wisdom that Russian industry need not invest significant resources in IT to improve the productivity of its operations is the Yukos oil company, which, before its breakup as a result of government intervention, touted its IT capabilities for managing crude-oil production.

In a meeting in 2003, Joe Mach, the company's vice president responsible for production, said in a RAND interview that when he joined the firm, it had no meaningful IT capabilities and it had a "know-how problem." As a result, the company's wells were underproducing, even though its production technologies and practices were fairly modern. His strategy was to use IT, paired with a rigorous staff-training program, to boost production know-how and capabilities.

With the assistance of consultants from the Western business-services firm Schlumberger, Yukos, beginning in the late 1990s, built a state-of-the-art oil well modeling and production monitoring system. Mach demonstrated how he could model reservoir dynamics and monitor in real time on his laptop in Moscow the conditions of individual wells across the company's far-flung operations. This capability, he said, gave his managers in the home office and in the field the ability to make decisions about where to target maintenance activities, among other activities. In addition, by 2003, more than 95 percent of the company's production wells had been connected to a master network that enabled operators to remotely monitor, assess, and control wellhead performance.

In Mach's estimate, Yukos' IT capabilities for oil production in 2003 exceeded those of most global oil companies. He credited these capabilities with helping Yukos to boost production to record levels even as its number of active wells decreased sharply.

Use of IT For Corporate Management and Governance

Russian firms have a reputation for poor corporate governance, and for some executives, IT is seen as a way to improve management and oversight. Views of this objective and the results that firms have been able to achieve with IT are mixed.

> Most oligarchs wanted to control the cash flows of their companies because they were afraid they might lose [the companies] as arbitrarily as they gained them.
>
> —Anatoly Karachinsky, CEO, IBS Group [13]

Motivations for IT Integration

For many executives, the most important objective for investing in information technologies is to enhance their command and control over their organizations (an objec-

[13] Arkady Ostrovsky, "High-Tech Designer Who Prefers a Low Profile," *Financial Times*, October 2, 2000.

tive not unlike that of government organizations). Corporate managers and consultants spoke of using IT to organize information flows vertically and to limit autonomy in the ranks—a process one person described as "extreme centralizing using computers." This IT strategy contrasts with the priorities in Western firms where the goal of IT systems is to better distribute and share information throughout a business enterprise and to distribute or "push out" decisionmaking responsibilities to managers and even staff and workers in the field. Several motivations for the unique IT objectives in Russia were cited.

First, the 1990s was a period of economic and organizational upheaval and uncertainty characterized by rapid and often chaotic privatizations, corporate raids and ownership struggles, asset stripping, and capital flight. Since 1998, conditions have stabilized somewhat, and property rights, in most cases, have been established. Most of Russia's new business owners are now seeking to actively manage and develop their firms. Yet, there often is a lack of reliable information at the top: A knowledgeable IT executive, speaking of one of Russia's most prominent "oligarchs," told RAND, "He himself does not know" what is going on inside his own company. One priority for businesses has been to invest in accounting and inventory management systems to tally property and assets and to establish a clear picture of cash flows. To this point, one Western executive brought into a major Russian firm said, in a RAND interview, that critical IT goals for him were gaining "top-down command and control" and "trying to get some transparency" in his firm to "stop the hemorrhaging" of cash. With timely and accurate information about their businesses, managers can then develop coherent restructuring and operational plans and impose the management discipline required to ensure execution of those plans. Before the Russian railway was converted from a federal ministry to a state-owned company in 2003, IBS was hired to help the organization document more than two billion items in its inventory so it could develop an accurate balance sheet and workable operational strategy. Having a detailed property register, it was claimed, could help boost productivity by up to 15 percent.[14]

Second, many business leaders spoke of the need to reduce fraud, kickbacks, corruption, and theft within the ranks of their firms. Better information about cash flows was seen as key to this end. Middle managers often have a vested interest in hindering greater transparency for fear of the mismanagement it might reveal. Information solutions were seen by another manager as a way to circumvent the "Soviet bureaucracy" in his firm.

Third, information command and control is equated with information security. Many IT specialists expressed concern about competitors or other hostile parties gaining access to their information systems. Their concerns are not unfounded. In

[14] Alla Startseva, "Russian Railways Co. Ready to Roll," *Moscow Times*, July 28, 2003.

early 2003, for instance, Russia's largest mobile phone company acknowledged that the personal data on its five million customers had been appropriated and CDs containing the data allegedly were being sold on the streets. A similar event happened at another major mobile-phone provider several years earlier. At the same time, a Western executive in a Russian firm commented that "security paranoia" among rank-and-file professionals impacted efforts to improve information management in his organization.

Finally, the command and control approach to IT was seen as a necessity in a country where IT infrastructure and business management capabilities in Moscow (where most corporate headquarters are located) vary significantly from those in the provinces. An IT director at Wimm-Bill-Dann, which has numerous juice and dairy operations in distant and rural locations, many of them outside Russia, noted that his firm had centralized IT facilities in Moscow because the local communications infrastructure was not sufficiently reliable, and qualified local personnel in the provinces were hard to find, train, and retain. Another discussion participant said that his firm had difficulty finding qualified managers for its large retail outlets. As a result, financial performance varied greatly between locations. Despite the significantly higher labor and real estate costs in Moscow, it was ultimately cheaper to concentrate IT operations and management decisionmaking there.

Having modern information systems also is seen as a key way to demonstrate to investors that a firm is being run in a financially prudent manner and is adhering to principles of good governance. There is a financial incentive for having such systems: Many Russian firms want to attract direct foreign investment and want to sell bonds. The use of such systems and a reputation for transparency both can boost a company's market value and credit rating. The Tyumen Oil Company began implementing an ERP system in early 2001. Alexander Bloch, the firm's chief information officer at the time, argued that the information that the system generated about the company's operations and efficiencies was instrumental in helping the company to float a $400 million Eurobond, and it facilitated British Petroleum's subsequent decision to merge its operations in Russia with Tyumen Oil's operations.[15]

Challenges of IT Integration

The impact of IT on corporate governance in Russia is difficult to assess. One reason is that many firms only recently have sought to adopt good governance policies and practices, and the IT systems to back them up. More important, there is no definitive causal relationship between technology acquisition and good corporate management and governance. Indeed, discussion participants from operating companies as well as from IT services firms pointed to many pitfalls in initial IT integration efforts and

[15] Olga Kharif, "Russia: Playing Catch-Up in Tech," *Business Week Online*, March 2003.

skepticism about its impact on management and governance. Several reasons were given for this skepticism.

Because many of Russia's business leaders have technical backgrounds, there has been a propensity to approach information technology projects with unrealistic expectations about what can be accomplished through technical engineering. Given this perspective, IT is sometimes perceived as a "magic bullet" or a "plug and play" device that produces results with which they can quickly gain control over unruly organizations, turn around operations that are losing money, and generate profits. Organizations have also made efforts to look modern by installing computer terminals in front offices and retail outlets and by developing Web sites, but often such cosmetic changes have not been backed up by investments to improve back-office business and management processes.

> People were looking at technology as a panacea that would solve their business problems. . . . In the West, you don't spend money on IT until you control the situation.
>
> —Company executive

But there are limits to what can be achieved with technology alone, and, in the estimate of one IT services executive, a lot of money has been thrown at problems and produced limited results. "Technology in and of itself, without the know-how, is a disaster," stated Yukos's Joe Mach.[16] A steel-maker made a substantial investment in a Western ERP system only to abandon it one year later for another Western product because positive results were not instantly generated. One discussion participant noted that at his firm, the Moscow headquarters had state-of-the-art equipment and a "huge top-level capability" (including "on-the-spot" support from IT staff), but such systems and capabilities did not extend throughout the company. Headquarters managers wanted state-of-the-art systems around them but were less concerned about integration of IT systems with operations in the field. Eldar Bikmaev, a vice president at Probusiness Bank, likened the situation to a Potemkin village (referring to the tale of fake settlements built by a Russian minister in the Crimea to impress Empress Catherine II): If you look behind the IT "façade" the rest of the organization "looks like Russia," Bikmaev said. In short, information technologies work only as well as the organization in which they are placed. "Management does not understand that IT is just a model of their [corporate] structure," said one IT executive. Decision-makers treat information technologies like transportation, he continued, "but rather than spending money on a new automobile, many firms should get a new driver."

[16] "Joe Mach Shares the Secrets of His Success," *Yukos Review*, January 2003.

> I don't know of one huge IT project that is well implemented in Russian business.
>
> —IT industry executive

IT may support good governance practices, but it may also reinforce bad ones. One reason Russian accounting software is often preferred over international products is that many firms maintain parallel sets of books—for official tax reporting purposes, for external reporting and public relations, and for internal management—so that firm finances will *not* be transparent. The impulse to centralize and control information is partly tied to the fact that most Russian firms have a very centralized management structure, following the "general director model" characteristic of the Soviet era. But in centralizing information and control, an executive can also hobble his management team. The control mentality affects all levels of an enterprise—not just the top level. Vladimir Andrienko, an investment manager with significant IT experience, observed that many midlevel business managers (again, not unlike government officials) continue to believe that controlling information is "a major tool of power" to be used in intraoffice politics. In such circumstances, IT simply becomes an enabler of these conflicts. Perhaps the most-clear examples of how IT may not, by itself, help improve management and governance are Russia's massive, quasi-state enterprises—Gazprom, Transneft, United Energy Systems, and Sberbank. Although all of these enterprises have been spending heavily on information systems and have developed impressive-looking Web sites, they also are known for having Byzantine and opaque management structures, questionable business strategies, and a lack of internal and external accountability.

> Technology is not what revolutionizes a company. You have to have processes in place. You just don't put technology ahead of the business.
>
> —Russian company executive

Russian businesses' experience with IT is not unique, and in many respects, they are experiencing the same challenges and learning the same lessons as businesses in the West. For those Russian firms with the appropriate management environment in place, learning appears to be occurring at a faster pace, in part because many leading firms are hiring internationally trained managers and consultants. Once some core IT systems are in place and functioning, the information generated can often point to more fundamental management needs and challenges, such as rooting out organized crime and stemming theft. In this situation, IT comes to be seen less as window

dressing and more as a key management tool, which then begins to drive corporate transformation and development. Or the opposite happens: IT project failures force managers to try elsewhere to solve problems. Two Western managers brought into Russian firms reported to RAND that they had halted or shelved front-office IT projects in favor of tackling other management needs. The aforementioned challenges may also be avoided by firms in the future: Several discussion participants spoke about how enterprise managers are starting to evaluate and restructure their business and management processes first and then they identify an IT strategy to support those processes. A Western executive brought into a large Russian firm to revamp management said he did not want to rely on technology to solve management problems. Rather, his goal was to strengthen management's engagement in the enterprise itself. "I am paid for being very simple," he added, referring to the solutions he proposed. Another Western executive noted that his Russian subordinates were closely observing the process of implementing IT solutions. After he had done the difficult work of identifying management problems and putting in place the appropriate solutions, he predicted that the subordinates would replicate the process throughout the enterprise in a fraction of the time and cost it took to do the first round of integration.