NATIONAL SECURITY RESEARCH DIVISION

THE ARTS
CHILD POLICY
CIVIL JUSTICE
EDUCATION
ENERGY AND ENVIRONMENT
HEALTH AND HEALTH CARE
INTERNATIONAL AFFAIRS
NATIONAL SECURITY
POPULATION AND AGING
PUBLIC SAFETY
SCIENCE AND TECHNOLOGY
SUBSTANCE ABUSE
TERRORISM AND HOMELAND SECURITY
TRANSPORTATION AND INFRASTRUCTURE
WORKFORCE AND WORKPLACE

This PDF document was made available from www.rand.org as a public service of the RAND Corporation.

Jump down to document

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world.

Support RAND

Purchase this document
Browse Books & Publications
Make a charitable contribution

For More Information

Visit RAND at www.rand.org
Explore RAND National Security Research Division
View document details

Limited Electronic Distribution Rights

This document and trademark(s) contained herein are protected by law as indicated in a notice appearing later in this work. This electronic representation of RAND intellectual property is provided for non-commercial use only. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents.

This product is part of the RAND Corporation monograph series. RAND monographs present major research findings that address the challenges facing the public and private sectors. All RAND monographs undergo rigorous peer review to ensure high standards for research quality and objectivity.

Russia and the Information Revolution

D. J. Peterson

Prepared for Carnegie Corporation of New York
Approved for public release; distribution unlimited

NATIONAL SECURITY RESEARCH DIVISION

The research described in this report was sponsored primarily by a grant from the Carnegie Corporation of New York and was conducted under the auspices of International Programs within the RAND National Security Research Division (NSRD). NSRD conducts research and analysis for the Office of the Secretary of Defense, the Joint Staff, the Unified Commands, the defense agencies, the Department of the Navy, the Marine Corps, the U.S. Coast Guard, the U.S. Intelligence Community, allied foreign governments, and foundations.

Library of Congress Cataloging-in-Publication Data

Peterson, D. J.
Russia and the information revolution / D.J. Peterson.
p. cm.
"MG-422."
Includes bibliographical references.
ISBN 0-8330-3858-3 (pbk. : alk. paper)
1. Information society—Russia (Federation) 2. Information technology—Social aspects—Russia (Federation) 3. Information technology—Economic aspects—Russia (Federation) 4. Information technology—Political aspects—Russia (Federation) I. Title.

HC340.12.Z9I555 2005
303.48'330947—dc22

2005026168

Cover Photo by Nikolay Nikitin/Photo ITAR-TASS

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

RAND® is a registered trademark.

© Copyright 2005 RAND Corporation

All rights reserved. No part of this book may be reproduced in any form by any electronic or mechanical means (including photocopying, recording, or information storage and retrieval) without permission in writing from RAND.

Published 2005 by the RAND Corporation
1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
1200 South Hayes Street, Arlington, VA 22202-5050
201 North Craig Street, Suite 202, Pittsburgh, PA 15213-1516
RAND URL: http://www.rand.org/
To order RAND documents or to obtain additional information, contact
Distribution Services: Telephone: (310) 451-7002;
Fax: (310) 451-6915; Email: order@rand.org

Summary

This report presents the findings of a RAND Corporation research project undertaken in Russia to examine the impact of the growing use of information and communications technology (IT) in Russia's government, economy, and society. The objective of this study is to bring to light emerging opportunities and challenges facing Russia's domestic development as well as its international posture. This study should serve to assist decisionmakers in government, business, and nongovernmental organizations (NGOs) in Russia and internationally to make more-informed choices regarding technology investment, management, and policy in Russia.

The research, which was conducted between 1999 and 2005, involved a systematic literature review of published and unpublished reports by government, industry, the media, and NGOs; an examination of Russian-language content on the Russian portion of the Internet (dubbed the "RuNet"); participation in conferences and workshops; and site visits. RAND also conducted interviews with more than 90 representatives from more than 65 large and small organizations, including IT companies; firms that use IT in their operations; research organizations; government agencies; and NGOs.

A principal conclusion that emerges from this study is that while information technologies in Russia have had a big impact on the lives of many Russian citizens who have access to those technologies, an Information Revolution in Russia's government, economy, and society, such as many of its supporters have anticipated and hoped for, remains off in the distance. A more detailed summary of findings follows.

Information and Communications Technology and the Economy

Government officials and IT industry leaders in Russia regularly extol the country's "human capital potential"—a legacy of the Soviet government's large investments in computing research and development, mathematics, and engineering largely to support its defense and space exploration objectives. Perhaps not surprisingly, since the early 1990s, a vibrant, market-oriented, and decentralized IT industry has developed very quickly and been engaged in a broad swath of activity in the fields of telecom-

munications, hardware assembly, packaged software, IT systems design and integration, and elite offshore software engineering and technology research and development. This IT sector is the most visible manifestation of an Information Revolution in Russia's economy: In 2004, Russia's mobile and fixed-line telecommunications-sector revenues were estimated at about $19 billion, and information technology goods and services totaled an estimated $9 billion to $10 billion—which together accounted for 4.9 percent of Russia's gross domestic product (GDP).

Important drivers of IT sector development are IT investments by private companies to better manage their operations, develop new business opportunities, and improve competitiveness. This process began in the mid-1990s and accelerated markedly around 2001 as the Russian economy recovered from its post-Soviet economic disarray, a recovery that was fueled by high energy and minerals prices. Since then, demand for technology and communications goods and services by businesses in Russia has been growing at 25–30 percent annually, and by the beginning of 2005 had reached an annual pace of about $9.3 billion in purchase acquisitions. In larger firms, the first step many executives are taking in this process is to use IT to better control their companies by improving accounting and recordkeeping; more closely monitoring and coordinating operations and logistics; and imposing management oversight and discipline, especially over far-flung enterprises. Information technologies are being applied in Russia's newer firms—such as mobile phone companies, airlines, financial services firms, retail chains, and the media—to help grow the firms' operations and develop new markets. For many larger firms, investment in information systems is seen as key to implementing good governance practices and attracting foreign investment.

Despite such spending and the availability of talented IT specialists, the net benefit of IT for Russian business is debated. In recent years, many Soviet legacy firms have undergone impressive turnarounds, and many new firms have enjoyed explosive growth, but most managers of these firms have a difficult time specifying IT's contribution. In their comments to RAND, many company owners and managers downplayed the need for IT, stating that their priorities are more focused on fundamental restructuring efforts: trimming payrolls; reducing worker drunkenness, absenteeism, and theft; improving product quality; and upgrading facilities, equipment, safety, and security. From their perspective, IT industry representatives questioned whether Russian managers really wanted to use IT to its fullest advantage, which would require relaxing controls on information flows and decentralizing decision-making. Meanwhile, international firms setting up operations in Russia are bringing their global IT systems and management practices along with them, thereby increasing competitive pressures. If Russian firms are to compete successfully over the long term, they eventually will have to rely more heavily on technology solutions. When they do so, they will, however, have a large pool of highly talented IT specialists on

which to draw, and they will be able to benefit from decades of lessons learned around the world.

International IT companies developing offshore software and technology solutions in Russia spoke very highly of their experiences, and many international firms—including Sun Microsystems, Intel, and Samsung—have expanded their Russian operations in recent years. Russian engineers' teamwork approach, problem-solving skills, know-how, and innovations gradually are elevating Russia's visibility in global technology markets and are giving currency to the label "made in Russia."

Russia's international IT business, however, tends to be concentrated in the high end of the market, thus making the country a "boutique" player in the global marketplace. The ability of Russia to seize a larger share of the market is constrained by a number of factors, including high taxes; undeveloped infrastructures, such as poor airport access and service; red tape and corruption; and a strong ruble, which has been bolstered by massive exports of natural resources. Russia has made progress on some of these fronts in recent years, but many of its competitors in the IT space—such as India, China, the Philippines, and Malaysia—appear to be moving even faster. While other countries aggressively market their capabilities, encourage capital investment, and implement technology-friendly policies, Russia still remains detached, if not aloof, from the global IT mainstream. Just as Russia's long-term economic sustainability has been undermined by massive capital flight, the sustainability of its IT sector is being threatened by "reverse offshoring" of key businesses functions and personnel to the United States and elsewhere. In sum, the offshore sector is unlikely to become a major driver of economic growth and diversification in Russia in the foreseeable future.

Information and Communications Technology in Government

The Putin administration has spent a great deal of time and energy examining the significance of the Information Revolution to determine its potential to improve government performance. In 2004, federal government spending on information technologies and services rose to more than $640 million, and spending was projected to double in 2005. Government spending on IT at all levels in 2004 amounted to an estimated $1.8 billion, or about 0.3 percent of Russia's GDP; this rate compared favorably with the rate in a number of other countries, such as Germany. As a result, the public sector became the largest purchaser of IT hardware, software, and services—accounting for an estimated 20–25 percent of IT purchases in 2003 and 2004—and has functioned as a major stimulant to IT sector growth.

This report identifies a number of local and international initiatives being implemented to stimulate the Russian government's use of IT. Today, a large volume of government information is now provided online—including laws and draft legisla-

tion, economic data, and agency activities and points of contact. Such information-dissemination efforts are a far cry from the situation during Soviet era, when even phone books were not printed. IT also is being applied to improve administration of social services, taxes and customs, and the banking system, and to improve public-sector procurement of goods and services.

Many such initiatives have been dubbed "electronic government" and have been given such names as "e-Moscow" and "e-Russia." The rhetoric being used to describe such initiatives focuses on improving public-sector service delivery, responsiveness, openness, and transparency. However, the substance of most efforts does not conform to models of e-government familiar in the West and elsewhere. First, efforts to implement e-government programs in Russia have been stymied by poor design, resistance to change, and a pervasive culture of secrecy and unaccountability. Moreover, the underlying drivers for most of these initiatives are more state-centric: to burnish the image of government and officials and, in the view of many, to improve the state's command-and-control capabilities *over* the economy and society. Indeed, many of the problems that IT is said to help ameliorate—secrecy, corruption, waste, and the unresponsiveness of public officials—seem to have become much worse under the Putin administration, despite huge investments in IT. This suggests that an Information Revolution in government will not occur until the public-sector culture is changed.

Information and Communications Technology in Society

In terms of individuals' lives, the changes wrought by information technologies in recent years are striking. In the Soviet era, citizens waited for years to get a telephone in their apartment. Now, they wait only a few minutes to get a phone in their pocket. Keeping in touch with friends and family in other cities and countries has been revolutionized: Just a decade ago, telegrams were a principal means of long-distance communication, and a rare occurrence at that. Now, e-mail and text messaging via mobile phones are becoming the norm for long-distance communication. Because Russia has a highly educated and technologically proficient population, the uptake and use of technology have been rapid.

In early 2005, Russia's Internet audience—defined as the share of the adult population browsing the Web or using email at least once a week—reached an estimated 10.3 million, or about 9 percent of the adult population. Since 1999, Internet penetration has been rising at about 30–40 percent annually. Internet use is strongest among Russian youths due to government and NGO initiatives to promote Internet access and training in schools and colleges. More than two out of five Internet users in Russia were under the age of 25 in 2004.

Early on, activity on the RuNet was oriented toward entertainment. Now, the RuNet is being used more intensively by the general population for personal information-gathering purposes—e.g., for checking the weather, comparing consumer goods, planning a construction project or travel, or monitoring financial markets. The RuNet is being used for personal and professional development and to pursue personal interests and hobbies, such as automobile tuning and repair, health and fitness, and sports. The RuNet also has become an important channel of alternative, independent, and unofficial information and news, especially during fast-breaking events and crises. RuNet traffic routinely has peaked during crises, such as during the Beslan terrorist incident in September 2004, when more than one-third of RuNet activity was directed at news and information sites.

Online access offers Russian citizens the unlimited information space of the global Internet; nonetheless, Russian Internet users tend to rely on domestic Web resources. While the Internet in the West is commonly seen as a force for globalization, there is little indication that information and ideas from abroad are having much impact on anything in Russia beyond pop culture and consumer preferences. While English-language proficiency has increased markedly in recent years (English instruction is now compulsory beginning in the fifth grade), language barriers and the limited availability of international sources of information and ideas in Russian clearly are factors in the reliance on domestic sources of information on the Web. Perhaps more important is an apparent lack of interest in (or aloofness from) global flows of knowledge and ideas—including a lack of interest among Russia's educated youth.

The RuNet largely has been an apolitical space. Russian users, wary of the political upheavals and rhetoric of the late 1980s and 1990s, have demonstrated little interest in reading or expressing political thought or directly pursuing activism online. Politically inclined actors tend to use varying levels of self-censorship online to avoid angering those in power. Environmentalists and human-rights advocates have been particularly avid users of the Internet and e-mail—but mostly among themselves and their counterparts abroad.

Because of these factors and the fact that Russia's active Internet-using population has been fairly small, overt controls over the Internet have not been implemented on a large scale, as is the case in China and other nations. (Nevertheless, the authorities have in place organizational and technological systems to monitor public and private information flows at any time.) The Kremlin has applied "soft power" to shape Internet development. It has aggressively developed a variety of official and unofficial Web sites to get its message across—many of which are proving to be fairly popular with the public. In short, while exploitation of IT and the Internet has become more prevalent, the political climate has become more authoritarian and the government less accountable to the public. Russia (in contrast to the trend in

Ukraine and Central Europe) in many ways has become more politically and socially isolated from the global mainstream.

In 2004 and 2005, as Internet activity continued to grow, a number of more politically dissident voices emerged on the RuNet, perhaps in response to the IT-enabled political activism witnessed in such nearby countries as Serbia, Ukraine, and even China. Government officials appear to be taking these developments very seriously, with increased calls from many quarters for Internet controls and censorship. It is widely anticipated that more-aggressive efforts will clamp down on Internet (and mobile phone) freedoms, as the regime has done with broadcast and print media, especially if it is faced with a crisis in which the Internet becomes a more potent source of alternative information and views. The ability of the regime to firmly control access and content for a long period of time—especially given Russia's large pool of highly talented IT specialists and enthusiasts—is unclear. Like the regime's selective attacks on business, any such attack on Internet freedom is likely to further erode the country's and the regime's image and further remove Russia from the global social, political, and technology mainstream.

To conclude, instead of catalyzing change, information technologies—for better or worse—largely have mirrored or reinforced ongoing business, government, social, and political developments in Russia. This situation is not unlike that in other countries: It has taken decades of investment, integration, use, and learning for institutions and individuals in the West and elsewhere to realize and recognize the impact of the Information Revolution. Given Russia's late start, it likely will take many years, though probably not decades, for information technologies to become deeply embedded and utilized before their impacts are fully realized. Until then, the role and effect of IT will be debated in Russia, as it will around the world, by techno-optimists and techno-pessimists. Perhaps in this way, the Information Revolution in Russia is proceeding apace.