

5. Richard Silberglitt a. o. 'Global Technology Revolution 2020: Technology Trends and Cross-Country Variation'. – http://www.rand.org/pubs/research_briefs/
6. Sergey Andreev. ... – <http://izvestia.ru>
7. Sergey Glaziev. – <http://rodina-nps.ru>

Kudryashova O.A., Afonina I.S.

SOCIAL AND ECONOMIC PROBLEMS OF ICT IMPLEMENTATION IN RUSSIAN HOUSEHOLDS

(SPbGUEF, St. Petersburg)

Information and communication technologies (ICT) are expected to be involved in all spheres of the society life in the immediate future; in that households do not stand aside, though that seems to be a two-way process. On the one hand, computerization throughout people's everyday life is gathering pace; on the other hand, the financial and economic crisis consequences have led to decrease in demand for innovative information and communication devices and slowed down the process of ICT penetration into Russian households.

As the government's duty is to support and improve human welfare, it gives much attention to enhancing ICT awareness of the population. The ICT social programs, exemplified in The School Computerization Program, computerization of kindergartens, libraries and clinics of the Russian Federation, are targeted at getting children acquainted with ICT since their early age, which means they become digital natives. In view of the introduction of electronic innovations in the social sphere of life, one should not overlook serious negative consequences, like deteriorating family interaction, depression and detachment from the outer world.

The share of large families in Russia is insignificant, being only 6.6 percent of the total number of families with dependent children. At first glance unimpressive percentage, if converted into figures, produces the share of about 3 mln. out of 30 mln. families. Large families (with more than three dependent children) being in a difficult financial situation after the crisis have no possibility to afford expensive equipment.

One of the major consequences of the financial and economic crisis was mass redundancies. Specialists in different areas were reduced because of financial problems in the organization or its bankruptcy. About 5 percent of Russians were made redundant, mainly workers in the manufacturing industry. Unemployment rate increased from 6.1% in 2007 to 7.5% in 2010.

Another crisis aftereffect was low wages and non-payment. The total amount of debts in 2008 was RUR 4,674m and RUR 3,565m in 2009. The number of citizens who faced delayed payment of wages was 169,000. A sharp rise of prices for goods and services aggravated the problem of unemployment. All these factors impacted households, forcing people to re-set their priorities and values.

The aspect of ICT and households interaction covers several urgent issues: income level in terms of Russian households; return on investment rate for IT companies; computerization level for Russian households.

Russia is the world's largest country with the population of about 142.9 mln. people. Unfortunately, the social stratification level in Russia is too high, since there is hardly any middle class segment, which leaves only rich and poor classes. The family income gap is enormous, predominant income being average or below average.

According the table, the bulk of Russian households have an income between RUR 4,500.1 and RUR 6,500.0, so they cannot afford to buy expensive ICT novelties. The only group, which can make expensive purchases without saving for months, is households with monthly income more than RUR 28,500.

Here are some figures for Russian household income levels.

	Total number of households	
	Number of households,%	Number of habitants,%
All surveyed	100	100
including average per capita monetary income in the month, rubles		
less than 500.0	0.1	0.1
from 500.1 to 2,500.0	2.4	3.6
from 2,500.1 to 4,500.0	8.9	11.0
from 4,500.1 to 6,500.0	13.7	15.7
from 6,500.1 to 8,500.0	13.6	14.3
from 8,500.1 to 10,500.0	10.5	10.5
from 10,500.1 to 12,500.0	8.5	8.4
from 12,500.1 to 14,500.0	6.6	6.4
from 14,500.1 to 16,500.0	6.3	6.1
from 16,500.1 to 18,500.0	4.6	3.9
from 18,500.1 to 20,500.0	3.9	3.4
from 20,500.1 to 22,500.0	2.9	2.3
from 22,500.1 to 24,500.0	3.0	2.7
from 24,500.1 to 26,500.0	2.5	1.9
from 26,500.1 to 28,500.0	1.7	1.4
more than 28,500.0	10.8	8.3

Today the level of modernization is so high that we cannot imagine our everyday lives without ICT. They indisputably occupy a prominent place in the entire spectrum of our activities such as work, business, education or housekeeping.

It seems inexplicable that companies reveal such high rates of profit while at the same time common people's incomes are rather low. But this situation has a reasonable explanation. Nowadays ICT are so widespread and vital, that if you even do

not have enough money for buying the latest model of appliance, you will try to save up money or use the special discount offers and favorable lending conditions of IT companies for their customers. Pupils and students are their target audience because they are key purchasers of computers and other electronic gadgets.

The total revenue of top 80 IT companies increased for the year by 28 percent and amounted to RUR 210 bln. Outwardly over the last few years the situation in the IT market remains virtually unchanged. About a year ago the IT sector revenue was earned from the distribution activities, as well as from the equipment and software supplies in the framework of integration projects. The total annual growth of these sectors amounted to 48 percent. Equipment manufacturers and service companies in telecommunications retained their previous growth rates – 13 and 33 percent, respectively. However, there are three recent trends. First, a sharp decrease in growth rates of IT services segment (down to 19.5 percent). Secondly, a significant growth of 47 percent (versus 36 percent) was demonstrated by software developers. And thirdly, a serious interest in investing activities has recently whipped up.

Russia is still building its ICT infrastructure, policy, and legal environment. Despite this, the Russian ICT market shows promising 15-18 percent annual growth. Here are some key statistics on the computerization level of Russian households.

Main Telephone lines per 100 inhabitants	21.82
Internet hosts per 10,000 inhabitants	22.22
Personal computers per 100 inhabitants	4.29
Piracy Rate	79%
Percent of PCs connected to Internet	5.18%
Internet users per host	9.49
Internet users per 100 inhabitants	2.11
Cell phone subscribers per 100 inhabitants	2.22
Average monthly cost for 20 hours of internet access	US\$14.83

Social and economic problems influence family relationships. Adults are concerned about improving the quality of life for their families and deprive their children of care and supervision. Therefore, criminal activity of children and commitment to various disadvantaged subcultures is increasing. In 2009 the level of juvenile crime increased by 25 percent. In addition to criminal activity, there is a computer and Internet addiction in two aspects: computer games and virtual worlds. The first aspect is not so dangerous because the majority of gamers understand that it is only a game and some day they will be back to reality. Yet the popularity of computer games is growing fast, as is evidenced by the 10 Top Internet games in 2010:

1. World of Warcraft (2004) / Blizzard Entertainment
2. Call of Duty 4: Modern Warfare (2007) / Infinity Ward
3. Halo: Combat Evolved (2003) / Gearbox, Bungie
4. The Sims (2000) / EA Maxis
5. The Sims 2 (2004) / EA Maxis
6. RuneScape (2001) / Jagex Ltd.
7. Diablo 2 (2000) / Blizzard Entertainment
8. Team Fortress 2 (2007) / Valve

9. Counter-Strike (2000) / Valve

10. Counter-Strike: Source (2004) / Valve

About 300,000 people are interested in computer games to a small extent, visiting game portals at least once a week just to monitor novelties, best games, demo-versions and announcements. The other group of 750,000 players is worryingly fond of World of Warcraft and about 35,000 players regularly play Counter-Strike. These gamers spend all their time playing, so they do not have free time for socializing or visiting theatres and museums. One of Russian servers conducted a survey of how much time people spend on computer games. The average time spent on computer games does not exceed 3-5 hours a week with low-level and 9-11 hours with high-level players. A separate subgroup no more than 10 percent have one day a week almost fully occupied with the game.

Dissolution in virtual space is far more dangerous. Virtual Worlds absorb people, who are lost in unreal life. They compare the real life with the virtual world and make their choice in favor of the latter, which makes them helpless in everyday situations.

There is a tendency to use different social networks to contact friends and partners instead of meeting them face-to-face. The most popular social networks and blogs in Russia are:

1. Vkontakte.ru, 78.8% users
2. Odnoklassniki.ru, 67.5% users
3. Livejournal.com, 34.4% users
4. Youtube.com, 1.7% users
5. Twitter.com, 0.9% users
6. Myspace.com, 0.8% users
7. Facebook.com, less than 0.4% users

The low rate of highly popular overseas social networks use is justified by the fact that Russian consumers prefer Rutube.ru (68,6%) to Youtube.com, Diary.ru (82,1%) to Livejournal.com, Moikrug.ru (82,0%) to Myspace.com and Vkontakte.ru (78.8%) to Facebook.com. Video chats like Skype, ICQ, ooVoo, Windows Messenger are also extremely popular.

Here is a comparison of three major social networks in Russia: Vkontakte. ru, Odnoklassniki.ru and Facebook.com. In 2009 Facebook earned about \$900 million, Russian Vkontakte and Odnoklassniki – \$34.5 million and \$44.3 million, respectively. The biggest revenue is brought to social networks by users themselves, and not only advertisers. Subscribers generously spend real money on virtual gifts and a variety of services (the increase of ratings and etc.). Advertising revenue of Vkontakte in 2010 amounted to RUR 1.36 bln. (\$44.7m), there is still non-advertising income. Odnoklassniki received \$23.3m from media advertising in 2010 and \$45.7m for paid services. And for comparison, the advertising revenues of Facebook in 2010 amounted to about \$1,86 bln.

The excessive passion for games and social networks is a great danger for young families, who have just married and do not know everything about each other. If one of the spouses always sits in front of the monitor or game console and does not pay enough attention to the other spouse, this could be the reason for a divorce along existing vices in the society such as alcoholism and drug addiction.

Despite all the problems of household and ICT interaction, progressive development of the humanity is inconceivable without ICT. The Internet gives plenty of advantages and opens new opportunities for everyone. ICT are vital, yet they should help people develop, improve, instead of carrying off from the reality.

1. Life becomes simpler. People have possibilities to plan their leisure and holidays from home. You can book a flight and accommodation sitting in your sofa and not wasting your time on visiting different agencies. Another way for life simplification is to use technical devices to facilitate physical and intellectual workload (computers, robots, kitchen appliances). Really fascinating are mechanical human assistants: Robotic vacuum cleaners (from famous brands, as Zuchetti, iRobot, Electrolux, LG, Samsung); Robotic Cleaners; Robots for cleaning swimming pools; Robots – lawn mowers.

And incredibly amazing robots are: TurtleBot (it can create 3D-maps of space, has the function of navigation in space and thus to follow you); Roombots (They represent a small modular robots that can build themselves into various objects); Bracelet titled Ref. (Ref robot responds to your pulse changes. When it is too rapid, the robot performs pulsed effect on your skin and, thus, normalizes your status); Robot Heinz Automato57 (This device is designed to perform one and only one function – it squeezes a bottle of Ketchup Heinz. What is amazing that the robot operates around your plate with great speed).

Some sophisticated billionaires like Bill Gates even have *Smart Houses* or *Digital Homes*, modern automated residences arranged with high-tech devices for the convenience of tenants. The "smart home" system is able to recognize specific situations and respond to them. All up and running systems are functioning to satisfy your wishes, matching time of day, your position in the house, weather, exterior lighting, etc. to provide the comfort inside the home.

2. The 21 century is the century of International cooperation: experience and ideas exchange are faster and wider with online conferences. Innovative types of websites provide all opportunities to conduct webinars. One of the most popular online conference portal in Russia *2nets* combines components of social networks, electronic office and collaboration. This portal works not only for companies but it also attracts individual users with its expanded possibilities for cooperation.

3. Developing international contacts lead to cultural development. Internet acquaintances enable people to communicate with friends and partners throughout the world at any moment. They make new friends, enlarge the knowledge about different countries and get new experience. Another opportunity and probably one of the best inventions is virtual excursions to world largest cities and museums. If you have no time or money to visit a sight, you can enter a website and enjoy viewing amazing architecture of many cities, famous museums and exhibitions.

Many museums have their own websites with online excursion access. In France such option is offered by Museum d'Orsay (Paris), Chateau de Versailles museum (Versailles), Louvre Museum (Paris), in Great Britain – The National Gallery (London), The British Museum (London), in Italy – Museum Uffizi (Florence), Vatican Museums, in Spain – Museum Prado (Madrid), in Russia – the Hermitage (Saint-Petersburg).

4. Generation links are developing. Today there are special courses for retired people, where they are trained to use personal computers and Internet. New common interests build up bridges over the generation gap and the links between generations are strengthened.

5. Another ICT achievement is simplification of housekeeping by calculation of the family budget or creating an interior design of your house with the aid of certain software.

It is hard to know what might be invented in the near future, but that undoubtedly will be. The hectic pulse of contemporary life requires ICT development and improvement both in manufacture and households. ICT is a key to technological advance of any civilization.

Khanykova V.

RUSSIAN RAILWAYS: THE EXPERIENCE OF A STATE-OWNED JOINT-STOCK-COMPANYING IT

(PbGUEF, St. Petersburg)

A government-granted monopoly

A government-granted monopoly (also called a «de jure monopoly») is a form of coercive monopoly by which a government grants exclusive privilege to a private individual or firm to be the sole provider of goods or services; potential competitors are excluded from the market by law, regulation, or other mechanisms of government enforcement. Copyright, patents and trademarks are examples of government-granted monopolies.

Economic description

The second largest network in the world with 85,200 km of track, of which 43,000 km are electrified.

Carries over 1.1 billion passengers and 1.1 billion tonnes of freight annually across 11 time zones

Responsible for 43% of Russia's total freight traffic (including pipelines) and more than 41% of passenger traffic

Employs over 1 million people

A major contributor to the fast-growing Russian economy

Assets worth over USD 88 billion (as of 31/12/2008)

Russia's fourth-largest company by revenue – over USD 41 billion for 2008 (according IFRS)

Comprises 987 enterprises and 165 subsidiaries

Rolling stock includes:

20,100 goods and passenger locomotives

624,900 goods wagons

24,100 long-distance passenger carriages

15,600 short-range passenger carriages