

Lappeenranta University of Technology  
Faculty of Technology Management  
Department of Industrial Management

16.4.2008

Bachelor's thesis

RUSSIAN MOBILE TELECOMMUNICATIONS MARKET: PLAYERS AND TRENDS  
OPERAATTORIT VENÄJÄN MATKAPUHELINSEKTORILLA

Examiner:  
Professor Tauno Tiusanen

Authors:  
0303379 Mikhail Kondra  
0264816 Kai Lempinen

## ABSTRACT

**Authors:** Kai Lempinen and Mikhail Kondra

**Name of the work:** Russian Mobile Telecommunications Sector: Players and Trends

**Department:** Industrial Engineering

**Year:** 2008

**Place:** Lappeenranta

Bachelor's thesis. Lappeenranta University of Technology.

32 pages, 4 pictures, 2 tables

Examiner: Professor Tauno Tiusanen

**Keywords:** Russia, mobile, operator

Objective of this work was to clarify the competitive situation of Russian mobile telecommunications market: who are the main players, are there many regional operators, what is the possibility of new entrants and how intensive is the competition.

In the beginning the history of Russian mobile telecommunications sector is described. In the next chapter environmental factors of the market are examined with the help of PESTEL analysis. After that, players of the market are introduced to ease the following of next chapters. The main theory for this work was industry analysis of five competitive forces by Michael Porter, which is presented before the theory related industry analysis of Russian mobile telecommunications industry. Research for the industry analysis is mainly based on up-to-date articles describing Russian market. As a result of the industry analysis, competitive situation of Russian mobile telecommunications industry and the future prospects are described with the help of factors coming from the PESTEL-analysis. Finally development and future prospects for Russian 3G are reported.

As a result of this work, it can be said that Russian mobile telecommunications market is not likely to maintain the growth of previous years, because the market is near saturation. According to passive SIM-cards it has already received saturated. The saturation will also make the market share game between operators more volatile. The market is dominated by three national operators that covered 88% of the income in the first half of 2007. In addition to these three, there are also several regional operators. Structure of the market is likely to consolidate.

## TABLE OF CONTENT

1	INTRODUCTION .....	1
1.1	Background of the work .....	1
1.2	Objective of the work .....	1
1.3	Structure of the work .....	1
2	HISTORY OF RUSSIAN MOBILE TELECOMMUNICATIONS MARKET .....	2
2.1	Legacy of USSR .....	2
2.2	Development during post-soviet Russia .....	2
3	ENVIRONMENTAL FACTORS OF THE MARKET .....	3
3.1	Theory .....	3
3.2	Economic situation in Russia .....	4
3.3	Politics .....	7
3.4	New political situation .....	8
4	PLAYERS OF THE MARKET .....	9
4.1	Russian mobile operators .....	9
4.2	Major owners in Russian mobile operator market .....	13
4.3	Mobile Retail Chains .....	15
5	RUSSIAN MOBILE TELECOMMUNICATIONS INDUSTRY .....	16
5.1	Theory of industry analysis .....	16
5.2	Rivalry in the mobile operator industry .....	20
5.3	Entry barriers to mobile telecommunications market in Russia .....	25
5.4	Customers .....	26
5.5	Network suppliers .....	27
5.6	3G vs. Wi-Fi .....	27
5.7	Competitive situation of Russian mobile telecommunications industry .....	27
5.8	Future prospects for the industry .....	28
6	3G IN RUSSIA .....	28
7	SUMMARY .....	31
	REFERENCES .....	34

## List of abbreviations

2G	Second Generation
3G	Third Generation
ARPU	Average Monthly Revenue per Unit
DVB-H	Digital Video Broadcasting - Handheld
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
EDGE	Enhanced Data Rate for GSM
ENCO	Electrosvyaz of the Novosibirsk region
FAS	Federal Antimonopoly Service
GDP	Gross Domestic Product
GPRS	General Packet Radio Service
GSM	Global System For Mobile Communications
ILO	International Labor Organization
IMT	International Mobile Telecommunications
IMT-MC	International Mobile Telecommunications – Multi Carrier
IP	Internet Protocol
ITC	Information Technology and Communications
KGB	Translation of Russian “КГБ” what stands for Committee for State Security
LLC	Logical Link Control
MBT	MTS’s symbol in New Your Stock Exchange
MCS	Mobile Communications Systems
MGTS	Translation of Russian “МГТС” what stands for Moscow City Telephone Network
MMS	Multimedia Messaging Service
MNP	Mobile Number Portability
MRC	Mobile Retail Chain
MTS	Mobile TeleSystems
MVNO	Mobile Virtual Network Operator
NCC	Novgorod Cellular Communications
NMT	Nordic Mobile Telephone
NTC	New Telephone Company
NYSE	New York Stock Exchange
OJSC	Open Joint Stock Company

PR	Public Relations
R&D	Research and Development
RBT	Ring Back Tone
RTDC	Russian Telecommunications Development Corporation
SIM	Subscriber Identity Module
SMS	Short Message Service
TV	Television
US	United States
USD	United States Dollar
USSR	Union of Soviet Socialistic Republics
VAS	Value Added Service
Wi-Fi	Wireless Fidelity
WWF	World Wildlife Fund

## List of tables and figures

Table 1. Social Indicators .....	5
Table 2. Russian Population .....	6
Figure 1. Russia's population will decline by 12 percent between 2000 and 2025 .....	6
Figure 2. Market breakdown by SIM cards 31 <sup>st</sup> January 2008.....	9
Figure 3. MTS' operating indicators for Russia (US\$) .....	30
Figure 4. 3G subscriber forecasts for Russia (millions) .....	31

# **1 INTRODUCTION**

## **1.1 Background of the work**

In the beginning of 21<sup>st</sup> century Russian mobile telecommunications sector experienced rapid growth in the GSM network. Growth of the sector has however decelerated and therefore it faces new challenges. The research problem is to define how the market has changed during the last five years.

## **1.2 Objective of the work**

In this bachelor's thesis main objective is to define the competitive situation and the structural development of Russian mobile telecommunications market based on articles covering the industry and the market. Also the future trend for the sector is estimated. In addition to that we also try to give a clear picture what kinds of operators are there in the market and what is their relative status. The analysis of competitive situation of the market is our own contemplation. It is meant to describe clearly why the market is in the current stage and what is likely to happen in the near future.

## **1.3 Structure of the work**

In the beginning of the work, quick insight of the history of mobile telecommunications market in Russia is given. In this chapter we describe the development of Russian economy and mobile operator market from soviet times to present day.

To begin the analysis of mobile telecommunications market, environmental analysis has been done with the help of PESTEL analysis. After that, the players of the mobile telecommunications market are introduced. In this chapter biggest operators and other significant players within the market are presented. In the next chapter, factors defining the situation and development of the industry have been analyzed with the help of five competitive forces –analysis by Michael Porter. First the theory of the five forces is presented and after that it is applied to Russian mobile

telecommunications industry. In the end we present the current stage of 3G implementation in Russia.

The Bachelor's thesis is concluded with summary of situation of 2G and 3G and overall future perspective for the industry. This part is our contemplation of what has happened in the market and for what reason, and what is likely to happen in the foreseeable future.

## **2 HISTORY OF RUSSIAN MOBILE TELECOMMUNICATIONS MARKET**

### **2.1 Legacy of USSR**

In communist system of central planning all communication systems were fully owned by the state. All kind of communication devices, such as typewriters and photo copying machines had to be registered. Telephones were not as available to the people as in the West and authorities monitored the use of private means of communication. Penetration of telephones was extremely low in the last years of Soviet Union: there were only 15 telephones per 100 inhabitants. (Tiusanen 2004, 7)

Dismantling of USSR in 1991 was precondition for the revolution of telecommunications sector in Russia. Mobile telecommunications sector had already emerged in the West. In Russia hard climate, size of the country and lack of proper infrastructure made the implementation of mobile telecommunications networks easier compared to fixed-line networks. (Tiusanen 2004, 7)

### **2.2 Development during post-soviet Russia**

The 1990's has been described as decade of catastrophe for Russian people. Output reduced a lot, economic development was unstable, unofficial economy grew and the country faced hyper inflation in 1998. Regardless of the negative actions, many reforms were passed and the mass privatization program, that set the way for new Russia, was implemented. (Shleifer & Treisman 2005, 151-153)

After 1998 devaluation Russian economy has developed fast with annual growth rate around 6 - 7 %. Main reason behind the growth has been increase in oil price. Most of Russia's GDP is built up from export of oil and natural gas. This economic boom has increased income level of Russians and therefore helped the growth of mobile telecommunications market, even though the economic inequality has also grown. (Tiusanen 2004, 10) (Shleifer & Treisman 2005, 158-160)

In Russia, first licenses for mobile operators were handed in 1991. The first company to launch NMT-450 service was Delta Telekom in Saint Petersburg. (Puumalainen et al 2002, 608) In the beginning, development in mobile telecommunications sector in Russia was very slow, because of the aftermath of USSR. In year 2000, there were still less than 3 mobile subscribers per 100 people. It is extremely low compared to the neighboring country Finland's over 70 mobile subscribers per 100 people. (Tiusanen 2004, 14) Despite of the late start or perhaps because of that, the Russian mobile telecommunications market has grown rapidly and today it has already reached saturation level in terms of SIM cards. (Cnews 2008a)

### **3 ENVIRONMENTAL FACTORS OF THE MARKET**

#### **3.1 Theory**

PESTEL framework is composed of six main types of Macro-environmental influences: political economic, social, technological, environmental, and legal. Analyzing this variety of environmental forces can give a good picture of structural drivers of change and possible opportunities or threats for a company. Environmental influences, in comparison to the past, can have different impacts on industries in the future. Thus it is important to consider different scenarios in which environmental influences will have different effects on industries in complex and rapidly changing environments. (Gerry Johnson & Kevan Scholes 2002, p. 102)

Political factors of influence include government regulations and legal issues. For example such factors are taxation policy, employment laws, foreign trade regulations, restrictions and tariffs, and political stability. (Gerry Johnson & Kevan Scholes 2002, p. 102)

Economic factors can affect purchasing power of potential customers and firm's costs. The following are examples of economic factors in the macro-environment: economic growth, interest rates, unemployment, disposable income, exchange rates, inflation. (Gerry Johnson & Kevan Scholes 2002, p. 102)

Social factors include the demographic and cultural aspects of the external macro-environment. These factors have affect on customer needs and size of potential markets. Some social factors include: population growth rate, age distribution, attitudes to work and leisure, and lifestyle changes. (Gerry Johnson & Kevan Scholes 2002, p. 102)

Technological factors include infrastructure and scientific development by government and industry, what can lower barriers to entry. Here are some of the technological factors: R&D activity, speed of technology transfer, technology incentives, and rates of obsolescence. (Gerry Johnson & Kevan Scholes 2002, p. 102)

### **3.2 Economic situation in Russia**

Certain macro-economic factors are important for mobile telecommunications market. Such factors like disposable income and general economic growth of the country measured by GDP have direct impact on ARPU of mobile operators. Also demographic factors, which influence the GDP, and size and composition of the market, may show firms how to approach the market. (World Bank, 2007)

#### **3.2.1 Income**

Use of mobile phone services is not a necessity for consumers. Therefore they need to have disposable income to use the services and thus personal income level is an important factor for mobile phone industry. (Tiusanen 2004, 7 - 8)

In 2007 increase in income level in Russia was higher than expected. According to Rosstat, disposable income increased by 12.9% in first nine months of 2006 and 16.2% in first nine months

of 2007, (Table 1). Increase in nominal wages above 20% is seen in many sectors of the economy. Average monthly dollar wage was \$497 (increased by 31%) in the first nine months of 2007. With such growth average monthly wage can exceed \$520 in 2007. (World Bank, 2007)

### 3.2.2 Employment

The average unemployment rate fell to 6.3% in the first nine months of the year, compared to an average of 7.3% for the corresponding period of 2006 (Table 1). By September 2007 the unemployment decreased to 6%.(World Bank, 2007)

Table 1. Social Indicators

	2003	2004	2005	2006	9M-2006	9M-2007
Real disposable income growth, %	14.9	9.9	8.8	10.2	10.6	12.4
Real wage growth, %	10.9	10.6	10.0	13.4	12.9	16.2
Average monthly wage, USD	179.4	237.2	301.6	394.7	380.2	497.4
Unemployment (% ILO definition)	8.6	8.2	7.6	7.1	7.3	6.3

Source: Rosstat as cited in World Bank report #15

### 3.2.3 Demographics

Short term demographics (Table 2) show a decrease of Russian population during last 4 years. According to this data on average from 2004 to 2007 Russian population was decreasing by 0.46%.

Table 2. Russian Population

Years	Total population	of which		As percentage of total population	
	mln. persons	Urban	Rural	urban	rural
<b>2004</b>	144.2	105.8	38.4	73	27
<b>2005</b>	143.5	104.7	38.8	73	27
<b>2006</b>	142.8	104.1	38.7	73	27
<b>2007</b>	142.2	103.8	38.4	73	27

Source: Federal State Statistics Service

Russian population is shrinking and rapidly aging. Russia's population is expected to shrink by 12% (over 17 million people) by year 2025 (Fig. 1). In addition by the same year, rapid aging of population will lead to 20% of population being over the age of 65. This will have negative effect on Russian economy due to decrease in working population by 10%. (World Bank, 2007)

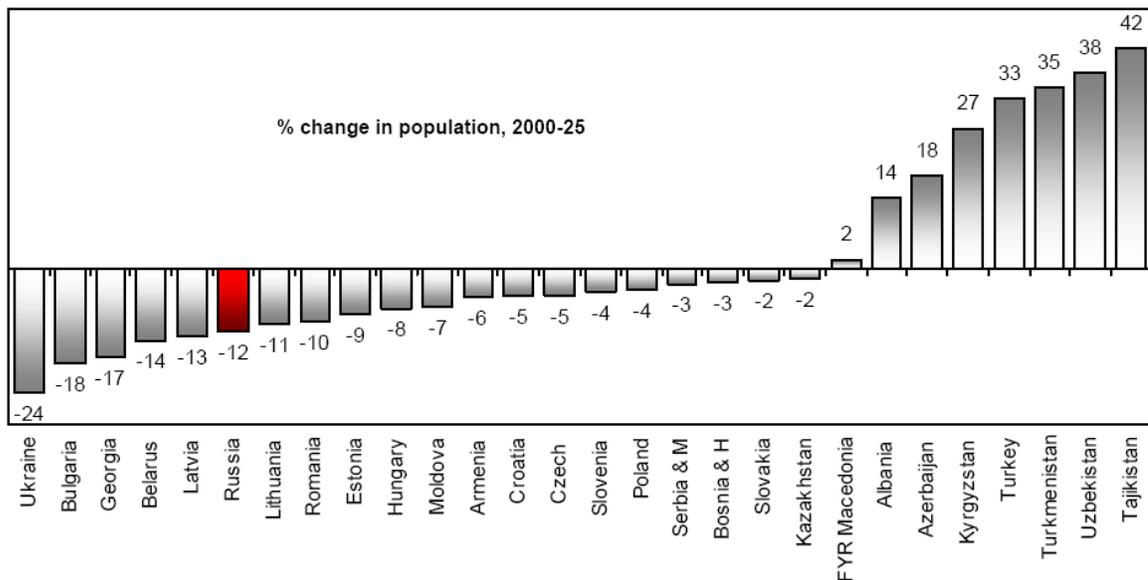


Figure 1. Russia's population will decline by 12 percent between 2000 and 2025 (Source: Authors' calculations, from United Nations (2005) as cited in World Bank report #15)

### 3.3 Politics

During the 90s many acquisitions and other commercial and economic activities of Russian companies were done not completely according to the law what gave Russian government ability to find old skeletons of these firms and thus influence them if the firms' owners were to trespass governments area of control, mainly in politics.

In the beginning of 2004 Vimpelcom was scrutinized by Russian government through telecommunications ministry for not having a GSM license for the Moscow region which instead belonged to wholly owned company by Vimpelcom KB Impuls. Only after intervention of the Norwegian government, whose telecommunications company Telenor owned a quarter of VimpelCom, the Russian ministry backed off. (Economist, Anon, 2004)

Industry analysts alleged that one of Vimpelcom's shareholder's, Alfa group's, acquisition of blocking stake in Megafon started the regulatory scrutiny. This may have happened according to allegations by analysts that people high up in the telecommunications ministry had ties to Megafon. (Economist, Anon, 2004)

In 2004 Vimpelcom was scrutinized by Russian tax office with \$158 million back-tax claim. Alfa group, which was controlled by Mr. Fridman, owned 25% stake in Vimpelcom. In NYSE composite trading Alfa group's, American depositary receipts dropped 10%. IPOC International Growth Fund, Megafon's shareholder, challenged the earlier acquisition of Megafon by Alfa group. Later Alfa group has linked Mr. Reiman, Russian telecommunications minister, to this scrutiny through another Megafon's shareholder company Telecominvest which was started by him in late 90s. Some analysts think that the reason for Vimpelcom's troubles in 2004 was Fridman's political feud with people close to Putin. Fridman was careful not to anger Russian President Putin even by forbidding television channel CTC to hire journalists the Kremlin didn't approve of according to the channels founder Peter Gerwe, however some thought he became too politically active in front of Putin. It wasn't seen as serious as previous situation with Yukos but still with noticeable consequences. (Chazan & White, 2004)

A week later after Vimpelcom's tax problem Deutsche Telekom sold 12% of its stake in MTS. According to Deutsche Telekom they did not sell the stake due to Vimpelcom's problems. How-

ever stocks of Russian telecommunications operators were battered after the news of the Vimpelcom's tax problem. (Chazan & White, 2004)

In the past spreading to other Russian regions meant acquiring licenses for those regions what was a challenge. Megafon, which was suspected of having connections in the Ministry of Telecommunications, gained full country-wide license coverage in Russia before others who had to get their licenses through acquisitions of smaller regional operators which already had the licenses for their local regions. (Ouida Taaffe, 2005)

### **3.4 New political situation**

Dmitry Medvedev won the Russian presidential election of 2008. According to Bear Stearns, one of the largest investment banks in United States, political risks should subside with Medvedev in power as well as Russian market becoming more "open and liquid". The bank also recommended its investors to continue to invest into Russian companies specifically mentioning MTS and Vimpelcom. (FC-Novosti Information Agency, Anon 2008)

According to Rahr (Stack, 2008), Medvedev personifies Russia's try to align itself with Europe. The West has "another chance to take up the idea of an intensive strategic partnership" (Rahr as cited by Stack, 2008). 42 year old scholar in corporate law Medvedev "is in terms of political identity "a European" in his own words" "(Medvedev as cited by Stack, 2008). He would have been accepted by Europe more than the other candidate Ivanov (a close friend and partner of Russian president Vladimir Putin), whose KGB background would be held against him (Stack, 2008).

However there still are limitations to how much freedom foreign investors have in some big Russian companies. In March 2008 State Duma of Russian federation passed the bill on how non-residents can acquire stakes of Russian strategic firms in the second reading. If the bill will be passed in the third reading this bill will become the law making leading Russian mobile operators (MTS, Vimpelcom, Megafon) strategic firms according to Russian Antimonopoly Service. These companies, according to this law, will be considered dominant and thus strategic if they have 25% or more share of the market. Further according to this law foreign investors will not be

able to acquire more than 50% stake in the operator and not more than 25%, if they are control by a foreign state, without government's permission to do so. (Temofey Dzado & Nadejda Ivanizkaja, 2008)

## 4 PLAYERS OF THE MARKET

### 4.1 Russian mobile operators

In this chapter eleven biggest cellular operators in terms of subscribers have been presented. Companies are presented in the size order starting from the biggest operator in terms of subscribers. Subscriber figures for the regional operators include both active and passive users. It can be seen from the figure 2, that there are three dominant operators that account for more than four fifths of the SIM cards in the market.

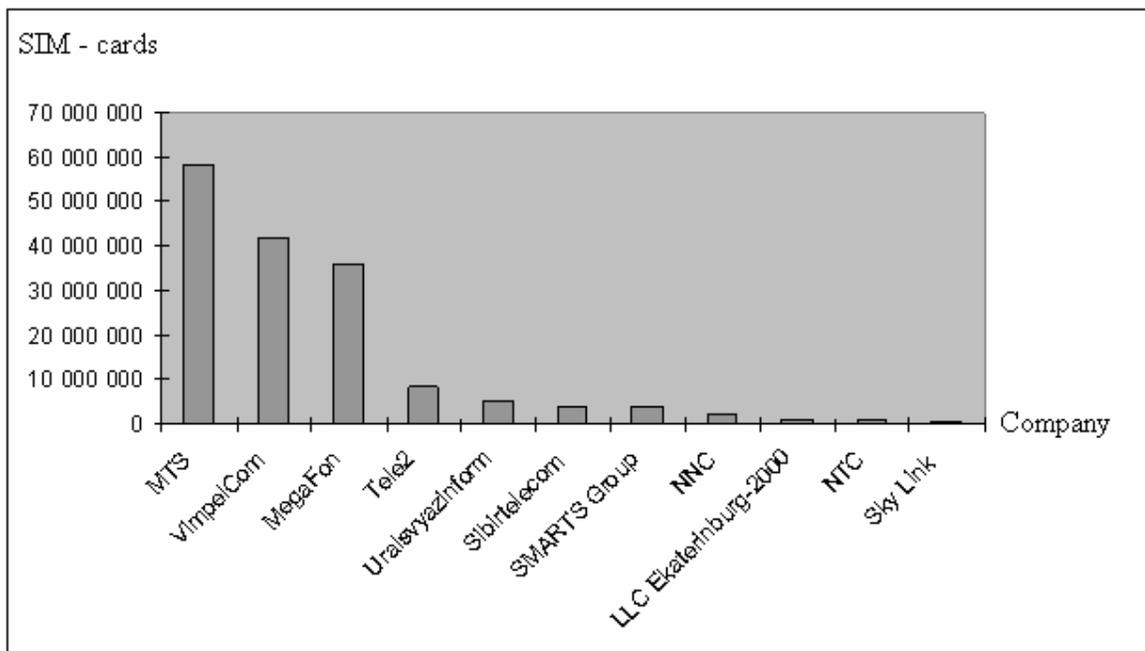


Figure 2. Market breakdown by SIM cards 31<sup>st</sup> January 2008 (Source: ACM-Consulting 2008)

#### 4.1.1 Mobile TeleSystems OJSC

Mobile TeleSystems OJSC, also known as MTS, is the biggest mobile phone operator in Russia. In Russia, it serves over 58 million customers which is approximately one third of the Russian subscriber base in terms of SIM cards. This customer base figure is somewhat misleading, as MTS has included both active and passive users, where as rivals Vimpelcom and MegaFon use active subscribers in their publication figures (Cnews 2008o). MTS completed its initial public offering in 2000 and was listed in New York Stock Exchange under symbol MBT. (ACM-Consulting 2008) (MTS 2007) It also provides GSM services in Armenia, Belarus, Turkmenistan, Ukraine and Uzbekistan. Total turnover of MTS in 2006 was 6.4 billion US dollars. (MTS 2007)

#### 4.1.2 VimpelCom Group

VimpelCom is the second biggest mobile operator in Russia. Turnover of the VimpelCom group which operates in Russia, Kazakhstan, Ukraine, Uzbekistan, Tajikistan, Georgia and Armenia was in 2006 4.9 billion US dollars. (VimpelCom 2007) VimpelCom has subscriber base of 42 million active customers in Russia. (ACM-Consulting 2008) The Group is also planning to expand into Vietnam (Cnews 2008l). VimpelCom is the world leader in terms of roaming (Cnews 2008m).

#### 4.1.3 MegaFon

MegaFon is the third member of the Big Three operators that rule Russian mobile operator market. It had total revenues of 3.8 billion US dollars in 2006 and subscriber base in January 2008 was 36 million active users. MegaFon operates also in Tajikistan. (MegaFon 2006) (ACM-Consulting 2008) The company might launch its initial public offering in 2009 (PR Newswire 2008).

#### 4.1.4 Tele2

Tele2 is a Swedish mobile phone operator that has operated in Russian market since 2001. It was also a contender for 3G license. Tele2 operates in 15 countries in Europe and had an over all turnover of 6.0 billion US dollars in year 2006. In Russia, it has over 8 million subscribers. (Tele2 2008) Operations of the company have concentrated in the Saint Petersburg region, where it has almost 12 % market share. (ACM-Consulting 2008)

#### 4.1.5 Uralsvyazinform

Is the largest provider of telecommunications services in Ural region. The company was established as a merger of six regional operators. Shares of Uralsvyazinform are sold in Russian, German and American Stock exchange. (Uralsvyazinform 2008a) In January 2008, Uralsvyazinform had approximately five million subscribers (ACM-Consulting 2008). In 2006, turnover of the company was approximately 920 million US dollars. (Uralsvyazinform annual report 2006)

#### 4.1.6 Sibirtelecom

In the privatization process in the early 90s, company called Electrosvyaz of the Novosibirsk Region (ENCO) was established, which in 2001 was renamed Sibirtelecom. Sibirtelecom is an open joint-stock company and its main services are fixed-line telecommunications. (Sibirtelecom 2008) The company has over four million subscribers (ACM-Consulting 2008). The revenue for 2006 was approximately 960 million US dollars. (Sibirtelecom annual report 2006) Under Sibirtelecom there are regional operators such as Altaysvyaz, Baikalinvestcom, Yeniseytelecom. (Cnews 2007y)

#### 4.1.7 SMARTS Group

SMARTS group offers mobile telecommunication services in sixteen regions of Russia. This open joint stock company is from the Samara region. (SMARTS Group 2008) They have approximately four million subscribers (ACM-Consulting 2008). The Company retrieved from

Muscovite market in the beginning of 2008, as the operations in Moscow region were not profitable (Cnews 2008n).

#### 4.1.8 N.Novgorod Cellular Communications

Nizhny Novgorod Cellular Communications, also known as NCC, was the first mobile phone operator in Russia to offer GSM services in 1995. It is a closed joint-stock company based in the Nizhny Novgorod region. (NCC 2008) Customer base is estimated to be around two million subscribers. (ACM-Consulting 2008)

#### 4.1.9 LLC Ekaterinburg-2000

LLC Ekaterinburg-2000 is a limited company offering mobile phone services in Ekaterinburg and Sverdlovsk region. (LLC Ekaterinburg-2000) It uses brand name MOTIV. They have over one million subscribers. (ACM-Consulting 2008)

#### 4.1.10 New Telephone Company

New Telephone Company (NTC) is an open joint stock company that offers mobile phone services in Primorskiy region (NTC 2008). The company has little over million subscribers (ACM-Consulting 2008).

#### 4.1.11 Sky Link

Sky Link is a mobile operator working with IMT-MC-450 standard. Company has also plans of opening GSM services in most of Russian regions by 2011 (Cnews 2007x). The company was founded in 2003. It has approximately 440 000 subscribers. Sky Link has specialized on high quality services. In the latest auction it acquired more licences than any other company in Russia. (Sky Link 2008) It has the potential of becoming the fourth national mobile operator. Before that to happen, the ownership structure is likely to change so, that Sistema will step down and new

foreign investors will be attracted to cover the expenses of building GSM networks. (Cnews 2007k)

Sky Link has very ambitious plans of increasing its share of cellular service market from 2% to 10% and increasing subscriber base to 5-6 million by 2011. By the end of 2008 the company also intends to penetrate into 69 regions of Russia. Sky Link is planning to achieve these goals by taking the lead in cellular service, such as mobile internet connection. (Cnews 2007v)

## **4.2 Major owners in Russian mobile operator market**

### 4.2.1 Sistema

Sistema is a conglomerate with annual turn over of 10.9 billion US dollars. It maintains a portfolio of businesses. Main industries are telecommunications, high technology and real estate. The corporation owns a share of MTS and Sky Link. (Sistema 2007c) In MTS, Sistema is a majority owner with a 53,1 % stake (Sistema 2007a). Sky Link was established by Sistema and RTDC. Currently Sistema holds 42 % beneficial ownership interest and 50 % voting right. (Sistema 2007b) In addition to that, In Russian telecommunications sector Sistema is an owner of fixed-line telecom companies such as Comstar, MGTS and MTT (Sistema 2007c). Sistema also owns Sitronics, which offers for example network solutions with Ericsson and Alcatel, and Sistema Mass Media which offers DVB-H technologies for mobile TV formats (Sistema 2007d & Sistema 2007e). Sistema is also negotiating about selling Apple's mobile phone products (Cnews 2007a)

### 4.2.2 Altimo

Altimo is a private equity group which is used by Alfa Group for investments in telecommunications assets mainly in Russia and CIS. Altimo is minority owner of VimpelCom, MegaFon and fixed-line operator Golden Telecom. It also owns a share in Ukrainian operator Kyivstar and Turkcell in Turkey. (Alfa Group 2007)

Altimo has been fighting with the Scandinavian operators for the shares of Kyivstar and Turkcell. In Kyivstar Altimo is a minority owner with 43.5 % stake. Rest of the company is owned by Norwegian operator Telenor. The battle over Kyivstar seems to have stabilized as Telenor stopped the consolidating process of the company. (Cnews 2007b) After several years of trial between Altimo and TeliaSonera, International Arbitration in Vienna adjudicated that Cukurova group (seller of Turkcell shares to Alfa Group) violated rights of TeliaSonera (47 % share in Cukurova) when it sold shares to Alfa Group. The Cukurova group was ordered to do everything possible to return the sold shares. However, Cukurova have filed a counter claim as the stake that TeliaSonera has in Cukurova group initially belonged to Finnish operator Sonera, which later on emerged with Telia. (Cnews 2007c) Alfa Group has also been fighting over 25.1 % stake of MegaFon, with IPOC. In 2004, LV Finance (owner of 25,1 % stake in MegaFon) was bought by Alfa Bank (investment arm of Alfa Group) and that is where the dispute started as IPOC claimed it had rights to 19,4 % stake in MegaFon that was owned by LV Finance. In December 2007, the parties finally were able settle after many years of trials and corruption investigations. According to Altimo, neither of the sides claim 25,1 % stake, therefore both sides are able to sell their stocks in MegaFon and for example Altimo has persuaded TeliaSonera to exchange stock of MegaFon to shares of TeliaSonera. It is unlikely to be accepted by Russian authorities for Altimo to become controlling group of MegaFon because of the 44 % voting shares it has in Vimpelcom (Buckley 2007). Also Alisher Usmanov, owner of Gazmetal, who bought 15 % stake in Telecominvest that has a stake 31,3 % stake in MegaFon is one of the purchaser candidates. (Cnews 2007d & MegaFon 2008b)

#### 4.2.3 Foreign owners

Excluding Tele2, the most active foreign owners in Russian mobile telecommunications market are Scandinavian Telenor and TeliaSonera. TeliaSonera owns indirectly 44% stake in MegaFon and Telenor a 29.9% stake in VimpelCom (Ibison, 2007a). It has been suggested that Altimo might offer its stake in MegaFon for a minor stake in TeliaSonera, and by so making TeliaSonera the majority owner of MegaFon. Altimo might also offer its 13.2 % share in Turkcell to TeliaSonera, which would give TeliaSonera the control of Turkcell. On the other hand Altimo might choose to sell its stake in VimpelCom because of the dispute with VimpelComs other owner Telenor. (Buckley 2007) Telenor and Altimo had disagreement over whether VimpelCom should

enter Ukrainian market, as in Ukraine there is already operator owned by Telenor and Altimo called Kyivstar. VimpelCom entered the market in spite of Telenor's objections. There has also been power struggle in Kyivstar where Telenor is a majority owner and Altimo minority. (Ibison 2007a) In addition to that, Telenor has also accused directors of Alfa Group, including Mikhail Fridman, the biggest owner of Alfa Group, the conglomerate owning Altimo, of insider dealings related to VimpelCom (Ibison & Palmer 2007) In contrary, Alfa Group has accused Telenor of planning to bribe Ukrainian judges and journalists over the business dispute in Kyivstar (Ibison 2007b).

Also German operator Deutsche Telekom was actively participating in Russian market until 2003, when the new chief executive officer of Deutsche Telekom decided to retreat from Russian market. The company originally held 40 % stake in MTS but it gradually decreased the ownership and in 2005 Deutsche Telekom sold its remaining stake. (Simensen 2005) In 2006 Sistema offered to exchange its telecommunications division for 10 to 20 % stake in Deutsche Telekom. This deal was however declined. (Hillebrand, Klusman & Ehrlich 2006)

### **4.3 Mobile Retail Chains**

Mobile Retail Chains (MRC) are retail chains that sell contracts offered by operators. MRCs are independent companies and they often offer SIM cards of different operators. Big Three have considered expanding their business vertically so that these kind of mobile retail chains would not be needed (Cnews 2007j). It is however not that easy as the mobile retail chains also offer other products such as mobile and digital devices and some of the retailers have really steady position in the market. In Russian market there are handful of MRCs, including Euroset, Svyaznoy, Dixis and Betalink.

Euroset is the biggest mobile retailer in Russia with annual turn over of 4.6 billion US dollars in 2006 (Euroset 2007). It is also operating as mobile virtual network operator (MVNO) in SMARTS network since March 2007. Important notion in the MVNO project in SMARTS network is that the project is practically not profitable. The company believes to get momentum when 3G networks have been created. However, at least in GSM networks Euroset might not get

served by the Big Three, as according to Big Three they do not have excess capacity. (Cnews 2007s)

## **5 RUSSIAN MOBILE TELECOMMUNICATIONS INDUSTRY**

### **5.1 Theory of industry analysis**

Typical steps in an industry analysis include: defining the relevant industry, identify the five competitive forces, assessing the drivers for each competitive force to analyze why they are either strong or weak and finally determine the industry structure and test the consistency of the analysis. (Porter 2008, 92)

The five forces of competition are threat of substitute products or services, bargaining power of suppliers, bargaining power of buyers, threat of new entrants and rivalry among existing firms. The collective strength of these five competitive forces determines the overall profit potential in the industry - the harder the competition, the lower the profits. After the analysis it is important to answer to these questions for consistency of the analysis:

- Why is the level of profitability what it is?
- Which are the controlling forces for profitability?
- Is the industry analysis consistent with actual long-run profitability?
- Are more-profitable players better positioned in relation to the five forces?

(Porter 2008, 98)

Also analyzing the likely future change for each competitive force is important. Industry structure will also gradually shift over time. (Porter 1998, 7)

#### **5.1.1 Threat of entry**

New entrants bring new capacity and often new resources, thus reducing profits. Acquisition into an industry from another market with intent to build market position should also be viewed as entry even though no new entity is being created. Threat of entry depends on the barriers to enter

the market and reaction from existing competitors. If barriers are high and strong retaliation is expected, threat of entry is low. (Porter 1998, 7)

There are six main sources of barriers to entry: Economies of scale, product differentiation, capital requirements, switching costs, access to distribution channels and cost disadvantages independent of scale. Economies of scale refer to declining of unit costs of a product, as the absolute volume for certain time increases. Companies thinking about entry have to either invest a lot to get to the same volume, which also means high risk, or accept the cost disadvantage. Economies of scale can happen in almost all functions of business, including distribution, purchasing, manufacturing, research and development, marketing, service network and sales force utilization. Also economies of scale can be achieved if a multibusiness company can use the product, by-product or intangible asset in other industries. Economies of vertical integration can also raise the risk of entry to a market substantially, because newcomer might have to pay higher price for the inputs or might even not get them. Product differentiation means that established companies have brand identification or customer loyalties, which arise from past advertising, customer service, product differences or being first into the industry. Differentiation forces new entrants to invest heavily to overcome existing customer loyalties. Capital requirement means the need to invest large and possibly risky financial resources in order to compete. For example investing to advertising or R&D. Switching costs is the barrier, which happens when changing from one supplier's product to another's. It may include for example retraining costs, new equipment, cost and time of testing or qualifying a new source, need for technical assistance, product redesigning and even cost of hurting a relationship. Access to distribution channels is a barrier to entry that takes place when the distribution channels are already in use by the existing competitors and the newcomer must persuade the distributor to take their product as well, by reducing prices or increasing co-advertising. Cost disadvantage independent of scale means cost advantage that happens for example from patent, favourable access to raw materials, favourable locations, government subsidies and learning curve. Government policy means that government can restrict competition for example by licensing frequencies. (Porter 1998, 7-13)

Expected retaliation is also significant threat to entry. Retaliation can be expected if: there is a history of strong retaliation to entrants, established firms have substantial resources to retaliate (excess cash, unused borrowing capacity, excess productive capacity or leverage with distribu-

tion channels or customers), and established firms are highly committed to the industry or slow industry growth. (Porter 1998, 14)

### 5.1.2 Rivalry among existing competitors

Instruments of competition for companies include using tactics like advertising, product introductions, price competition, customer service and warranties. Price competition is likely to leave the whole industry worse off, then again advertising can help the industry as a whole. If growth within an industry is slow, the competition becomes market share game and therefore is more volatile. High fixed costs lead easily to escalating price cuttings, because of the pressure of filling the capacity when excess capacity is present. Lack of differentiation or switching costs put the companies under price or service competition, because of the easiness to change supplier. (Porter 1998, 17-19)

Foreign competitors often add diversity to industries because of their often differing circumstances and goals. Also small owner-operators might not have as high profitability target as larger stock corporations. (Porter 1998, 19)

### 5.1.3 Substitute products

Substitute is a product that has the same function as the product of the industry. Substitutes produced by competing industry limit the potential profits of an industry. Most dangerous substitutes are the ones that are subject to trends improving their price-performance compared to industry's product and the ones produced by industries with high profits. (Porter 1998, 23)

### 5.1.4 Bargaining power of buyers

Byers affect the industry's profitability by forcing down prices, bargaining for higher quality or more services and playing competitors against each other. Buyer has strong bargaining power if: it is concentrated or purchases large volumes relative to seller, the products it purchases from the industry represent remarkable fraction of the buyer's costs or purchases, the product it purchases

is standard or undifferentiated, it doesn't face significant switching costs, it earns low profits, buyers pose threat of backward integration, purchased product is unimportant for the quality of buyer's product, buyer has full information about demand, market price and supplier costs. Consumers are usually more price sensitive than industrial or commercial buyers. (Porter 1998, 25-26)

#### 5.1.5 Bargaining power of suppliers

Suppliers exert their bargaining power by threatening to raise prices or reduce quality of product. Factors that lead to strong supplier bargaining power are similar to those of buyers. A supplier is strong if: if suppliers are more concentrated than industry, it doesn't compete with substitutes, industry is not important customer of the supplier, suppliers' product is an essential input to the buyer's business, suppliers' products are differentiated or it has switching costs (can not play supplier against another), supplier group can easily integrate forward. Also labor should be counted as supplier. Government is often affecting industry competition as supplier or buyer. (Porter 1998, 27-28)

#### 5.1.6 Common mistakes done in industry analysis

Assume that fast-growing industry is always attracting. Fast growth can put suppliers in a powerful position and with low entry barriers the market will draw lots of new entrants. Advanced technology or innovations are not by themselves enough to make an industry attractive. For example low-technology industries with price sensitive buyers are often more profitable than internet technologies. Government is neither good nor bad for the industry. It is better to analyse government policies effect to 5 competitive forces. Complements, products that are used with the sold product like shoelaces with shoes, have to also be analyzed by the effect to 5 competitive forces. (Porter 2008, 86-87) Most important forces ought to be analyzed more carefully than others (Porter 2008, 98).

## 5.2 Rivalry in the mobile operator industry

### 5.2.1 Acquisitions

Russian mobile telecommunications industry has consolidated during the last few years. Operators have expanded to new regions via acquisitions, which has often been the only way as they need license for each region separately. In the below acquisitions done in 2007 and beginning of 2008 are covered.

In August 2007, Tele2 sold its daughter company Severnaya Korona Corporation for 232 million US dollars to VimpelCom. This purchase was concluded because VimpelCom couldn't expand into the Irkutsk region due to lack of frequencies (and therefore licenses) and had the only option of buying a local operator. In connection to this deal Beeline agreed to offer Tele2 its network for national roaming services for 10 years. This roaming deal makes Tele2 basically the fourth national mobile operator. Before the deal Tele2 subscribers were only able to use call back roaming and couldn't send SMSs to uncovered regions. The roaming tariffs have also decreased from 14 rubles a minute (in call back roaming) to 11 rubles. Outgoing SMS costs 4 rubles. GPRS and MMS are not currently in use, but will be offered in the near future. The roaming tariffs that the big three offer are in between 5 and 9 rubles per minute and are therefore prominently cheaper than the 11 rubles offered by Tele2. (Cnews 2008c)

In October 2007, Tele2 acquired Telecom Eurasia from SMARTS. Telecom Eurasia is a small operator from Krasnodar. Via this purchase Tele2 expanded its market area to 17 regions. (Cnews 2008d)

In December 2007, MTS purchased Bashcell, mobile operator from the Republic of Bashkir. In contrary to normal acquisition in Russian mobile telecommunications industry, this purchase was not done to expand to new region, but to expand subscriber base. Another motive for the acquisition was to receive the license and to prevent new competitors from entering the market. Transaction charge was 38 million US dollars including debt of 32 million USD. In 2006 the revenue of Bashcell was 11 million USD. (Cnews 2007d)

In the end of 2007, the shareholders of SMARTS operator from Volga region tried to sell the company's shares to VimpelCom. VimpelCom had already agreed upon the offer, before VolgaTelecom, shareholder of SMARTS, used a priority clause to buy the shares under similar conditions. Other shareholders of SMARTS did not like this turn and in February 2008 they changed SMARTS from closed joint stock company to open joint stock company to avoid Volgatelecom's acquisition. After that Volgatelecom decided to turn to court to get their acquisition approved by SMARTS shareholders. Court has not yet ruled in either way, however the possible purchase of SMARTS by Volgatelecom is thought to be temporary solution as Volgatelecom is part of Svyazinvest, which has a plan to strip off mobile assets. (Cnews 2008b)

In February 2008, Summa Telecom, a telecommunications company that has specialized on integration services for oil and gas industries, surpassed VimpelCom seeking to expand into the Far East. It acquired operator Esotel-Rustelekom, which owns the licence for Yakutia. Some analysts believe the purchase was made to increase value of Summa's value before further sale. (Cnews 2008f)

In February 2008, MTS acquired the remaining 9 % of Mobile Communications Systems (MCS) to expand its share in the company to 100%. MCS provides GSM service in the Omsk region. It is one of the leading operators in the region. The purchase was in line with MTS's strategy of consolidating minority stakes in its daughter companies. Mobile penetration of Yakutia is around 40 %. MTS and MegaFon have licenses in the region. (Cnews 2008e)

There are still plenty of regional operators in Russian market, which might be purchased by the Big Three or other regional operators striving for national operator's status. Consolidating process is on its way and in the future regional operators will become fewer. Regional operators are often consolidated under larger regional operator like in the case of Sibirtelecom. Regional operators also have an association called "Association 800" to represent them. Nonetheless, it has subsidiaries of MTS and VimpelCom, as its member (Association 800 2008).

### 5.2.2 Advertising

Russian mobile operators have tried to distinguish themselves from others via different kind of marketing and branding campaigns. Most visible campaigns have been done by VimpelCom and Tele2. VimpelCom's trademark Beeline has been awarded to be the most valuable Russian brand in 2005 and 2007 (VimpelCom 2008b). Beeline has also established strategic partnership with WWF Russia (Cnews 2007e). Swedish operator Tele2 has become renowned for its extraordinary marketing campaigns. In October 2007 they launched a campaign in Arkhangelsk region using vodka. This campaign has faced lots of criticism as alcohol products have more strict laws on advertising than mobile operators (Cnews 2007f). Tele2 has also advertising campaign called "Mafia" in Russia. It has been so successful that the campaign has been decided to expand to European countries where Tele2 operates such as Croatia. (Cnews 2007g)

There have also been some rumours about Sky Link's rebranding. Rumours say the rebranding has been initiated because company's actions do not satisfy the shareholders. Highly successful rebranding campaign by Beeline supports the rebranding idea of Sky Link. (Cnews 2007h)

### 5.2.3 Services

Russian mobile operator's have roughly the same services to offer. The main service being mobile phone calls. Other services, so called value added services (VASs) can be used to achieve competitive edge over competitors. So far these services have not been used extensively in Russia. Only company that has given very high priority for value added services is Sky Link. Nonetheless, mobile content market has been growing rapidly and is expected to reach 1 billion USD in 2010 (Cnews 2007i). In future the scenery might change a great deal if 3G network becomes prominent, as 3G licenses have been only granted to the Big Three. The successful trade of advanced complimentary products, such as mobile phones priced over 300 US dollars, helps in introduction of 3G services (Cnews 2007z). Recent service introductions include mobile banking services, paying electricity bills via SMS and storm alerts via SMS. Also mobile TV platforms are being developed and the market will determine which technology will become dominant. Currently mobile TV services are offered by MegaFon, MTS and Sky Link (Cnews 2008g).

There have also been rumors about the Big Three expanding in mobile phone retail market. In 2007 the operators occupied less than 4 % of handset sale in Russia compared to 20 % in Europe on average. The analysts also predicted it to be good time for operators to increase their influence in this market. (Cnews 2007j) VimpelCom has also planned to launch voluntary insurance of subscribers' mobile phones against damage and theft. Competitors do not plan to introduce such service and say it is only a PR campaign. (Cnews 2008h)

MTS and Microsoft announced in February 2008 plans to develop mobile services together. This kind of partnership might give technological advantage to MTS in 3G services. (Cnews 2008i) VimpelCom has also announced partnership with IXI Mobile to bring mobile data applications such as push email, attachment support and ICQ support to their service portfolio. (Wireless news 2007)

The only service where one of the Big Three really has lost ground is ring back tones (RBT). This service enables customers to play various ringtones to the calling party instead of the ordinary ring back tone. Turn over of this service is estimated to be around 10 million USD in a month. RBT is available in MTS, MegaFon and Sky Link networks. VimpelCom intends to launch this service in the second quarter of 2008 across Russia. (Cnews 2008j)

#### 5.2.4 Licensing

In every country mobile phone operator needs a licence. Therefore entirely free competition does not happen and the competition usually tends to be oligopolistic. To increase competition it is important that government gives several licences. For GSM network, which is the dominant network in Russia, regional licences are given instead of national ones. Therefore acquiring licenses has been even more important for the companies. Auctioned 3G licenses are national licenses.

Last auction for GSM licences for Russian market finished 15<sup>th</sup> of November 2007. Winners of the auction were Sky Link with 49 and Tele2 with 18 licences. Peculiarity with Tele2 is that it doesn't have license in Moscow region or city. Outcome of the auction shows that Tele2 and Sky Link plan to become national mobile operators. (Cnews 2007k) However, before becoming federal operators they have to invest a lot to build new networks. Building the networks is not the

only challenge the companies face. Summa Telecom also attended the auction, but it only received few licenses. Therefore the company decided to try to cancel the results through court. First verdict was given in March 2008 against Summa Telecom, but the company says it has not given up yet. These trials slow down the development of the new networks by Sky Link and Tele2. (Cnews 2008k) In April 2007, Summa Telecom won licenses to eleven regions, having no experience in providing cellular communications services. It has however valuable experience in the field of ITC. (Cnews 2007l)

Summa Telecom also participated in the 3G auction, but was rejected because the company did not have three years experience in the field (Cnews 2007m). The winners of 3G auction (MTS, VimpelCom and MegaFon) are unlikely to invest in new networks in the near future on national basis, as they have just finished upgrading 2G networks and the market demand does not seem to support building 3G networks beside existing 2G networks. Therefore, only so called Greenfield operators, that do not have existing 2G network, seem to be the only real contenders to build national 3G networks in the near future. Greenfield operators did not win any licences, but for example Summa Telecom would fit the profile. (Sinchukov 2007) Allocation of new licences for 3G will be decided when the frequency band is cleared (Cnews 2007n).

#### 5.2.5 Price competition

Average Revenue Per User (ARPU) in Russia is around 10 US dollars. This is rather low figure compared to the European counterparts that have approximately ARPU of 50 US dollars. This gives misleading idea, that the price competition in Russia would be more aggressive than in Western Europe. Russian Big Three have EBITDA margins around 50 %, where as the Western operators are likely to achieve EBITDA margin just above 30%. (Wieland 2007) In the first half of 2007, the Big Three dominated the Russian market by covering 88 % of the income of mobile operators. MTS had 31%, VimpelCom 30% and MegaFon 27% of the mobile operators' income. So it can be interpreted that the price setting is done by the Big Three. In the first half of 2007 cellular operators' income increased by 2.9 billion US dollars, that is the highest income growth index since the first half of 2004, which means that the profits are going to be high for the financial year of 2007 as well. (Cnews 2007o)

From the profits that the Big Three are receiving, it is easy to draw conclusion that Russian cellular operator market does not have fierce competition. Most important factor decreasing price competition is the restriction of overall competition caused by licensing. The price competition might however increase in the future. As experienced in the West, the market usually becomes more competitive, when MNP (Mobile number portability) is introduced. MNP enables changing mobile phone contracts without losing mobile phone number. Russian Minister of Communications, Mr. Leonid Reiman, has admitted the possibility of implementing such a technology, however legislative reforms are yet to be done. (Cnews 2007p)

### **5.3 Entry barriers to mobile telecommunications market in Russia**

Mobile operator market differs great deal from many other markets when it comes to entry into market. Strongest factor influencing possible entry is government policy on licensing. For a company to enter mobile operator market it needs to have a licence for a frequency used in the mobile services. Therefore a decisive factor that defines what kind of competition is faced in the market is political. Also service differentiations are rather difficult to achieve and companies must have good investment capabilities to build networks, which also complicates entering into the market. On the other hand, switching costs and access to distribution channels do not hamper entering the market. Neither are the economies of scale, such extensive that they would have a big affect when making entry decision. There has also not been extensive retaliation against new comers from the Big Three, as it is easily interpreted as unfair competition by the Russian Federal Antimonopoly Service (FAS).

For companies that have never operated within cellular communications it is hard to enter the market, as they are very unlikely to receive license. For example for the 3G, tenders had to have three years experience in the field of mobile telecommunications (Cnews 2007m). Entries into the industry are likely to come within the ITC industry, like in the case of Summa Telekom acquiring the GSM licenses.

Hot topic in Russian cellular operator market is at the moment Mobile Virtual Network Operators (MVNOs). It means a company that operates in real operators' network as an individual operator. This way companies can enter the market without needing a license. They are however

highly dependent on the real operators and therefore do not enhance the competition to large extent.

Company called Effortel Mobile, which is headed by former MTS top-manager, has announced its plans to launch several MVNOs in GSM networks. These MVNOs will operate under brands of large non-telecommunications companies such as retailers and banks. First project will be launched in 2008. According to Effortel Mobile, one launch will cost about 2-3 million euro. The services are planned to launch in networks of the Big Three. Negotiations are however far from finished. The competitive edge of MVNOs is that they are more flexible and can adopt changes quicker than normal operators. They can identify user demand more quickly and can better differentiate services according to demand. (Cnews 2007q)

In November 2007, MVNO subscriber base was around 200 thousand and it is expected to double during the following year. Biggest MVNOs currently are Matris Mobile, Central Telegraph, Corbina, and Countrycom. ARPU for MVNOs is around four US dollars, which is roughly half of ARPU of the Big Three. (Cnews 2007r)

#### **5.4 Customers**

Consumers are the customers of cellular operators, which means that the customers are dispersed and do not buy in large volume. Therefore the customers do not have strong bargaining power, and the operators define the service packets what to offer and at what price. The services provided by the operators are rather trivial, which makes the customers price-sensitive.

According to Cnews, around 70% of Russian people use actively mobile phones. In overall SIM-card count the market has already saturated. (Cnews 2008a) This means that in the future new customers are more often obtained from the competitors, and are therefore more demanding as they already have experience from a mobile operator. The possible introduction of MNP service would increase the bargaining power of customers.

## **5.5 Network suppliers**

Network suppliers have little bargaining power because: they are not more concentrated than operators, building networks is their main business, suppliers can be played against each other because the technology has been standardized and mobile operators purchase usually in huge volume.

Mobile operators often use several network suppliers. For example MegaFon uses Nokia equipment for European part of Russia, Siemens equipment for Ural and Volga Region and Huawei Technologies in Siberia and Far East. MegaFon's plan to invest one billion US dollars for 3G networks describes the size of the purchases. In the tender held by MegaFon, Alcatel, Ericsson, NEC Corporation, Nokia-Siemens and Huawei Technologies were invited. (Cnews 2007t) Winners of the tender were Huawei and Nokia-Siemens (Cnews 2007u).

## **5.6 3G vs. Wi-Fi**

As 3G technology is growing, some concerns started to rise as mobile internet services provided by 3G technology may be a substitute to Wi-Fi technology and vice versa. Wi-Fi provides great service in its hotspots but broadband mobile internet over 3G provides a more stable continuous connection between connected users in a conference over wider urban areas. Also Wi-Fi is generally free for its users compared to pricy broadband internet provided by mobile telecommunications providers. The situation becomes more competitive when Wi-Fi technology will grow from covering "520 square networked miles in 2004 to 30,000 square miles" (Stan Schatt from ABI research as quoted by Jim Barthold, 2008).

## **5.7 Competitive situation of Russian mobile telecommunications industry**

Today Russian mobile telecommunications market is highly profitable. This means that the companies within the industry do not face hard competition. The market is profitable because of the fast growth of the market and disposable income levels in Russia. The profitability has attracted

new companies towards the market, but their entry has been limited because of the need for license to operate. In addition to that, the modest bargaining power of customers and suppliers has helped the industry to achieve high returns.

### **5.8 Future prospects for the industry**

In the future, entry barriers that rise from limited amount of licenses are likely to remain the most important force affecting the competition. Entering the mobile telecommunications market outside of ITC industry is not likely to happen, as Russian government has valued experience in telecommunications when granting the licenses. MVNOs might ease entry barriers and increase competition to some extent. Bargaining power of suppliers is not likely to change remarkably. However the bargaining power of customers might strengthen via introduction of MNP, reducing profitability of the industry.

In the long run the industry structure is changing to more oligopolistic through acquisitions. Acquisitions of the Big Three will be aimed more towards growing subscriber bases and reducing license holders instead of the past trend of acquiring license into new regions. Market share game will become volatile as the market growth is decreasing and new subscribers are more likely to be attained from the competitors than outside the market. In the consolidating process new national operators might emerge for example from Tele2 or Sky Link.

Russian government is planning to restrict foreign ownership within the industry. This might lead to ownership changes most notably in VimpelCom and MegaFon. Also the status of Tele2 is interesting as it is purely Swedish operator. Another factor that might affect negatively to the amount of foreign owners in Russian mobile telecommunications market is that the profits are not likely to maintain as high as they have been in the past few years and foreign operators might instead of Russia, expand to emerging markets such as Vietnam or central Asian countries.

## **6 3G IN RUSSIA**

After refinement of technologies early in the decade by major operators into GSM, EDGE and GPRS, major Russian mobile operators chose UMTS standard for progression from second gen-

eration GSM networks into 3G technologies following the evolution of technology in the Europe. UMTS technology was chosen, because GSM operators can cost efficiently “re-use significant parts of their investment in GSM, from core network elements to customer management and billing systems” (UMTS Forum, Anon 2005).

There were eleven companies which were competing in a tender for three 3G licenses in Russia in the beginning of 2007. The following were the bidders: the three largest operators in Russia (“the Big Three”) - MTS, VimpelCom and MegaFon; Network Telecommunications, which includes regional operator SMARTS; Tele2 subsidiary Chelyabinsk Cellular Communications; New Telephone; Astelcom; Avora-Telkom; Corbina Telecom unit Investelektrosvyaz; and Summa Telecom (GSM-3Gworldseries, Anon 2008). The “big three” won the tender in April 2007 thus gaining even a stronger hold on the market.

Western mobile telecommunications providers paid “inflated” amounts of money for the first licenses around 2005 and 3G was not very successful in those markets. Thus Russia sold its 3G licenses for a much lower price of \$100,000 each in comparison with billions of dollars in the West. Due to such low prices leading Russian mobile operators are required and are planning to invest significant amounts of money into building 3G networks. (Bush, 2007)

All three major operators are planning to invest billions of rubles into 3G technology. MTS plans to invest about 38 bln rubles (about \$1.55 bln or €1 bln) into 3G development by 2011 and additional 35 bln rubles (about \$1.43 bln or € 0.9 bln) on development and implementation of 3G telecommunication services by 2020 launching its first commercial 3G network in Krasnoyarsk and Norilsk. MTS expects 11 mln users of 3G services in Russia. Vimpelcom, planned to invest \$300-350 mln into 3G development in 2007-2008. MegaFon intends to invest about \$1 bln into 3G in the coming three years investing \$250 mln in 2008, \$100 mln being spent on developing the network in St. Petersburg. Vimpelcom and Megafon do not name the regions, in which modern 3G networks will be launched in 2008. (Cnews, Anon 2008p)

The demand for 3G services may be hard to find in Russia. As voice services over GSM technology dominate the market what appears to be a result of relatively low incomes in Russia. AR-PU of \$8.40 is relatively low compared to western markets. (Bush, 2007). According to Nokia Siemens Networks SMS usage is relatively low in Russia compared to other countries. Survey

carried out by Nokia Siemens Networks showed that only 6% of respondents would use more SMS services if prices were lowered (Wieland & Morris, 2007). Thus we can conclude that value added services (VAS) are not very popular in mobile telecommunications market in Russia and that additional VAS services using 3G technology would have hard time in Russia as well. Figure 3 shows that on average VAS are not bringing higher ARPUs than 14% for MTS.

	Q4 05	Q3 06	Q4 06	FY 05	FY 06
<b>ARPU</b>	<b>7.4</b>	<b>8.6</b>	<b>8.5</b>	<b>8.4</b>	<b>7.9</b>
Post-paid ARPU	26.3	31.9	30.8	24.9	28.4
Pre-paid ARPU	4.5	5.7	5.4	5.3	5.1
ARPU ex guest roaming	7.2	8.5	8.3	8.2	7.7
ARPU from VAS	0.9	1.0	1.1	1.0	1.0
VAS as % of ARPU	12%	12%	13%	12%	13%
<b>Minutes of Usage (MOU)</b>	<b>123</b>	<b>135</b>	<b>133</b>	<b>128</b>	<b>129</b>
Post-paid MOU	348	431	455	304	390
Pre-paid MOU	92	102	99	97	98
<b>SAC per gross new subscriber</b>	<b>19.8</b>	<b>22.3</b>	<b>29.1</b>	<b>18.8</b>	<b>23.2</b>
Dealer commission	10.8	10.6	13.3	11.3	10.4
Advertising & marketing	9.0	11.7	15.8	7.5	12.8
<b>Churn</b>	<b>5.2%</b>	<b>6.4%</b>	<b>5.1%</b>	<b>20.7%</b>	<b>23.3%</b>

Figure 3. MTS' operating indicators for Russia (US\$) (Source: MTS as cited by Morris, 2007)

Some analysts believe that 3G services like mobile internet would be seen by Russians as a necessity (J'Son & Partners' Astafieva cited by Bush 2007) and some consider GDP growth per capita and growth of average disposable incomes as another reason for good potential demand for 3G services (Troika Dialog's Andrei Bogdanov cited by Bush 2007). Also 3G networks provide mobile operators with increase in capacity for existing traffic, allowing the companies to be more cost-efficient. However investing big amounts of money just to increase capacity of traffic mainly for voice services would be unwise, because it would not justify the building costs of networks (Morris, 2007). Figure 4 shows 3G subscriber forecasts made by J'Son & Partners.

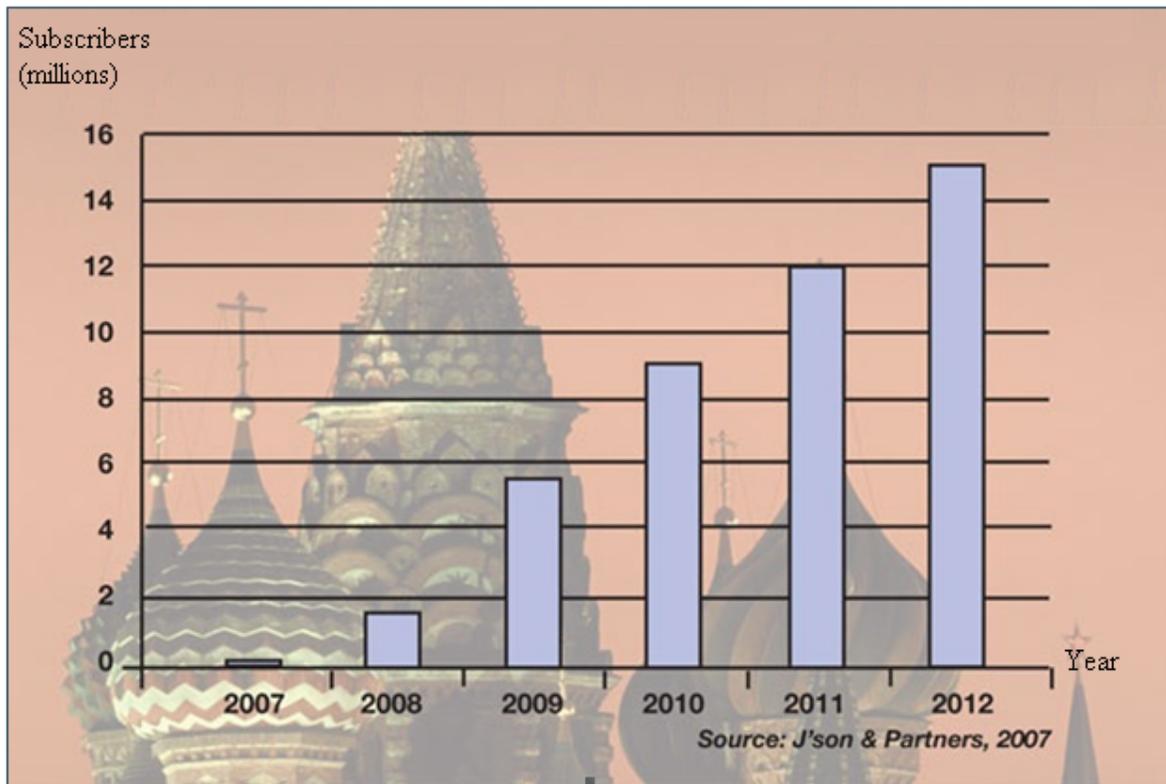


Figure 4. 3G subscriber forecasts for Russia (millions) (Source: J'son & Partners as cited by Morris, 2007)

There was good news however for the “big three” concerning 3G spectrum frequencies. Used by Russian Defense Ministry for missile defense network in Moscow and its region, 3G frequencies were unavailable for mobile operators. In March 2008 the Defense Ministry agreed to allocate 3G frequencies for 3G networks in Moscow. (Khodonova, 2008) However such cleaning of frequencies may result in additional costs for the operators amounting to about \$100 million. (Morris, 2007)

## 7 SUMMARY

2G services, in particular GSM services, have been highly profitable for the mobile operators. The profitability of the market originates from the restricted competition and growth of the market. Also weak power of customers and suppliers has helped the companies within the industry.

With first decade of twenty first century coming to an end, Russian mobile telecommunications market is entering new phases of its development. There are several important factors influencing the development: recent high penetration of the market relatively to previous years, coming of new technologies of 3<sup>rd</sup> and possibly even 4<sup>th</sup> generation high capacity technologies, and internationalization of Russia's major mobile operators.

Coming of 3G technology and possibly of its demanded services will influence the market. The influence comes from more efficient use of radio spectrum resources allowing companies to lower their variable costs by transmitting voice services through 3G technology; UMTS in particular. However substantial investments into 3G networks that the "big three" are making would be more justified if the demand for 3G services like video calls, mobile TV, and mobile internet would have at least normal demand relative to European mobile telecommunications operators' experience. So far relatively low disposable incomes were thought to be the reason for low demand for VAS in Russia so investing into 3G may be risky, although some analysts say that demand for such services will grow substantially.

Stabilization of Russian economy and growth of GDP from increased investments into Russia and rising oil prices create a more promising environment for businesses. Government policy however has been towards restricting foreign ownership in mobile telecommunication companies. New Russian president Medvedev is presumed to be pro-western, which would mean that the business environment is likely to become more open in the future. It is however important to remember that Putin was thought to be a puppet of Oligarchs before he acceded to presidential office, so what kind of president Medvedev will eventually be, will unravel when he is in charge. In the end companies may still remember that there are powerful political players behind the curtain who do not always pursue the good of the nation, as the problems of Vimpelcom suggest.

In the future, entry barrier that is caused by the licensing of the frequencies is presumably going to remain the most important factor disturbing the competition. Companies outside of ITC-industry are not likely to enter the market as Russian government has valued experience in telecommunications when granting the licenses. Easiest way for government to increase competition is to introduce MNP. Industry structure is most likely going to become more consolidated via acquisitions. Because of the market saturation, market shares of the companies are probably going to become volatile as new customers will be more likely obtained from competitors than at-

tracted outside the market. Fourth national operator might emerge from a company that has been granted licenses on national basis, such as Sky Link. Also Russian ownership behind the company and specializing on value-added services are reasons why government might support the idea of helping Sky Link to become national mobile operator.

## REFERENCES

ACM-Consulting. January 2008 [e-document]. 2007. [retrieved 13.3.2008]. From: <http://www.acm-consulting.com/cellulardata.php>

Alexandra Khodonova, 2008. Cell Companies Drilled a Hole in Missile Warning System. Kommersant, March 18.

Available at: [http://www.kommersant.com/p868208/3G\\_cellular\\_defense\\_ministry/](http://www.kommersant.com/p868208/3G_cellular_defense_ministry/) [accessed 21 March 2008]

Alfa Group. Group Activities < Telecommunications. [in Alfa Group www-pages] Updated 2007 [retrieved 18.3.2008]. From: <http://www.alfagroup.org/120/activities.aspx>

Association 800. Tselni Sojus. [In Association 800 www-pages] Updated 2007 [retrieved 19.3.2008]. From: <http://www.a3g.ru/>

Buckley, Neil. 2007. Russia dials up a peace dividend MOBILE & TELECOMS NEWS ANALYSIS With a bitter feud finally settled between two major investors, the market is ready for a huge shakeup. Financial Times, 1.8.2007. p23

Cnews 2007a. Sistema intends to sell Apple in Russia [e-document]. 5.11.2007 [retrieved 18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/10/05/269230>

Cnews 2007b. Telenor give up against Altimo [e-document]. 22.4.2007 [retrieved 18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/03/22/241564>

Cnews 2007c. Scandinavians inadvertently help Turkish plans of Alfa [e-document]. 10.3.2008 [retrieved 18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2008/03/10/291321>

Cnews 2007d. MTS acquires mobile operator from Bashneft [e-document]. 18.12.2007 [retrieved 18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/12/18/279984>

Cnews 2007e. VimpelCom to preserve nature [e-document]. 21.6.2007 [retrieved 18.3.2008].  
From: <http://eng.cnews.ru/news/line/indexEn.shtml?2007/05/21/251008>

Cnews 2007f. Tele2 attracts with vodka [e-document]. 28.10.2007 [retrieved 18.3.2008]. From:  
<http://eng.cnews.ru/news/top/indexEn.shtml?2007/09/28/268198>

Cnews 2007g. Russian telecom mafia expands abroad [e-document]. 21.12.2007 [retrieved  
18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/12/21/280733>

Cnews 2007h. Sky Link rebranding being prepared [e-document]. 29.9.2007 [retrieved  
18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/08/29/264025>

Cnews 2007i. Russian mobile content market to reach \$1bln by 2010 [e-document]. 4.7.2007  
[retrieved 18.3.2008]. From: <http://eng.cnews.ru/news/line/indexEn.shtml?2007/06/04/253304>

Cnews 2007j. Big Three is ready to break into cellular retail market [e-document]. 4.11.2007  
[retrieved 18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/10/04/268883>

Cnews 2007k. Two new federal GSM operators to emerge in Russia [e-document]. 16.12.2007  
[retrieved 18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/11/16/275260>

Cnews 2007l. GSM-tenders are revised under Big Two [e-document]. 17.9.2007 [retrieved  
18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/08/17/262949>

Cnews 2007m. Beeline is to be revenged with the 3G [e-document]. 31.8.2007 [retrieved  
18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/07/31/260801>

Cnews 2007n. Reiman: fourth 3G license available [e-document]. 24.6.2007 [retrieved  
18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/05/24/251710>

Cnews 2007o. Big Three shares income equally [e-document]. 19.10.2007 [retrieved 18.3.2008].  
From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/09/19/266845>

Cnews 2007p. Smolny occupied by MegaFon [e-document]. 13.8.2007 [retrieved 18.3.2008].  
From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/07/13/258793>

Cnews 2007q. MTS-based company to make banks and shops mobile operators [e-document].  
21.12.2007 [retrieved 18.3.2008]. From:  
<http://eng.cnews.ru/news/top/indexEn.shtml?2007/11/21/275913>

Cnews 2007r. Russia: virtual operators waiting for a boom [e-document]. 1.11.2007 [retrieved  
18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/10/01/268390>

Cnews 2007s. Euroset is to oust Big Three [e-document]. 11.10.2007 [retrieved 18.3.2008].  
From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/09/11/265637>

Cnews 2007t. Five companies participate in MegaFon tender for 3G equipment [e-document].  
5.10.2007 [retrieved 18.3.2008]. From:  
<http://eng.cnews.ru/news/line/indexEn.shtml?2007/10/05/269114>

Cnews 2007u. 3G: all operators settle with equipment suppliers [e-document]. 25.12.2007 [re-  
trieved 18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/12/25/281221>

Cnews 2007v. Sky Link takes the lead of Big Three [e-document]. 29.7.2007 [retrieved  
18.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2007/08/29/264250>

Cnews 2007x. Sky Link starts providing GSM-services in 2008 [e-document]. 25.11.2007 [re-  
trieved 18.3.2008]. From: <http://eng.cnews.ru/news/line/indexEn.shtml?2007/10/25/272075>

Cnews 2007y. Sky Link becomes fourth GSM-giant [e-document]. 26.11.2007 [retrieved  
18.3.2008]. From <http://eng.cnews.ru/news/top/indexEn.shtml?2007/10/26/272231>

Cnews 2007z. In 2007 Russians buy 3 mln. handsets [e-document]. 27.12.2007 [retrieved  
20.3.2008]. From: <http://eng.cnews.ru/news/line/indexEn.shtml?2007/12/27/281516>

Cnews 2008a. In Russia mobile communication subscriber base exceeds 160mln [e-document]. 16.1.2008 [retrieved 1.3.2008]. From:  
<http://eng.cnews.ru/news/line/indexEn.shtml?2008/01/16/283510>

Cnews 2008b. Volgatelecom acquires SMARTS through court [e-document]. 13.3.2008 [retrieved 1.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2008/03/13/291848>

Cnews 2008c. Beeline exchanges roaming for Far East [e-document]. 29.2.2008 [retrieved 1.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2008/02/29/290112>

Cnews 2008d. Russia does not save Tele2 from losses [e-document]. 13.2.2008 [retrieved 1.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2008/02/13/288042>

Cnews 2008e. MTS expands its share in Omsk daughter company to 100% [e-document]. 14.2.2008 [retrieved 1.3.2008]. From:  
<http://eng.cnews.ru/news/line/indexEn.shtml?2008/02/14/288163>

Cnews 2008f. Summa Telecom again in Beeline's way [e-document]. 5.2.2008 [retrieved 1.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2008/02/05/286595>

Cnews 2008g. Sistema launches new mobile TV mode [e-document]. 16.1.2008 [retrieved 1.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2008/01/16/283472>

Cnews 2008h. Beeline launches cell phone insurance [e-document]. 7.3.2008 [retrieved 20.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2008/03/07/291134>

Cnews 2008i. MTS and Microsoft engaged in joint development of mobile services [e-document]. 11.2.2008 [retrieved 20.3.2008]. From:  
<http://eng.cnews.ru/news/line/indexEn.shtml?2008/02/11/287648>

Cnews 2008j. Beeline: MTS spoils copyright holders [e-document]. 24.1.2008 [retrieved 20.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2008/01/24/284816>

Cnews 2008k. Sky Link hampers Summa Telecom [e-document]. 7.3.2008 [retrieved 20.3.2008].  
From: <http://eng.cnews.ru/news/top/indexEn.shtml?2008/03/07/291129>

Cnews 2008l. VimpelCom launches network in Vietnam by 2008 end [e-document]. 13.3.2008  
[retrieved 20.3.2008]. From: <http://eng.cnews.ru/news/line/indexEn.shtml?2008/03/13/291806>

Cnews 2008m. Beeline becomes world roaming champion [e-document]. 11.3.2008 [retrieved  
20.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2008/03/11/291541>

Cnews 2008n. SMARTS leaves InfoCom authorized capital [e-document]. 11.1.2008 [retrieved  
20.3.2008]. From: <http://eng.cnews.ru/news/line/indexEn.shtml?2008/01/11/282725>

Cnews 2008o. Russia: 8 mln decrease in mobile subscriber base [e-document]. 17.2.2008 [re-  
trieved 20.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2008/02/17/288361>

Cnews 2008p. 3G: first beyond the Urals and then in Moscow [e-document]. 18.2.2008 [re-  
trieved 12.3.2008]. From: <http://eng.cnews.ru/news/top/indexEn.shtml?2008/02/18/288589>

Hillebrand, T., Klusman, S. & Ehrlich, P. Russian conglomerate seeks big stake in Deutsche Te-  
lekom. Financial Times [e-document], 31.10.2006. [retrieved 18.3.2008]. From:  
<http://search.ft.com/ftArticle?queryText=Russian+conglomerate+seeks+big+stake+in&y=0&aje=false&x=0&id=061031010888&ct=0>

Dobrovolskaya, N. 2004. Development of Russian Mobile Communications. Lappeenranta: Lappeenranta University of Technology.

Economist, 2004. Meet the oleagarchs. [internet]. Economist  
Available at: [http://www.economist.com/business/displaystory.cfm?story\\_id=E1\\_NPSPQPV](http://www.economist.com/business/displaystory.cfm?story_id=E1_NPSPQPV)  
[accessed 21 March 2008]

Euroset. Investoram [In Euroset www-pages]. Updated 2007. [retrieved 13.3.2008]. From:  
[http://corp.euroset.ru/ru/about/investor/company\\_/](http://corp.euroset.ru/ru/about/investor/company_/)

Federal State Statistics Service, Russian Population table. [internet]

Available at: [http://www.gks.ru/free\\_doc/2007/b07\\_12/05-01.htm](http://www.gks.ru/free_doc/2007/b07_12/05-01.htm) [accessed 21 March 2008]

FC-Novosti Information Agency, 2008. Medvedev's Victory at Presidential Elections Cuts Political Risk. FC-Novosti Information Agency, [internet]. 5 March.

Available at: <http://www.fcinfo.ru/themes/basic/materials-rfcm-index.asp?folder=3309&foundID=171048> [accessed 21 March 2008]

Gerry Johnson & Kevan Scholes, 2002. Exploring Corporate Strategy. 6th edition. Financial Times Prentice Hall.

Guy Chazan & Gregory L. White, 2004. When Ties Go Sour in Russia. Wall Street Journal (Eastern edition), 10 Dec. p. A.12

Graham Stack, 2008. Russia Steps on the Gas. [internet]. Russia Profile.

<http://www.russiaprofile.org/page.php?pageid=International&articleid=a1204127830>

GSM-3Gworldseries, 2008. Russian/CIS telecommunications market overview. [internet] Informa Telecoms & Media

Available at: [http://www.gsm-3gworldseries.com/newt/1/gsm/events/russia/market\\_overview.html](http://www.gsm-3gworldseries.com/newt/1/gsm/events/russia/market_overview.html) [accessed 21 March 2008]

Ibison, David. 2007a. Telenor concedes defeat in Ukraine. Financial Times, 27.9.2007. p23

Ibison, David. 2007b. Altimio accuses Telenor of plan to bribe judges. Financial Times, 30.3.2007. p22

Ibison, D. & Palmer, M. 2007. Telenor levels insider dealing claims at Alfa. Financial Times, 8.6.2007. p29

Iain Morris, 2007. 3G invades Russia. [internet]. Telecommunications Online.

Available at: [http://www.telecommagazine.com/International/Article.asp?Id=AR\\_3149](http://www.telecommagazine.com/International/Article.asp?Id=AR_3149) [accessed 21 March 2008]

Jason Bush, 2007. 3G Could Be a Tough Sell in Russia. Business Week Online [internet]. May 8. Available at:

[http://www.businessweek.com/globalbiz/content/may2007/gb20070508\\_920108.htm](http://www.businessweek.com/globalbiz/content/may2007/gb20070508_920108.htm) [accessed 4 March 2008]

Jim Barthold, 2008. Market will grow as muni Wi-Fi model changes. [internet]. Telecommunications Online.

Available at: [http://www.telecommagazine.com/NewsGlobe/article.asp?HH\\_ID=AR\\_4032](http://www.telecommagazine.com/NewsGlobe/article.asp?HH_ID=AR_4032)

Ken Wieland & Iain Morris, 2007. Russia's quest for telecom growth. [internet]. Telecommunications Online

Available at: [http://www.telecommagazine.com/article.asp?HH\\_ID=AR\\_3223](http://www.telecommagazine.com/article.asp?HH_ID=AR_3223) [accessed 21 March 2008]

LLC Ekaterinburg-2000. O Kompanii. [LLC Ekaterinburg's www-pages]. Updated 12.3.2008 [retrieved 14.3.2008]. From: <http://www.ycc.ru/about/>

MegaFon. Annual Report of OJSC "MegaFon" for 2006 [e-document]. 2007 [retrieved 12.3.2008]. From: <http://eng.megafon.ru/main/statements/>

MegaFon 2008b. Company. [www-pages]. 2008 [retrieved 18.3.2008]. From: <http://eng.megafon.ru/main/company/>

MTS. MTS Annual Report 2006 [e-document]. 2007. [retrieved 12.3.2008]. From: [http://www.mtsgsm.com/information/annual\\_reports/](http://www.mtsgsm.com/information/annual_reports/)

NCC. O Kompanii. [In NCC's www-pages in Russian]. Updated 2008 [retrieved 14.3.2008]. From: <http://www.ncc.nnov.ru/about/index.phtml?5197>

NTC. O Kompanii. [ NTC's www-pages]. Updated 2008 [retrieved 14.3.2008]. From: [www.vntc.ru](http://www.vntc.ru)

Ouida Taaffe, 2005. Lighting the red touch paper. [internet]. Telecommunications Online. Available at: [http://www.telecommagazine.com/International/article.asp?HH\\_ID=AR\\_885](http://www.telecommagazine.com/International/article.asp?HH_ID=AR_885) [accessed 21 March 2008]

Porter, Michael. 1998. Competitive strategy: techniques for analyzing industries and competitors. New York: Free Press. 396 s.

Porter, Michael. 2008. The five competitive forces that shape strategy. Harvard Business Review - January 2008.

PR Newswire. 2008. Interview with Altimo CEO, Alexey Reznikovich. Down Jones, 13.2.2008

Puumalainen et al. 2002. The Diffusion of mobile communications in Russia – Regional approach. Rome, Italy: Proceedings of Global Business and Technology Association 2002 International Conference.

Shleifer, A. & Treisman, D. “A Normal Country: Russia after Communism”. Journal of Economic Perspectives vol. 19 Number 1. Winter 2005. pages 151-174.

Sibirtelecom. About the Company. [In Sibirtelecom www-pages]. Updated 2003 [retrieved 13.3.2008]. From: <http://www.sibirtelecom.ru/english/company/index.php>

Sibirtelecom. Annual report in Russian. [In Sibirtelecom www-pages]. Updated 2007 [retrieved 13.3.2008]. From: <http://www2.sibirtelecom.ru/files/4390/2006-god-otch.pdf>

Simensen, Ivar. Deutsche Telekom disposes of stake in MTS. Financial Times [e-document], 13.9.2005. [retrieved 18.3.2008]. From: [http://search.ft.com/ftArticle?queryText=Deutsche+Telekom+disposes+of+stake+in+MTS&y=0&aje=true&x=0&id=050913000795&ct=0&nlick\\_check=1](http://search.ft.com/ftArticle?queryText=Deutsche+Telekom+disposes+of+stake+in+MTS&y=0&aje=true&x=0&id=050913000795&ct=0&nlick_check=1)

Sinchukov, Alexey. Big Three does not need 3G [e-document]. Cnews, 19.7.2007. [retrieved 20.3.2008] From: <http://eng.cnews.ru/reviews/indexEn.shtml?2007/06/19/255387>

Sistema 2007a. Corporate Information > Businesses. [Sistema's www-pages]. Updated 2007 [retrieved 17.3.2008]. From: <http://www.sistema.com/section.html?s=132&id=88>

Sistema 2007b. Corporate Information > Businesses. [Sistema's www-pages]. Updated 2007 [retrieved 17.3.2008]. From: <http://www.sistema.com/section.html?s=132&id=105>

Sistema 2007c. Corporate at glance. [Sistema's www-pages]. Updated 2007 [retrieved 17.3.2008]. From: <http://www.sistema.com/section.html?s=160>

Sistema 2007d. Corporate at glance. [Sistema's www-pages]. Updated 2007 [retrieved 17.3.2008]. From: <http://www.sistema.com/section.html?s=133>

Sistema 2007e. Corporate at glance. [Sistema's www-pages]. Updated 2007 [retrieved 17.3.2008]. From: <http://www.sistema.com/section.html?s=138>

Sky Link. O Kompanii. [Sky Link www-pages]. Updated 2008 [retrieved 19.3.2008]. From: <http://www.skylink.ru/pages/about.aspx?&r=77>

SMARTS Group. For Investors. [In SMARTS Group's www-pages]. Updated 2008 [retrieved 14.3.2008]. From: <http://eng.smarts.ru/forinvestors/common/>

Tele2. About Tele2. [In Tele2 www-pages]. Updated x.x.x. [retrieved 13.3.2008]. From: <http://www.tele2.com/pages/Normal.aspx?id=48>

Temofey Dzado and Nadejda Ivanizkaja, 5 March 2008. Тарифный план «стратегический» Vedomosti, [internet].

Available at: <http://www.vedomosti.ru/newspaper/article.shtml?2008/03/25/144285> [accessed 28 March 2008]

Tiusanen, T. 2004. Development of Russian Mobile Communications. Lappeenranta: Lappeenranta University of Technology.

UMTS Forum, 2005. Russia on the Way to the New Generation of Mobile Communications. [internet]. UMTS Forum.

Available at: <http://www.umts-forum.org/content/view/1434/70/> [accessed 3 March 2008]

Uralsvyazinform. About us. [In Uralsvyazinform www-pages]. Updated 2008 [retrieved 13.3.2008]. From: <http://www.usi.ru/en/company/>

Uralsvyazinform annual report 2006. Annual reports. [In Uralsvyazinform www-pages]. Updated 2008 [retrieved 13.3.2008]. From: <http://www.usi.ru/en/shareholders/accounts/returns/>

VimpelCom. VimpelCom Annual Report 2006 [e-document]. 2007 [retrieved 12.3.2008]. From: <http://www.vimpelcom.com/investor/reports.wbp>

VimpelCom 2008b. About VimpelCom > Awards [In VimpelCom's www-pages]. Updated 2008 [retrieved 23.3.2008]. From: <http://www.vimpelcom.com/about/awards.wbp>

Wieland, Ken. 2007. How does mobile measure up? Telecommunications International, Jun 2007, Vol. 41, Iss. 6, p. 6.

Wireless news. 2007. VimpelCom to offer OGO service. Coventry 11.2.2007 p1.

World Bank, 2007. Russian Economic Report #15. [Internet]. World Bank Russian Country Office

Available at:

[http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/RER15\\_Eng.pdf](http://siteresources.worldbank.org/INTRUSSIANFEDERATION/Resources/RER15_Eng.pdf) [accessed 14 March 2008]