SUPPLY CHAIN CHALLENGES IN RUSSIA

Masterproef voorgedragen tot het bekomen van de graad van
Master in de Toegepaste Economische Wetenschappen: Handelsingenieur

Evelien Vanderhasselt
&
An Van Esser

onder leiding van

Prof. Ann Vereecke + Prof. Robert Boute
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Confidentiality clause

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Evelien Vanderhasselt                  An Van Esser
Preface

There are many people we would like to thank for helping us throughout the process of writing this thesis.

First of all, we thank our promoter, professor Ann Vereecke, who made it possible for us to write about this fascinating subject. We would also like to thank our co-promoter, professor Robert Boute, for his excellent guidance, support and his positive feedback which kept giving us courage.

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<thead>
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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>B2B</td>
<td>Business to Business</td>
</tr>
<tr>
<td>B2C</td>
<td>Business to Consumer</td>
</tr>
<tr>
<td>BPO</td>
<td>Business Process Offshoring</td>
</tr>
<tr>
<td>BRIC</td>
<td>Brazil, Russia, India and China</td>
</tr>
<tr>
<td>CBR</td>
<td>Central Bank of Russia</td>
</tr>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
</tr>
<tr>
<td>CIS</td>
<td>Commonwealth of Independent States</td>
</tr>
<tr>
<td>CRM</td>
<td>Customer Relationship Management</td>
</tr>
<tr>
<td>CSR</td>
<td>Corporate Social Responsibility</td>
</tr>
<tr>
<td>DC</td>
<td>Distribution Centre</td>
</tr>
<tr>
<td>EDI</td>
<td>Electronic Data Interchange</td>
</tr>
<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
</tr>
<tr>
<td>FPGI</td>
<td>Foreign Policy Globalization Index</td>
</tr>
<tr>
<td>FTP</td>
<td>Federal Transport Programme</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GRDI</td>
<td>Global Retail Development Index</td>
</tr>
<tr>
<td>HRM</td>
<td>Human Resource Management</td>
</tr>
<tr>
<td>IFC</td>
<td>International Finance Corporation</td>
</tr>
<tr>
<td>IP</td>
<td>Intellectual Property</td>
</tr>
<tr>
<td>JIT</td>
<td>Just-In-Time</td>
</tr>
<tr>
<td>JV</td>
<td>Joint Venture</td>
</tr>
<tr>
<td>KPI</td>
<td>Key Performance Indicator</td>
</tr>
<tr>
<td>LSP</td>
<td>Logistic Service Provider</td>
</tr>
<tr>
<td>M&amp;A</td>
<td>Merger and Acquisition</td>
</tr>
<tr>
<td>MBA</td>
<td>Master of Business Administration</td>
</tr>
<tr>
<td>ml. sq. m.</td>
<td>million square meter</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
</tr>
<tr>
<td>mm</td>
<td>millimetre</td>
</tr>
<tr>
<td>MNC</td>
<td>Multinational Company</td>
</tr>
<tr>
<td>NGO</td>
<td>Non-Governmental Organisations</td>
</tr>
<tr>
<td>OEM</td>
<td>Original Equipment Manufacturer</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>Research and Development</td>
</tr>
<tr>
<td>RTR</td>
<td>RosTechRegulirovanie</td>
</tr>
<tr>
<td>SCOR</td>
<td>Supply-Chain Operations Reference</td>
</tr>
<tr>
<td>SEZ</td>
<td>Special Economic Zone</td>
</tr>
<tr>
<td>SKU</td>
<td>Stock Keeping Unit</td>
</tr>
<tr>
<td>SME</td>
<td>Small and Medium Enterprise</td>
</tr>
<tr>
<td>TI</td>
<td>Transparency International</td>
</tr>
<tr>
<td>TI CPI</td>
<td>Transparency International Corruption Perceptions Index</td>
</tr>
<tr>
<td>USA</td>
<td>United States of America</td>
</tr>
<tr>
<td>USD</td>
<td>United States Dollar</td>
</tr>
<tr>
<td>WTO</td>
<td>World Trade Organisation</td>
</tr>
<tr>
<td>y-o-y</td>
<td>year-over-year</td>
</tr>
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Introduction

The goal of this thesis is to map the supply chain challenges of the Russian emerging market. As Western markets are starting to get saturated, companies look for new growth opportunities in emerging economies. Countries that used to be targeted for low cost sourcing are now changing into attractive end markets due to their increase in GDP and wages. Russia is one of those markets. However, besides the fact that the market is booming, its business environment shows differences with Western markets and poses specific challenges. This complicates the supply chain because it not only needs to be globally managed but also adapted to local conditions. Therefore Western supply chain practices cannot simply be copied to the Russian business environment. In the future, as the Russian market will mature, efficient supply chain management will become increasingly important to stay competitive. Hence, it is important to have a clear view on the challenges that impede this efficiency. The current economic crisis even has accelerated the need for more attention for the supply chain. Companies have to turn to supply chain optimization in order to reduce costs.

This thesis is first of all based on an extensive literature study. Since companies operating in Russia focus mainly on growth and not on supply chain optimization the literature available on supply chain management in Russia is quite limited. Therefore, eighteen interviews were taken and two seminars attended to capture specific practical experience and find out how the challenges retrieved from the literature where experienced and solved in real life situations. Findings were consequently incorporated into the literature study.

The first chapter describes the attractiveness of Russia in the global economy. In ‘Building Supply Chain Excellence in Emerging Economies’, edited by Lee H. and Lee C.-Y., the ‘Four Forces Globalization Framework’ developed by Kouvelis and Niederhoff is employed to describe the effect of global demand, technological, cost and political or macro-economical forces on global operating strategies. This chapter analyzes the influence of these forces on supply chain strategies in Russia.

In chapter two, a compilation of the different challenges affecting the supply chain, retrieved from a variety of sources, is structured according to the five phases of the SCOR-model (Plan-Source-Make-Deliver-Return). For the first time a close look is taken at the entire supply chain and proper recommendations for each challenge are incorporated.

Chapter three first of all gives a more in depth study of corruption and the absence of Russia in the World Trade Organization, two factors influencing the entire supply chain. Next, the underdeveloped
Introduction

financial market, which affects the ease of doing business in Russia, is analyzed. These three aspects complement the previous chapter.

Chapter four and five focus on two of the largest growing industries in Russia: retail and automotive. Because of their speedy growth, they attract a lot of foreign investment and lay at the basis of supply chain development in Russia. For both sectors, the evolution, market characteristics and specific supply chain challenges are investigated. These industries are studied in depth because they give a representative reflection of the supply chain challenges.

Finally, the conclusion first of all gives an overview of the opportunities of the Russian emerging market for Western companies. Next, the different supply chain challenges are summarized according to the five phases of the SCOR model. Thirdly, recommendations for smooth supply chain operations are given. Ultimately, some suggestions for further research are put forward.
Chapter 1. Russia in the Four Forces Globalization Framework

In this chapter, the 'Four Forces Globalization Framework', developed by Kouvelis and Niederhoff, is applied to describe the position of Russia in the global economy. The framework classifies the major factors and driving forces behind the globalization process into four main types of forces: global market forces, technology forces, global cost forces and political or macro economical forces (Kouvelis & Niederhoff, 2007).

The goal of this chapter is two-fold. First of all, it gives an idea of Russia's assets and drawbacks for globalising companies. If a firm wants to expand internationally, why should it go to Russia? Why is Russia attractive and what factors should firms be aware of? Secondly, this chapter helps to understand the development of successful global operations strategies when competing at a supply chain level by evaluating the many forces that affect the global operating strategies. When a firm that is a part of a whole supply chain wants to make the right operational decisions, it is important to understand the global forces and trends. The framework helps management to get a better overview and to organize the decision process for their globalization strategy (Kouvelis & Niederhoff, 2007).
1. Global Demand Forces

“Global market forces motivate companies to seek a larger market for their goods or services.” (Kouvelis & Niederhoff, 2007, p.3). Companies operating in Western markets are confronted with declining growth rates in their domestic market; therefore they look to foreign markets to capitalize on foreign demand (Kouvelis & Niederhoff, 2007). Russia is one of those markets with a lot of growth potential.

The global market forces in Russia are characterized by three main themes:
- Demand growth
- Changing competitive priorities in product markets
- Openness towards international trade

1.1. Demand growth

International companies have penetrated almost all Western markets, which makes it harder for local Small and Medium Enterprises (SMEs) to be lucrative without international operations. To stay profitable, companies will have to expand their business into foreign markets with high growth potential, like the Russian emerging market (Kouvelis & Niederhoff, 2007).

Russia’s market growth can be explained by its Gross Domestic Product (GDP) growth, which peaked at 8.1% in 2007, and increasing wages (BOFIT, 2008).

All the interviewees declared with one voice that their sales were growing rapidly (10% to 20%) past years. However, during the last months sales dropped significantly as a result of the global financial crisis. The intensity of the growth however, depends on the industry the companies are in. Within a year, the demand of Vergokan even doubled. Likewise, for Unilin and in general for most construction related materials, annual growth rates of more than 30% were common in Eastern Europe and more particularly in Russia, before the economic crisis.

When companies focus on foreign markets they have to develop a global network of factories as well as an expanded sales and distribution network. “If economics of scale are important in the industry, the global network probably will consist of a few centralized production facilities in countries that offer comparative advantages in the critical production process inputs. The multinational firm then uses its global economics of scale to attack local markets.” (Kouvelis & Niederhoff, 2007, p.9). Electrolux applies this strategy; they have a few production facilities all over Europe each producing one specific product line. “If customization and fast response drive the industry, and economics of scale are less important, then the resulting global network will contain multiple facilities, each
Russia in the Four Forces Globalization Framework

dedicated to serving a specific local or regional market." (Kouvelis & Niederhoff, 2007, p.9). Russia is moving towards a customization and fast response driven economy because of two reasons. First of all, there is an evolution from a seller-market to a buyer-market, which is characterized by customers starting to focus more on quality and service than on price. Secondly, the Russian market is very dynamic, therefore fast response is essential. As already stated above, the design of the global network will depend on the industry. In the oil and gas industry for example economics of scale will be important, whereas the pharmaceutical industry requires customization and fast response (Jahns, Darkow & Weigl, 2006).

1.2. Changing competitive priorities in product markets

“For many years the dominant theory in international production was based on the concept of the international product life cycle. Under this theory, a company introduced a product in one or several developed-country markets. When the company enters the decline stage of its life cycle in these markets, the company simply began shipping it to developing-country markets." (Kouvelis & Niederhoff, 2007, p.10). Figure 2 shows the graphic representation of the international product life cycle theory.

![Figure 2. Product Life Cycle Theory](image)

Source: Vernon R., 1966

With the improvement of the communication and transportation technology, customers all around the world have direct access to the latest products and technologies. Hence, manufacturers should introduce new products to all markets simultaneously (Kouvelis & Niederhoff, 2007). This trend is noticed in Russia as well. Local customers become more demanding and are not satisfied anymore.
with cast-offs from Western countries (Woodger, 2007). Partly due to the penetration of the internet (see infra, p.27) customers have better information about and access to the newest and latest products. John Pennick from Domo notices this as well: "Service levels required by the Russians are getting higher due to the globalization and evolution to a mature market. To fulfil these required service levels, Domo had to increase its stock level." Another conclusion from the interviews is that, due to the quality image of foreign brand products, customers have higher service/product expectations for foreign goods than for Russian goods.

Especially in high technology industries, which demand state-of-the-art products to satisfy the customer, fast product introduction and customization determine market success. "As a result companies must maintain or source from product facilities, pilot production plants, engineering resources and even Research and Development (R&D) facilities from all over the world." (Kouvelis & Niederhoff, 2007). Concerning R&D centres, especially high technology companies like, Siemens, Intel, Nokia, Microsoft, Airbus, etc. are present in the Russian market. (Press Search) For further information concerning R&D, see section 2.3. of this chapter.

1.3. Openness towards international trade

To analyze how easy entering Russia is for foreign companies, the Russian market openness and the Foreign Policy Globalization Index (FPGI) are described in this section. Russia exported for USD 325 billion in 2007. Major export commodities are mineral fuels, mineral oils and product of their distillation, iron and steel, wood and articles of wood. Its major export partners are the Netherlands, Italy, Germany and Turkey. Russia imported for USD 199 billion in 2007. Major import commodities are vehicles, parts and accessories thereof, nuclear reactors, boilers and machinery, electrical machinery, plastics and pharmaceutical products. Major import partners are Germany, China, Ukraine, Japan and USA (GKS, 2008).
As Figure 3 shows, both export from and import into Russia are increasing really fast. This is the result of the adaptations that Russia carried out. In 2004 the Russian market was quite closed, but since Russia requested accession to the World Trade Organization (WTO) the Russian government reformed its laws and regulations to be consistent with the WTO multilateral rules. This resulted in a more liberalized, transparent and predictable trade policy, which made it easier for foreign companies to export to Russia (Vrevskiy, 2007).

The consulting firm A.T.Kearney developed the FPGI to track and assess a country’s performances in four key components of global integration: trade and investment flows, movement of people across borders, volumes of international telephone traffic and internet usage, and participation in international organizations. The position of Russia in the FPGI-ranking was fluctuating during the past years. In 2005 they dropped eight places to the 52nd place. There are a few explanations for this descent. The main problem is that the Russian economy became dependent on oil and gas investments and vulnerable to the vicissitudes of those markets. Corruption and inefficiency were also sapping Russia’s economic strength, and Russia still had not made the reforms necessary to join the WTO. In 2006, Russia rose again to the 47th place, but in 2007 they reached rock bottom at the 62nd place. This may look worse than it is. Compared to the other BRIC\textsuperscript{1} countries, Russia is performing quite well. China takes the 66th place, Brazil follows on the 67th place and India is 72nd. The reason why the BRIC countries scored poorly on the FPGI is because they have massive populations that are still rural and isolated from the global economy (A.T. Kearney, 2007).

Briefly recapitulated, the global market forces in Russia are clearly visible and have a notable influence on the Russian market.

- Western markets are mature, with limited growth options.
- The demand of the Russian market is on the rise, wages are increasing and GDP showed an upward trend last years (at least until August 2008).
- Russian customers are more demanding and want the latest, most up-to-date products; therefore companies are moving their product facilities, manufacturing plants and R&D activities into Russia.
- The Russian market is becoming more open lately as import and export are increasing really fast.

It is not all roses, taking into account that Russia scored poorly on the FPGI last years and even lost 15 places in the ranking in 2007. On top of that, Russia is also suffering from the economic crisis. Nevertheless, once the crisis is averted the growth is expected to pick up again.

\textsuperscript{1} BRIC: is an acronym that refers to the fast growing developing economies of Brazil, Russia, India, and China.
2. Technological Forces

“In recent years, competitive success depends more and more on how quickly and effectively a firm incorporates new products and process technology into the design and production of its products and services.” Technology can help companies to lower barriers to globalization or may require locating more production, R&D, and business process services abroad, closer to the suppliers of advanced technological knowledge (Kouvelis & Niederhoff, 2007, p.11).

Technological forces have influenced the global and especially Russian operations strategies. Three aspects are important here:

- Technology knowledge
- Technology sharing and interfirm collaborations
- R&D facilities
(Kouvelis & Niederhoff, 2007)

2.1. Technology knowledge

Advanced production knowledge used to be the privilege of American or European multinationals. But nowadays, only 7% of the world’s engineers are American. This is less than the amount of engineers that graduate in China, Japan or Russia (Kouvelis & Niederhoff, 2007).

In 2008 Russia ranked third in the world for the number of scientists and technicians per capita (OECD²). At this moment, a Master of Business Administration (MBA) boom is occurring in Russia as well. In 1999 the first business school that offered an MBA programme was founded, since then more than 60 schools opened their doors and started MBA trainings. Around 5,000 students graduate each year (Billing, 2007).

Countries with an abundance of engineers and MBAs are attractive for Business Process Offshoring (BPO) (Kouvelis & Niederhoff, 2007). BPO entails moving complete business processes or business tasks to low-cost countries. In 2004 the most popular destination was India, but competition from Russia and China was expected. Especially in the IT industry, Russia is a suitable location for BPO (Barlas, 2005).

First of all, Russia has impressive human and technological resources. Because of its unique engineering talents and complex problem-solving skills, Russia is becoming increasingly attractive to high-tech product companies seeking high-end R&D and IT outsourcing services (Singh, 2007). Russia

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² www.oecd.org
needs to compete on skill, not on size. Because the Russian market is not as overheated as the Indian market, the demand for IT engineers is not as high. Consequently, Russian IT companies are able to staff people with more experience and suffer less attrition due to job hopping than India (Barlas, 2005).

Secondly, there are labour cost advantages. In 2004 the IT manpower cost was USD 6,120 to USD 9,180 per annum, which is a little bit more expensive than India (USD 5,375 to USD 8,960 per annum) (Evalueserve, 2004).

Thirdly, Russia is an ideal near shore destination due to its proximity to Europe. However, concerning government policies in Russia, companies have to deal with old laws and complex tax structures, whereas in China and India government policies are more favourable (Evalueserve, 2004). However, the Russian government is investing a lot in the IT-sector which makes it even more attractive for business process outsourcing (Accenture, 2006).

To have direct access to critical technological components, companies can choose between two strategies: develop close relationships with their foreign suppliers or choose for a deep pocket investment strategy. Firms choose for the second option when they do not want to be dependent on their supplier; it is not only an expensive but also a risky strategy when the required know-how lies outside the firm's capabilities (Kouvelis & Niederhoff, 2007). IBM\(^3\), for example, applies the deep pocket investment strategy. In 2006 they opened 'The Systems and Technology Laboratory’. They chose for Russia because of the importance of the fast-growing market for the company, and because of the excellent technical skills and education.

### 2.2. Technology sharing and interfirm collaborations

Due to technological forces, multinationals setting up global operations strategies engage in technology sharing and interfirm collaborations. The main motivation behind interfirm collaborative agreements is the need to gain access to technological development (Kouvelis & Niederhoff, 2007).

An example is the U.S.-Russian aerospace Joint Venture (JV). This business strategy is based on pooling of complementary capabilities and avoidance of costly duplications. By engaging in Mergers and Acquisitions (M&As), U.S. companies can gain from cost advantages, because wages of researchers are lower in Russia. For Russian companies, the JV gives access to managerial and marketing skills and financial resources to extend their market, which is necessary because sales to the Russian government are decreasing (Daniels & Perez, 2007).

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\(^3\) www.ibm.com
2.3. R&D facilities

As already quoted above, to be competitive in global product markets companies have to shift toward product customization and fast new product development. Therefore firms are co-locating manufacturing and product design facilities abroad (Kouvelis & Niederhoff, 2007). The availability of low-cost, high quality engineers in Russia has been a major factor contributing to the location of R&D facilities there. Intel, Alcatel, IBM, HP, and many others have been setting up R&D centres in Russia (Singh, 2007). In total, already 4,500 centres have been established (Accenture, 2006).

However, there are some worrisome factors. First of all, the underdeveloped regulation of Intellectual Property (IP) rights restrains enterprises to increase their innovation activities. Secondly, there is an outflow of researchers and obsolescence of their research equipment. The outflow of researchers can be explained by the aging research community and young graduates choosing to work in a business environment where they earn more money (Yegorov, 2009). Ultimately the innovation system of Russia is not dynamic. “The interaction between the state, research institutions, universities and private companies is based on bureaucratic collaboration rather than on business-driven goals.” (Liuhto, 2009, p.23).

Improvements are expected in the future as the government adopted a strategy for the development of science and innovation in order to improve government funding programmes and to foster science and industry linkages (OECD, 2008). In Table 1, basic statistics about research and development in Russia are given.

<table>
<thead>
<tr>
<th>Table 1. R&amp;D in Russia</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Gross domestic expenditure on R&amp;D (as a percentage of the GDP)</td>
</tr>
<tr>
<td>Researchers- Per thousand employed, full-time equivalent</td>
</tr>
<tr>
<td>Patents - Number per million inhabitants</td>
</tr>
</tbody>
</table>

Source: OECD

Compared to the other BRIC countries, Russia is spending less than China but more than India and Brazil on R&D. However, they employ more researchers per thousand employees.

Only one of all the companies interviewed was doing R&D in Russia, namely Rattlerow Seghers. Together with Russian and Belgian universities they carry out genetic research with the goal to reduce costs of producing breeding pigs. Prof. Schoors states that the R&D level is not as high as in Belgium but they do focus on and are extremely good in a few fields like pure science and information technology.
In conclusion, Russia is performing well concerning technological forces.

- The Russian labour pool is characterized by unique engineering talents and complex problem-solving skills.
- More and more interfirm collaborations between Western and Russian companies are being set up.
- High-technology companies are placing their R&D centres in Russia.

Despite this, underdeveloped regulations on Intellectual Property rights and the diminishing amount of researchers is worrisome.

3. Global Cost Forces

Multinationals have always expanded to countries with a comparative cost advantage in various inputs to the production process. With the rapid evolvement of technology, the accent has however, shifted from direct labour cost to factors such as transportation, telecommunications and supplier infrastructure and government regulations (Kouvelis & Niederhoff, 2007). The next paragraphs describe how Russia fits in this picture. To find out how attractive Russia is for globalising companies, the labour market, infrastructure and government regulations are analyzed.

3.1. Labour market

Advancements in technology and production methods have reduced direct labour cost to less than 15% of total production costs for most manufacturing industries. Consequently, only for products or processes that are labour intensive and require low or commoditized skills, searching for low labour cost is still an advisable strategy (Kouvelis & Niederhoff, 2007). This section is restricted to an analysis of the evolution of wages in Russia. For more information concerning skills and regulations, see chapter 2, section 3.1. (p.35)

Russian wages are rising rapidly. The average real wage grew by 17.2% in 2007 (World Bank, 2009a). Three main factors underlie this increase:

- Productivity growth: Russia's GDP expanded by 7.7% in 2006 and 8.1% in 2007 (World Bank, 2009a). These growth figures gave companies prospects for higher profits, resulting in investments in new technologies, job creation and wage increases (World Bank, 2007).
- Competition: Demand for employees is larger than supply. Companies try to attract employees by offering higher wages than their competitors, which has an upward effect on the average wage on the labour market (PWC, 2006/2007).
Demographic crisis: “Currently, Russia faces a demographic crisis as births lag far behind deaths. While its population is aging, skyrocketing deaths of working-age males due to cardiovascular disease is a major cause of Russia’s demographic woes. A rapid increase in HIV/AIDS infections and tuberculosis compounds the problem.” Another factor causing men to die early is the high level of alcoholism (U.S. Department of State, 2007, p.2).

The next paragraph summarizes how the companies interviewed experience labour cost differences between Western labour markets and Russia.

According to Alain Beyens, Zone President Western Europe at Inbev, when analysing the Russian labour market, three segments should be distinguished:
- Moscow, where salaries are at the same level as in most Western countries. Only semi- and unskilled workers get paid less.
- Metropolitan areas with less than two million inhabitants have an average wage level slightly under the Anglo-Saxon level, but severely increasing the last couple of years.
- The rest of the country, outside the cities, where labour is still cheap.

Companies in Russia have to pay no more than 13% taxes and 10% social security. This causes the labour cost in Russia to be only 110%, compared to 200% in Belgium. Consequently, net wages in Moscow at Western levels are still cheaper for foreign companies due to lower taxes. Mr. Blanchaert, Supply Chain Manager at Unilin, confirmed this but added that excesses are disappearing because of the financial crisis. Mr. De Swert also mentioned that Multinational Companies (MNCs) however, have to appoint expatriates (expats) in general, financial and branch office management to communicate the corporate policy to the local workforce. The expats get paid considerably higher wages and get more perquisites. Finally, according to Prof. Schoors of Ghent University, companies should not expand to Russia for wage benefits, but rather for low gas and electricity prices, a favourable tax regime and an expanding market.

Table 2. Labour productivity, disposable income, wages and unemployment

<table>
<thead>
<tr>
<th></th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>Q4 2008</th>
<th>Jan-09</th>
<th>Feb-09</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP growth, %</td>
<td>7.7</td>
<td>8.1</td>
<td>5.6</td>
<td>1.1(b)</td>
<td>-8.8(a)</td>
<td>-7.3(a)</td>
</tr>
<tr>
<td>Total employment, million people</td>
<td>68.8</td>
<td>70.5</td>
<td>71</td>
<td>70.6</td>
<td>69.6</td>
<td>69.2</td>
</tr>
<tr>
<td>Employment growth, %</td>
<td>0.8</td>
<td>2.4</td>
<td>0.6</td>
<td>-0.3</td>
<td>-0.4</td>
<td>-0.4</td>
</tr>
<tr>
<td>Labour productivity growth, %</td>
<td>6.8</td>
<td>5.6</td>
<td>5</td>
<td>1.4</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Real disposable income growth, %, y-o-y</td>
<td>13.5</td>
<td>12.1</td>
<td>2.7</td>
<td>-5.8</td>
<td>-10.2</td>
<td>-4.7</td>
</tr>
<tr>
<td>Real wage growth, %</td>
<td>13.3</td>
<td>17.2</td>
<td>10.3</td>
<td>5</td>
<td>1.9</td>
<td>0.1</td>
</tr>
<tr>
<td>Average monthly wage, USD</td>
<td>392</td>
<td>532</td>
<td>694</td>
<td>668</td>
<td>544</td>
<td>524</td>
</tr>
<tr>
<td>Unemployment (%), ILO definition</td>
<td>7.2</td>
<td>6.1</td>
<td>6.3</td>
<td>7.1</td>
<td>8.1</td>
<td>8.5</td>
</tr>
</tbody>
</table>

(a) Preliminary estimate by ministry of economic development.
(b) Preliminary estimate by the World Bank staff.

Source: Rosstat
Table 2 shows the effect of the crisis on the labour market. “[The change in growth rates] started with the major slowdown in output in the last quarter of 2008. And it has affected employment, incomes and wage arrears. [...] Real income declined substantially at the end of 2008 and the beginning of 2009, mainly due to rising unemployment and worsening enterprise finances.” (World Bank, 2009, p.3).

3.2. Infrastructure

Transportation, telecommunications, utilities and supplier infrastructure are factors increasingly impacting operating costs (Kouvelis & Niederhoff, 2007). How attractive is Russia for overseas manufacturing investments, taking these aspects into account? Both the supplier, transportation and utilities infrastructure face many challenges. Local suppliers tend to be characterised by low quality and delivery reliability. The transportation and utilities infrastructure are obsolete and underdeveloped but investment plans exist. Telecommunications are evolving quickly and the level of penetration is on the rise. These subjects are extensively elaborated in chapter 2 (section 2 and 4 respectively).

3.3. Government regulations

Another decisive factor for the location of production facilities is the availability of local government subsidies (e.g. reduced interest rates and price breaks for price controlled industries) (Kouvelis & Niederhoff, 2007).

“The government has focused on improving the overall investment climate through tax, judicial, banking, customs and other economic reforms, rather than on providing specific investment incentives for foreign investors. On January 1st, 2002, Part II of the Tax Code lowered the corporate profits tax to 24% and eliminated most tax incentives in an attempt to level the playing field among businesses and across sectors. The incentives that remain apply equally to foreign and domestic investors. [...] The best way to learn about available incentives is by contacting local authorities or industry-based business associations or by hiring professional consultants.” (Economist Intelligence Unit Limited, 2007).

The Russian government has founded approximately twenty Special Economic Zones (SEZs) to stimulate the development of particular regions and industries. SEZs offer customs advantages, tax benefits (20-30% according to the Russian Ministry of Economic Development and Trade) and other privileges, such as simplified administration, to its residents, giving them some competitive advantage. However, the benefits offered are not sufficient to attract investors. “Russia’s poor
reputation on immaterial rights, weak innovation system, the low-tech image of the country, a lack of R&D-related finance, and administrative inertia downplay the advantages offered by the zones. Therefore, it is not surprising to note that foreign firms are a rarity in the zones. (Liuhto, 2009, p.23).

To sum up, concerning global cost forces, Russia is evolving to be an attractive market for foreign direct investors:
- Wages were climbing quickly before the financial crisis, but in most areas, total labour cost was still lower than in Western countries.
- Infrastructure problems still exist, but progress is being made.
- SEZs are being established to attract foreign investors by offering them a competitive advantage.

Conclusions from the interviews were that the major cost factors when operating in Russia are transportation costs (12%), import duties (15%) and delivery lead times. These costs are often decisive in the decision to set up local production activities. On the other hand, expensive land and inferior utilities infrastructure counteract this.

4. Political and Macro Economical Forces

“The international economic and political environment can be best characterised as turbulent and increasingly complex. A variety of political and macroeconomic factors [...] continuously shape the global manufacturing and business process environment.” (Kouvelis & Niederhoff, 2007, p.20). In this section, some examples of such factors, and how they shape the strategies of international companies, are given:
- Exchange rate fluctuations
- Trade agreements
- Trade protection mechanisms
(Kouvelis & Niederhoff, 2007)

The goal is to describe how these political and macroeconomic aspects are shaped in Russia, whether they increase the attractiveness for foreign direct investors or if they are on the other hand challenges firms have to deal with.

4.1. Exchange rate fluctuations

Companies with global business activities have to take into account possible exposure to changes in nominal and real exchange rates. "Since disequilibria in exchange rates may last for several months
or even years, firms should strive to maximize their operational flexibility by diversifying production geographically and effectively using global sourcing networks.\" (Kouvelis & Niederhoff, 2007, p.20)

In 1998, the rouble underwent severe devaluation, triggered by the Asian financial crisis. However, competitiveness gains from this depreciation had been nullified by real effective rouble appreciation the past years. This constituted a hazard for the competitiveness of Russian producers (The Economist Intelligence Unit, 2008a). For Foreign Direct Investment (FDI) on the other hand, this was a positive evolution. Although exporting from the Russian Federation became less profitable, companies going to Russia to sell their goods to local consumers gained from this development.

Figure 4. Russian Roubles to 1 Euro (2008-2009)

Source: www.exchange-rates.org

Figure 5. Russian Roubles to 1 US Dollar (2008-2009)

Source: www.exchange-rates.org

According to Mr. Vavro, Supply Chain Manager at Bekaert, the current financial crisis has however interrupted this trend. The rouble started to depreciate in the second half of 2008 (Figure 4 & Figure 5). This has consequences for companies exporting to Russia: rouble depreciation causes doing business with foreign companies, who charge in Euro or USD, to become more expensive for Russian companies (prices increase with 30%), leading to more arrears of payment. Consequently, foreign
companies have to lower their prices in order to stay competitive. Mr. Blanchaert (Unilin) stated that this exerts pressure on growth and turnover and stimulates foreign market players to start producing locally. However, real estate rent prices, usually expressed in Euro or USD in large cities, have also severely increased with the depreciation of the rouble, raising operational costs for companies.

4.2. Trade agreements

“The emergence of trading blocks in Europe (Europe 1992), North America (NAFTA) and the Pacific Rim has serious implications for the way firms will structure or rationalize their global manufacturing/sourcing networks.” (Kouvelis & Niederhoff, 2007, p.21). The relationship between the Russian Federation and the rest of the world will also have an influence on foreign companies operating in Russia. Especially accession to the WTO will affect the business environment and facilitate international trade. More information can be found in chapter 3, section 2.

4.3. Trade protection mechanisms

“The two broad types of barriers to international trade are tariff and non tariff barriers. Tariff barriers are types of direct protection and are imposed as taxes (duties) on imported goods. They are assessed either as a percentage of the value of the imported good or as a flat tax. [...] Non tariff barriers are forms of indirect, non-price competition of exports and imports.” (Kouvelis & Niederhoff, 2007, p.22). Tariff and non-tariff barriers are extensively discussed in chapter 2, section 2.3. Ms. Theeuwes, Business development Manager at Ahlers, mentioned that protectionist measures exist for certain goods (e.g. industrial machinery) or origins (e.g. import from China). This can be by-passed by making a detour via Europe, where small adjustments are made.

Summarized:
- Although the Russian rouble has been a stable currency, the economic crisis caused exchange rate fluctuations to become an issue.
- The government is making an attempt to attract FDI by increasing import duties.
- WTO entrance could improve the business environment, but negotiations are still not closed.
The interviewees agreed that an extensive bureaucracy of tariff and non tariff barriers exist, but these apply to both Russian and foreign companies. However, most focus here is on strategic sectors (e.g. energy and raw materials). Although import duties on consumer products have decreased the past few years, the main barriers are formed by complicated regulations and license requirements.
5. Conclusion

To summarize the findings of this chapter, an overview of the four forces and their drivers is given in the figure below. The small arrows give an indication of the nature of the driver. A small arrow pointing in the direction of a large arrow indicates that the driving force makes Russia attractive for foreign investors. On the other hand, if the direction is opposite to the large arrow, the driver turns the Russian business environment less attractive.
Chapter 2. Core Supply Chain Challenges in Russia – SCOR Model

To give a structured overview of the key challenges for doing business in Russia, a well-known supply chain model is applied: the Supply-Chain Operations Reference (SCOR) model, developed and endorsed by the Supply-Chain Council (Figure 6). “It is a cross-industry standard diagnostic tool for supply chain management and commonly used to communicate supply chain management practices.” (Supply Chain Council, 2008). Next, the five management processes of the SCOR model (plan, source, make, deliver and return) for analyzing the supply chain in Russia are elaborated and the different challenges for each step are described.

Figure 6. The SCOR Model

Source: Supply Chain Council

1. Plan

The objective of the planning phase is to work out plans for executing the other four steps and setting the course in which to take action. When going through this stage, companies need to take into account some characteristics of the Russian business environment that add a new dimension to supply chain management. Factors to inquire into are among others data collection, inventory management, management of business rules, regulatory requirements and compliance, and supply chain risk (Supply Chain Council, 2008). This subchapter describes the main particularities of the Russian business environment to take into account when planning the supply chain.
1.1. Legal and regulatory risk

Putin’s party of power dominates the political landscape and non-governmental organisations (NGOs) are closely monitored and restricted (Economist Intelligence Unit, 2008b). Besides that, the country consists of 47 oblasts (regions), where most of the authority is assigned to local authorities. They have the power to arbitrarily enforce regulations and laws, and selectively collect taxes from enterprises, apart from federal taxes. “Due to the fact that legislation can be interpreted in multiple ways and laws can be applied selectivity as authorities see fit, companies have to operate in an unstable and inconsistent regulatory environment. [...] On top of that, the judicial system lacks independence and property rights are not well protected.” (Aidis & Adachi, 2007, p.403). Although monopolistic local authorities (e.g. the region of Kursk) exist, governments of other regions (e.g. Bashkortostan, Stavropol, Tula and Smolensk) support the economic development, stimulating enter and growth of new enterprises (Aidis & Adachi, 2007).

Another obstacle are predatory inspections. Multiple inspection agencies exist in Russia (e.g. fire, health, sanitation). They have complete freedom in inspecting enterprises since no limits exist on frequency and duration of inspections. This forms a serious time and cost barrier to firm survival and growth, reinforced by a weak regulatory environment (supra). On top of that, it encourages corruption (Aidis & Adachi, 2007).

When confronted with predatory inspections, it is advised to stay friendly but never give in to a direct offer of corruption. Try to exhaust them so that you become less interesting by not paying the civil servant personally. Showing goodwill to the local community often helps to avoid losing time and money (Schoors, 2008).

Thirdly, issues still remain in licensing. There has been growth in foreign licensing in Russia the past years. It gives the opportunity to foreign companies to collect cash flows from local companies, with more market knowledge, without direct exposure in Russia. However, the legal environment is still underdeveloped, with weak enforcement of ownership rights and high volumes of counterfeit and pirated goods. In the prospect of entering the WTO, the judicial system is being reformed with introduction of more stringent laws on patents, copyrights and trademarks (Economist Intelligence Unit, 2007). In Russia, licenses are needed for all kinds of activities (e.g. construction, hazardous materials, safety, etc.). Paying bribes often offers faster treatment but can signal to other entities that you are bribable. Therefore, it is advised to be prepared and patient, and factor possible delays into your schedule. Also, working together with a local partner can be very helpful (Schoors, 2008).
Fourth, regional authorities often show predatory tax behaviour. Moscow is an example of an extreme hostile environment, causing firms to register taxes in less hostile regions, although their operations take place in the capital. "One of the most concerning developments in this area has been the implementation to the 'Back tax bill' which allows tax inspectors a free hand to collect back taxes from any existing business for up to a 10-year period." (Aidis & Adachi, 2007, p.407). However, the government is working towards improvement. During the Putin administration, tax policy risk has fallen and more reforms are at hand (Economist Intelligence Unit, 2008b).

Finally, high levels of security risk are still encountered in remote republics of the Far East and the North Caucasus, with the latter being particularly dangerous. On top of that, companies often cannot count on police and judiciary for protection. Security levels in urban centres are on the other hand similar to European capitals (Economist Intelligence Unit, 2008b).

**1.2. Administrative barriers**

The Russian business environment is characterized by high administrative burdens, which have several causes. First of all, the judicial system is underfunded, understaffed and slow moving. In its recent efforts, the government attempts to reduce excessive amounts of red tape\(^4\) that incites corruption. For example, although tax levels are quite low in Russia, the tax system is extremely complex and cumbersome (Aidis & Adachi, 2007). Secondly, on a seminary organised by the catholic university of Leuven with regard to the Russian business culture, one of the conclusions was that in Russia a detailed contract is needed for the smallest arrangements and for everything that is not paid in cash. Often a stamp and signature is required on each page, which has to be validated. This phenomenon is a relic of the communism. As Stalin used to say: “Trust is good, but control is better”. The best way to deal with this challenge is by foreseeing sufficient time and people to fulfil the paperwork. On top of that, companies should prepare well and have an advisor who knows the rules and procedures in Russia.

Bureaucracy in Russia is rather a cultural given than a matter of lack of trust. As Ms. Gusarova of Bekaert stated: "We love paper. Even when you send an email, it is best to also fax a copy because we prefer tangibility."

As an example of the bureaucracy companies can get confronted with, table 3 shows the ease of starting a business. Although Russia has decreased in rank the past few years, the costs and capital requirements have lowered and the other measures stayed stable. Since 2002, effort has been made to decrease administrative barriers from 19 to 8 entry procedures. However, administration still

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\(^4\) Red tape is a derisive term for excessive regulation or rigid conformity to formal rules that is considered redundant or bureaucratic and hinders or prevents action or decision-making. (www.wikipedia.org)
remains an issue due to lack of implementation of these reforms. Therefore, companies often bring in the help of intermediary firms who are specialized in cutting through the red tape (Aidis & Adachi, 2007).

Table 3. Starting a Business

<table>
<thead>
<tr>
<th>Rank (out of 181 economies)</th>
<th>Russia 2008</th>
<th>Russia 2009</th>
<th>Brazil</th>
<th>China</th>
<th>India</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedures (number)</td>
<td>8</td>
<td>8</td>
<td>18</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>Duration (days)</td>
<td>29</td>
<td>29</td>
<td>152</td>
<td>40</td>
<td>30</td>
</tr>
<tr>
<td>Cost (% GNI per capita) (a)</td>
<td>3.7</td>
<td>2.6</td>
<td>8.2</td>
<td>8.4</td>
<td>70.1</td>
</tr>
<tr>
<td>Paid in Min. Capital (% of GNI per capita)</td>
<td>3.2</td>
<td>2.2</td>
<td>0.0</td>
<td>158.1</td>
<td>0.0</td>
</tr>
</tbody>
</table>

(a) GNI = Gross National Income

Source: Adapted from Doing Business 2009

1.3. Geographic situation

Russia has unique geographic and demographic characteristics. Since it is by far the biggest country in the world, covering twelve time zones, it is impossible for one company to reach all the consumers. “Russia has an area of about 17 million square kilometres. With a population density of about nine persons per square kilometre, it is sparsely populated, and most of its residents live in urban areas.” (U.S. Department of State, 2007, p.3). Russia’s major business centres are Moscow and St. Petersburg, the two richest and largest cities, with populations of respectively 10.4 million and 4.6 million people. Rises in income and consumer spending are most apparent here since the majority of the higher income classes live in these cities. Further there are the Millionniki, eleven Russian cities with a population between 1 and 1.5 million, which are increasingly targeted by multinationals (HKTDC, 2007). High market diffusion and long distances to bridge complicate supply chain planning.

1.4. Market specificities

1.4.1. Consumer behaviour

Many foreign companies share the misconception that in Russia, being an emerging market, customer aspirations are still below those of Western consumers. However, consumers start to ask for more than low cost or superior quality. They expect short response times and high service levels. This is getting problematic because aspirations are starting to stretch the capabilities of retailers and developers (Woodger, 2007). Therefore, when planning ‘source, make, deliver and return’, it is important not to underestimate customer expectations in order to be prepared to satisfy demanding customers and so that products and services answer to these high expectations.

A study conducted by Jahns et al. summarizes the changes in the buyer’s market and consequences for the supply chain of market players as follows: “While price remains crucial, reliability and the time factor become increasingly important in a company’s distribution strategy. Clear lines of
communication throughout the distribution channel and towards the consumers have to be established to guarantee optimal customer relationship management. Technological capabilities, e.g. real-time information on product availability or tracking and tracing, are also becoming vital." (Jahns et al., 2006, p.37).

The interviewees confirmed that, due to the fact that Western brands have a reputation of high quality, Russian consumers have high quality and service expectations. Even though they demand a broad range of choices, they are very flexible on availability and willing to switch to other offers. On top of that, they are prepared to pay much higher prices than Western customers, especially in urban centres. Companies therefore often offer more premium brands in cities and low cost variants in the regions.

1.4.2. Market research

Before assessing the product offer, companies should perform a market study in order to understand local market and consumer preferences. The following steps should be executed to find out which products are relevant for the market:
- “Examine whether products exist in the market – if consumers are aware of the product;
- Study the product preferences across regions;
- Investigate if there are any clashes with local social or cultural beliefs;
- Find out how important environmental factors are.”
(Accenture, 2006, p.82)

Expert knowledge about the Russian market is a sine qua non for success. Once extensive market knowledge is gathered, foreign companies can adapt their products to local tastes and specific needs or start developing complete new offerings. Likewise, customized pricing and selling strategies can bring a competitive advantage.
(Accenture, 2006)

The interview with Mr. Penninck (Domo) confirmed that product ranges are often adapted to local consumer preferences. Domo produces a separate assortment for Russia, using more shiny and gold materials, other compositions and line structures. Besides that, Ms. Hoorens and Mr. Willems, Managing Director and Export Manager at Cantata, a coffee distributor in Russia, mentioned that, due to the change in consumption pattern, the concept has to be adjusted towards a very large assortment of products. For example, Cantata, extended their offer for their stores to 120 varieties of coffee and 280 kinds of tea. On the other hand, adaptations do not always have to be made since Russian customers often desire Western goods.
1.4.3. Communication with headquarters

Because of the specificity of the Russian market, it is often very hard to correctly communicate situations to the board, located in the home country and ignorant about the issues in Russia. They want global systems and techniques to be applied, unaware of the fact that adaptation to the conditions of an emerging market is often crucial. Also, they can be scared off by risks and therefore hard to convince to make additional investments. An advice here is to invite senior managers to Russia, show them the booming metropolises and afterwards take them to the rural areas to make sure their expectations for results are not too high (Thorniley, 2007).

The interviews confirmed that the gap between expats and board of directors in the homeland is a serious issue to solve. It is often hard to properly translate problems because the board does not understand that the business environment in Russia, which is one of an emerging market, combined with typical Russian elements, works totally different than what companies are used to in Western, fully grown economies.

1.5. Difficulties impeding supply chain integration

In order to increase responsiveness and minimize cost within a supply chain, all stages of the chain should be coordinated to take actions together, taking into account the effect of a decision on the other players and total supply chain measures. Conflicting objectives have to be smoothed away and information delays and distortions solved. This will result in better forecasts, avoid the bullwhip\(^5\) effect and consequently reduce costs (Chopra & Meindl, 2007). Good relationships with supply chain partners can facilitate this process. Next, the importance of trust, social networks and alliances in Russia are discussed.

“Russian society represents a unique situation in that there is lack of trust at the general (state) level and very high levels of trust at the interpersonal level.” (Butler & Purchase, 2008, p.1). Social connections play a very important role in the uncertain and unstable business environment. The new generation of Russian managers has limited connections with the former communist parties’ functionaries and is more familiar with Western business practices. Respectability, integrity and responsibility are becoming important values in new business practices in Russia. Understanding this new way of doing business is essential for companies who plan to enter the Russian market. When developing social networks, Western businesses should take time to develop trust and credibility and focus on the long term instead of trying to gain short term advantages (Butler & Purchase, 2008).

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5 “[The bullwhip effect describes the phenomenon in which] fluctuations in orders increase as they move up the supply chain [...] It distorts demand information within the supply chain, with each stage having a different estimate of what demand looks like.” (Chopra & Meindl, 2007, p.498)
As in western countries, it is important to form and maintain networks with suppliers and customers. However, in Russia this is not sufficient for business development. Networks with officials are a sine qua non for business survival and growth. This is not restricted to paying bribes. Companies should have good connections and build up informal relationships with local authorities. Foreign companies can obtain these connections by enlisting the help of government relationship officers (Aidis & Adachi, 2007). According to Mr. Leyman, CEO at Vergokan, companies are confronted with three different governments (district, region and federal) when doing business in Russia. It is important to know how the system works and how the power is distributed. Especially with the local authorities it is crucial to maintain good relationships. Business in Russia is arranged at diner, in an informal setting and mostly accompanied with beer and vodka.

Sometimes alliances or joint ventures have to be formed for political reasons, such as gaining access to customers or decision makers. This pressure exists for all companies but is generally higher for foreign firms. "Increased need for customer service, timely deliveries and information exchange also favours the establishment of long term, contractual arrangements." (Jahns et al., 2006, p.38). This can eventually result in trust between parties, which can be a huge advantage in a business environment characterised by opportunistic behaviour and weak law enforcement. Without trust intensive control and tailored incentive systems are required, standing a company in the way to focus on its core business. Therefore, partner selection and relationship building are important issues to trouble over. Characteristics and requirements of strategic partnerships should be explicitly defined in order to ensure predictability and consistency. On top of that, management has to invest in the exchange of resources with partners to encourage mutual trust and commitment (Jahns et al., 2006).

The interviews confirmed repeatedly that your local business partner is determinant for success. Especially since they know their way around the administrative labyrinth (which is mostly exclusively executed in Russian) and they have the advantage of speaking Russian, which facilitates forming and maintaining good relationships. In negotiations, it is often better to use a translator than to expect Russians to speak English.

1.6. **Forecasting demand and inventory management**

One of the main challenges in the planning phase is to assess aggregate demand. Russian companies do not hold databases and records of their sales like Western companies. Therefore, it is not self-evident to make an estimation of total market demand because there are no data to base these

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6 "Government relationship officers use their connections and give bribes in order to facilitate business operations." (Aidis & Adachi, 2007,p.406)
calculations on (Khanna, Palepu, Sinha, 2005). Just as in other emerging markets, foreign companies find great effort in getting supply chain partners to share reliable consumer information (PWC, 2006/2007).

Next to inaccurate forecast there are other issues complicating inventory management: low supplier delivery reliability, issues at clearing customs, poor infrastructure and long distances. This often causes high out of stock levels. Better collaboration between supply chain players, more reliable delivery times and higher safety stocks can improve the on stock availability. According to Rivet (2006), to manage forecasting, software technologies for demand planning, capacity planning and distribution requirement planning will be necessary (Rivet, 2006).

The results from the interviews are summarized below. Conclusions are often contradictory. This lies in the fact that forecasting accuracy and inventory management depends on the type of customers foreign companies deal with. Challenges are much higher with domestic customers and in B2C environments. When working together with foreign companies operating in Russia, forecasting demand is much less of an issue. Also, the value of the goods plays a role. The more expensive the goods (mostly in a B2B environment), the easier to make accurate forecasts. Finally, the willingness of key customers to store and share point of sale data is determining.

The main issues when selling to domestic companies are the following:

- Mr. Penninck, divisional manager at Domo, experienced that domestic distributors often order large quantities but finally only purchase what they really need. Russians tend to have a different view on the meaning of an order and refuse to pay for the entire order they originally placed.

- Ms. Hoorens and Mr. Willems (Cantata) have known problems with Russian customers only willing to place a new order before the last one is unloaded in their warehouse, not even if date and hour of delivery are known in advance. This makes forecasting demand even more of a challenge. According to Mr. De Swert, the origin of this problem lies in the fact that Russia still is to a very big extend a cash market. Before they can order a new truckload, customers first have to sell their previous order to gather money to pay for a new delivery. This causes pharmacists for example, who also work according to this principle, to be replenished by air in order to minimize lead times. This is possible because of high margins. However, if they would organize better, replenishment by truck could also be an option and would lower costs.

- Mr. Rombouts, Area Manager Eastern Europe at Rattlerow Seghers, says Russian customers are impulsive buyers. They are difficult to be engaged to long term planning. Therefore, it is hard to work together with them in a structured way. However, concerning data exchange, he does not
see any issue. Particularly with the strong new generation of business people, trade of information runs smoothly. Rattlerow Seghers weekly receives output data from its customers.

- According to Mr. Vavro (Bekaert), accurate long term forecasts (up to three months) can be made through SAP systems. However, it is important to perform a critical study on these figures taking into account the credit risk of customers. Companies should stay cautious until the last step and investigate how well customers control their finances.

- In B2C environments, Prof. Schoors says, it is even harder to forecast. Points of sales often do not have computerised systems on which their suppliers can rely to forecast demand. However, some interviewees experience that retailers are starting to work more in figures, but their numerical data concerning logistics statistics are still of an inferior level.

According to Mr. Beyens (Inbev), large multinationals generally apply the same forecasting techniques in Russia as in the rest of the world. However, some specific issue have to be calculated in, such as the size of the country which can cause longer lead times and require working with forward stocks to locate supplies close to the market. Another factor to take into account, as advised by Mr. Leyman (Vergokan), is the scarcity of space in Moscow and St. Petersburg which urges for efficiency. Available storage space can be a meagre 10% of home market space. An option is to work with minimum and maximum stock levels at article level and make a distinction between runners and slow movers. Vergokan does not keep extra safety stock to overcome the issues. They simply warn their customers for longer lead times for large orders. Since their customers are usually not prepared to share a lot of information, they are tolerant for long lead times. Finally, many sectors (e.g. carpet industry, construction, transport) have a seasonal demand, which increases complexity even more. The consequence is that both out of stocks and overstocks are regularities.

Thanks to spill over effects, Prof. Schoors says improvements are seen concerning quality of forecasts and information exchanged. Domestic customers start adopting Western systems through cooperation within the supply chain. Unilever already intensively cooperates with suppliers of crucial raw materials and packaging material in order to increase total supply chain responsiveness and minimize stocks. According to Mr. Blumentsev, Director Transportation and Purchasing at Electrolux, a high growth rates in most markets render making accurate forecasts more difficult. Once this growth is stabilized, supply chain players will be able to make better demand forecasts.

The rapid evolution of the telecommunication network will facilitate better communication within the supply chain and improve forecasts. The telecommunications infrastructure is a very important factor for dealing with the challenges of a huge territory, strong regional disparities, segmentation of economic space and centralisation by Moscow. At present, the telecom sector continues to boom
Table 4. Russian telecoms sector: internet historical data and forecast

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2006</th>
<th>2007+</th>
<th>2008f(a)</th>
<th>2009f</th>
<th>2010f</th>
<th>2011f</th>
<th>2012f</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Internet Users('000)</td>
<td>21,800</td>
<td>25,689</td>
<td>30,476</td>
<td>35,263</td>
<td>40,050</td>
<td>44,837</td>
<td>49,624</td>
<td>54,411</td>
</tr>
<tr>
<td>No. of Internet Users/100 inhabitants</td>
<td>15.2</td>
<td>17.9</td>
<td>21.4</td>
<td>24.9</td>
<td>28.4</td>
<td>31.9</td>
<td>35.5</td>
<td>38.8</td>
</tr>
<tr>
<td>No. of BIS(b) ('000)</td>
<td>1.589</td>
<td>2.900</td>
<td>4.620</td>
<td>7.250</td>
<td>10.730</td>
<td>14.700</td>
<td>19.250</td>
<td>23.800</td>
</tr>
<tr>
<td>No. of BIS/100 inhabitants</td>
<td>1.1</td>
<td>2.0</td>
<td>3.2</td>
<td>5.1</td>
<td>7.6</td>
<td>10.5</td>
<td>13.8</td>
<td>17.0</td>
</tr>
</tbody>
</table>

(a) f = BMI forecast
(b) BIS = Broadband Internet Subscribers

Source: International Telecommunications Unit (ITU), BMI Research

According to Mr. Saelens, CEO at Sitra, there are no problems with the telecommunications network in Moscow, but already 20 to 40 km out of the city infrastructure can be inferior. Sitra even has fallen out of internet for 1.5 days. However, Mr. Beyens (Inbev) experienced that even in Siberian cities, internet and cell phone connections work flawlessly. It is only outside city areas problems with telecommunication infrastructure can be encountered. Mr. Rombouts (Rattlerow Seghers) added to this that problems are more frequently met with internet than with cell phones. Several areas do not have ADSL connection yet. However, compared to four to five years ago, an enormous progress can be seen. But, quoting Mr. Leyman (Vergokan), even in the middle of nowhere, the telecommunications infrastructure can work perfectly, if you are willing to pay for it.

1.7. Strategy alignment

Companies should strive to achieve strategic fit to be successful and align their supply chain and competitive strategy. Goals should be aligned and supply chain capabilities should match the customer expectations of the targeted market (Chopra & Meindl, 2007). Jahns et al. (2006) investigated this for Russia.

1.7.1. Business strategy

Companies have to choose between two strategic positions when developing their business strategy: defender or prospector. The former combines operational efficiency, product and service excellence with low prices. This is the best option in a certain and stable business environment. The latter aims for innovation and effectiveness, rather than efficiency. Companies operating in an unstable and highly uncertain industry should take in this position (Jahns et al., 2006).

1.7.2. Supply chain strategy

A similar decision has to be made for the supply chain strategy: focussing on efficiency or effectiveness. Efficient supply chains aim at maximum operational efficiency and waste elimination.
Indispensable for this strategy are reliable forecasts of sales, lead times and supply capacities. Effective supply chains on the other hand focus on agility and adaptability and should be opted for when reliable forecasts cannot be made (Jahns et al., 2006).

1.7.3. Achieving strategic fit

Depending on the degree of uncertainty in the market a different supply chain strategy is feasible. In highly uncertain markets responsiveness is required. When demand is certain companies should strive for efficiency (Chopra & Meindl, 2007). Since the Russian market is unstable and highly uncertain, most successful companies pursue prospective-oriented business strategies. Supply chain strategies are currently rather oriented towards effectiveness than efficiency. These flexible supply chains enable companies to adapt to changes in the institutional environment, leading to a better fulfilment of customer requirements and a competitive advantage for the firm. Companies with an efficient supply chain at present are aiming for an effective strategic orientation in the future. Experience shows that achieving these objectives is only possible with strong external partnerships (Jahns et al., 2006).

1.8. Site selection

Obviously, companies will sooner focus on the rich areas of Moscow and St. Petersburg when searching for a market to target. However, these regions also have some disadvantages. Rent prices are very high and people are demanding with wages, partly because of the high level of inflation in the capital. Salaries are significantly lower in the provinces. As a consequence, companies more often consider setting up branches in the Millionniki. This also means lower office rental costs and the ability to expand outside Moscow (Economist Intelligence Unit, 2007).

Multinational corporations (MNCs) should localize their supply chain to derive Russian advantages. By setting up local manufacturing facilities, they can benefit from Russia’s low cost and well-educated workforce, avoid high import duties and take advantage of initiatives of regional governments to attract investments (e.g. business environment improvements, resource availability, tax holidays, joint development programmes). When deciding where to locate, three areas should be examined:

- Cost: land and construction, taxes, labour, etc.
- Market proximity: proximity of suppliers and customers, state of the infrastructure, etc.
- Services: local government policies, SEZ, etc.

(Accenture, 2006)

Bekaert for example intends to open a production plant in the Lipetsk Special Economic Zone.
To conclude, the most important findings in each section of this subchapter are summarized. Some success factors to keep in mind when planning source, make, deliver and return are the following:

- Legal and regulatory risk is high in Russia. Regional authorities are free to enforce regulations and apply laws selectively as they see fit. This leads to predatory inspections and tax behaviour and an underdeveloped licensing environment. Good knowledge of power distribution and maintenance of relationships with regional authorities is imperative, possibly with help of government relationship officers. Charity investments in the community can also help.

- The Russian business environment is very bureaucratic which causes delays and red tape to struggle through. Devoting time and building knowledge about the system is recommended. Local partners should be carefully selected.

- The vastness of the country causes long delivery lead times. Working with forward stocks in distribution centres is recommended.

- Consumer behaviour is evolving towards a Western pattern, but local tastes are often still different. Companies should perform extensive market research to learn about market requirements and investigate if their product, pricing and selling strategies can be fine-tuned to specific expectations.

- Social networks with mutual trust and commitment are of extreme importance in Russia. Good communication with supply chain partners improves supply chain integration and leads to better forecasts and less out of stocks. Currently forecasts are rather inaccurate because of lack of point of sales data. Only when information sharing runs smoothly, customers will be demanding about delivery reliability. Customers not willing or able to share info will be more tolerant for stock outs and long delivery lead times.

- Strategize a long term plan and make sure business and supply chain strategies are aligned. Due to high market uncertainty the supply chain strategy should be oriented toward effectiveness rather than efficiency.

2. Source

This phase arranges the procurement of goods and services, necessary for meeting planned or actual demand. Some of the processes fulfilled in this step are: identifying and selecting supply sources and assessing supplier performance, maintaining data and inventory management (Supply Chain Council, 2008). Since data maintenance and inventory management are already discussed in the planning phase, the focus here lies on supplier selection: it is better to source from local suppliers or to import from global ones?
2.1. Sourcing from local suppliers

Thanks to low labour costs and inexpensive raw materials, Russian suppliers can supply goods with an adequate technical level at competitive prices (Öhlén & Werthén, 2006). On top of that, their prices are flexible and they have established rather wide trade and distribution networks. Another major advantage is that they are able to settle disputes with Russian officials, which Western companies are not always capable of (Accenture, 2006). On the other hand, the Russian supplier base faces a few problems.

First of all, poor delivery reliability is a significant problem due to the fact that Russia is a gigantic country and the large cities, with over one million inhabitants, are geographically dispersed. On top of that, local suppliers have to deal with poor roads, shortage in trucking capacity and lack of car carriers (Ludwig, 2007). Their processes are badly organised with long production periods, frequent unavailability of inputs needed and problems with Russian bureaucracy (Accenture, 2006). Secondly, Russian suppliers often face issues with capacity constraints and limited warehousing. As the economy grows, the ability of the supplier base to grow may be limited (Ludwig, 2007). Finally, the quality delivered by local suppliers can be very poor (Öhlén & Werthén, 2006).

To solve these issues, companies need to actively engage in supplier development to improve both products and processes (Öhlén & Werthén, 2006). Examples of development initiatives, set up in collaboration with domestic suppliers, are encouraging global suppliers to partner up with local ones, providing financial assistance, transfer of know-how and technology and setting up joint ventures. Through this, Russian suppliers are able to reach world class standards and eventually export components to other markets of the MNC. It will also solve the problem of lack of skills and experience in the Russian supplier base and save time and money since continuous control over goods supplied will not have to be maintained (Accenture, 2006).

The interviews confirmed by and large the information from the literature study. Mr. Penninck (Domo) says local supplier do not implement MRP, ERP, SAP or other data management systems, leading to a bad organisation and low reliability. They apply the first come first serve principle and prefer up-front payments. Ms. Hoorens and Mr. Willems (Cantata) also believe poor delivery reliability is a consequence of lack of planning. However, a distinction should be made according to which products to be sourced. According to Mr. De Swert, Director Kuehne+Nagel, primary goods (e.g. steel, wood and other raw materials) can be easily sourced in Russia. Mr. Beyens (Inbev) adds to this that in sectors where demand is smaller than supply (e.g. raw materials), problems with delivery reliability are also smaller. For other products, potential problems should be calculated into the
planning (crisis management, draw up airtight contracts, etc.). Unilin will import only materials that are of importance for the quality of their end products, while locally sourcing less important raw materials. Electrolux faces difficulties finding local suppliers in the first place and, if they are present, quality is often an issue. Therefore, in their sector, the majority is sourced by importing from global suppliers. In the opinion of Prof. Schoors, the quality and reliability of Russian suppliers will keep on improving in the future because of spillover effects from MNCs and global suppliers.

2.2. Importing from global suppliers

Another option is to import the necessary goods and services. When choosing this alternative, companies face fewer problems concerning quality, delivery reliability, etc. However, now they get to deal with complex tariff, import and taxation policies. Table 5 shows that importing into Russia requires more administration, time and money than into the other BRIC countries.

<table>
<thead>
<tr>
<th>Country</th>
<th>Document for import (number)</th>
<th>Time for import (days)</th>
<th>Cost to import (USD per container)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>13</td>
<td>36</td>
<td>2150</td>
</tr>
<tr>
<td>Brazil</td>
<td>7</td>
<td>19</td>
<td>1275</td>
</tr>
<tr>
<td>China</td>
<td>6</td>
<td>24</td>
<td>545</td>
</tr>
<tr>
<td>India</td>
<td>9</td>
<td>20</td>
<td>960</td>
</tr>
</tbody>
</table>

Source: Adapted from Doing Business 2009

2.2.1. Tariff barriers

“Imported goods are generally subject to three types of taxes: import tariffs, value-added tax and sometimes excise duties.” (Economist Intelligence Unit, 2007). “The average applied import tariff is 10.4% for industrial goods and 21% for agricultural goods. Taking into account VAT applied to all imports the final amount of total taxes paid can reach 40% (although, strictly speaking, the Russian VAT of 18% could be recoverable). This practice makes it difficult for legitimate importers to maintain price competitiveness.” (PWC, 2006/2007, p.224). In the prospect of WTO accession, Russia has been gradually lowering import duties on a number of products that are not produced locally. However, as a response to the economic crisis, increase in tariffs has been announced (e.g. on automobiles and dairy products) (USTR, 2009). According to Mr. De Swert (K+N), no import duties have to be paid for importing technology (complete manufacturing plants), because this brings added value to Russia. Mr. Penninck (Domo) has experienced problems with constantly changing, variable import duties.
2.2.2. Non-tariff barriers

“[Next to high import duties, Russia has] maintained various entry barriers in front of Foreign Direct Investment (FDI). In privatization tenders and voucher schemes, domestic investors were preferred to foreigners. Establishing wholly owned foreign ventures was restricted and joint ventures preferred. Several “strategic sectors” remained closed to foreign investors. An additional barrier to FDI represents the underdeveloped institutional environment, especially various legal obstacles, frequently changing regulations and the widespread corruption.” (Gábor, 2007, p.2). Also, formal import restrictions (bans and quotas) exist, but are relatively few and confined to certain restricted categories. Goods such as alcohol, weapons and narcotics are for example prohibited for import. For goods subject to non-tariff control, an import license is needed and can be issued by the Ministries of Foreign Economic Relations and Trade (Economist Intelligence Unit, 2007).

2.2.3. Inefficiency and corruption at customs

The biggest problems concerning importing into Russia are inefficiency and corruption. Clearing customs is a complicated issue. “Customs determine business strategy in Russia,” says Vitaly Brazhkin, Logistics Manager for Peugeot Rus Avto: “If you are going to do business in Russia, then the first question you must ask yourself is ‘how am I going to clear customs?’ Depending on that, you will follow totally different logistics channels”. The difficulty is that rules change at different entry points, and change again at least once a year (Ludwig, 2007, p.30).

On January 1st 2004, a new customs code came into force, meant to liberalize Russia’s customs regime. Russia developed this new code in order to increase his chances to enter the WTO. Importers long complained about slow clearance times, excessive amounts of red tape and corruption among customs officers. The new code was expected to solve these discomforts, but small importers still complain and state that customs offices, particularly in the regions, are under-qualified and unfamiliar with the new code. Only some larger logistics companies and multinationals, who have good relations with customs authorities, report gradual improvements (Economist Intelligence Unit, 2007).

Inefficiency and corruption at customs can have a serious impact on cost and speed of importing goods into Russia. Often, queues of 30 kilometres are formed at Russian customs. Therefore, trucks have to wait for up to one week to clear customs, which is equal to a cost of USD 1,000. These delays and cost increases are both caused by infrastructure issues and customs officers. First of all, there is lack of equipment and manpower and facilities are in need of expansion and modernization due to an increase of imports with 475% since 1996. Secondly, “customs officers take excessive amounts of time reviewing documents and attempt to inspect all goods coming into Russia. [...] They are often
reluctant to make decisions when faced with unclear regulations because they are subject of penalties or even dismissal if their decisions are overturned.” (Antipov & Franczek, 2006, p. 14). To speed up customs clearance, importers can make use of the ‘conditional release’ option of the Customs Code, which allows them to store goods in their own warehouses before clearance is completed. Through this, high storage fees are avoided. The Code also provides other simplified procedures importers can opt for (Antipov & Franczek, 2006). “To avoid problems and delays at clearing customs, it is advised to discuss logistics operations in advance with the customs authorities. Newcomers should seek advice from local foreign business associations or chambers of commerce.” (Economist Intelligence Unit, 2007, p.92).

A final problem, discovered during the interviews, is the issue of grey imports, which turns white import uncompetitive. There are two types of grey import, importing under a lower value or under a different customs code, applied to lower import duties. The goods are officially cleared through customs but financial arrangements are made between brokers and customs officials to pass the goods through the border at a lower value (Interview with Ms. Theeuwes, 2009).

2.2.4. System of standards and certification
Another obstacle at clearing customs is the Russian system of standards and certification. Importers have to make sure safety certificates are attached to imported consumer goods. But Russia does not recognize international certificates. The consequence is that all products requiring quality or safety certificates have to be tested by a Russian testing centre, or one of the few international institutes accredited by RosTechRegulirovanie (RTR), the former Gosstandart (Economist Intelligence Unit, 2007).

To gain more insight into this subject, next follows a summary of an interview with Ms. Baert, certification expert at SGS (an inspection, verification, testing and certification company), accredited by RTR since 1993 for the emission of GOST R product certificates. GOST R certificates confirm that products comply with Russian quality standards and are published in Russian. GOST R is only one out of more than a hundred certification systems in Russia:
- Rostekhnadzor (RTN) certificate, a Permit To Use (PTU) for risky industrial goods
- Sanitary/epidemiological conclusion, carried out by the ministry of national health, required for a large range of goods (food, food processors, textile, etc.)
- Fire Safety Certificates that confirm the fire safety of products
- Etc.

These systems are often linked to each other, where certain certificate need to be obtained before others can be granted (e.g. a sanitary/epidemiological conclusion has to be obtained before receiving
a GOST R certificate for food for instance). For these systems, SGS is not accredited but acts as a mediator between its customers and the regarding Russian official authorities, sometimes directly, sometimes through subcontractors.

Although the system of standards and certification can be compared to the European one, it forms a barrier to import into Russia, not only because there is more administrative fuss, but mainly because systems in Europe are mutually acknowledged, facilitating trade between European countries. With its WTO membership pending, Russia is replacing their GOST R certificates by Technical Regulations (TRs), comparable with European directives. During 2008, the first TR’s came into force (for dairy, vegetable oil and fruit juice).

To conclude, the following tips and tricks to handle the Russian system of standards and certification were derived from the interview with SGS:

- Start on time, the process can take a long time, depending on the type of certificate the client needs to obtain.
- Clearly identify the product range and brand name. Modifications during the process can severely increase cost and time needed.
- Companies can base their product development and production on European standards. When goods are conform to these norms, there will normally be no problem with Russian standards;
- Companies can also apply for certificates in Russia through their local partner but it is advised to keep certificates in own hands. In this way, the company holds all power and has the option to work together with several or other partners in the future.
- Packaging and manuals should be translated to Russian.

2.3. Bring in global suppliers

“International companies have adopted the strategy of bringing their global suppliers to Russia, to localize production and to ensure uninterrupted supply. These global suppliers bring their world-class process, operating procedures, and technology that strengthen their supply base. Fortune 500 companies have been successful in this follow-source strategy.” (Accenture, 2006, p.129). As discussed in chapter 5, a certain critical production volume has to be reached before international suppliers can be convinced to move into Russia.

MNCs face problems in both local sourcing and importing. This makes it difficult to correctly plan the arrival of goods and sabotages the smooth operation of supply chains. Some recommendations are:

- The local supplier base can be improved through supplier development initiatives or by convincing global supplier to move to Russia.
- Problems at customs can be avoided by contacting customs authorities, local business associations and/or chambers of commerce in advance. The customs code also contains several simplified procedures importers can opt for.
- Several interviewees stressed that the only solution to import issues is to make sure to be prepared and double check each document. Only when spending a lot of time on details, trouble-free customs clearance is possible.

Whatever option they choose, companies operating in Russia have to keep extra stock, whether it is to anticipate inferior quality and delays in deliveries from local suppliers or to counterbalance problems at clearing customs.

3. Make

In the ‘Make’ stage are included all processes that transform products to a finished state with the objective to meet planned or actual demand. Activities such as receiving of material, manufacturing, testing, packaging, holding and releasing of product are managed and undertaken here. Engineering changes, facilities and equipment management, production status, production quality, shop scheduling/sequencing and short-term capacity are planned and managed as well (Supply Chain Council, 2008).

The challenges that show up in this phase can be divided into two groups namely Human Resource Management and production plant issues.

3.1. Human Resource Management (HRM)

To successfully fulfil and manage all the activities in the ‘Make’ process, a good workforce is required. It is obvious that to meet success, companies need a talented workforce to support expansion into an emerging market like Russia. A.T. Kearney developed the Retail Labour Index taking into account talent availability, talent development and labour costs. Russia is only ranked 13th out of 15 emerging countries (A.T. Kearney, 2006). Given that a high ranking indicates a strong labour market, Russia scores rather poor and faces some labour challenges.

3.1.1. Lack of experience at management level

To be successful in Russia it is important to have the right management team. The start-up process is usually supervised by expat managers, but it is important to bring in local staff as soon as possible because they have better knowledge of common issues, partners and laws (Pomlett, 2006). Expats
are also excellent for managing projects and mentoring young Russian staff which is a very important training and retention tool (Thorniley, 2007).

In Kuehne + Nagel (K+N) general, financial and branch office management consist of 100% expats. From the second line management on, in general, everybody is Russian. This strategy is applied not because local workforce is incapable of fulfilling management positions but for better international integration of the company, its policies and procedures. The aim is to eventually, in the long run, replace the expats by local managers. Mosmart, a Russian retailer, even bought up the management team from a French retailer to lead their business. Unilin found another solution to obtain knowledge about the Russian market and hired a logistic manager who already had lots of experience in the Russian market. Another issue is the very hierarchical management style, all the decisions come from above, with nearly no ownership or empowerment of the employees (Fey, 2008).

3.1.2. Mismatch of labour force

Although the labour force is well educated and skilled, continued reform of the educational system is critical to produce students with skills that answer to the rapidly changing needs of the Russian economy. In recent years, labour shortages have started to appear in some high-skilled job markets (US Department of State, 2007). “Since the majority of the educated workforce older than 40 started their own company several years ago, after the collapse of the communism, they are not available or prepared to fill in management functions in companies, consequently top management often consist of managers of 30-35 years old who lack experience.” (Interview with Mr. Beyens, 2009).

To solve this problem, big chains establish their own corporate universities aimed at educating staff. Unilever developed its Unilever Russian Academy in partnership with the Darden School of Business to develop high potentials (Verstraeten, 2008). Some companies are also looking to universities and regions, trying to attract young graduates and hire them for future positions (Thorniley, 2007).

3.1.3. High staff turnover

A major problem where companies have to deal with is the high turnover of staff. This is caused by short term employment contracts, rife poaching and the will of the Russians to make good money. As a result enterprises do not want to invest in training their workforce anymore and have a continuously changing management team (Woodger, 2007). Mr. Beyens (Inbev) underlined another cause, namely the absence of seniority and contributions to a pension fund. In Belgium this is what makes employees loyal. “In Uniliver the staff turnover was much higher in marketing and sales than in supply chain and production. Also the location is an important factor, e.g. the staff turnover of Unilever is much higher in St. Petersburg than in Tula.” The high level of rotation is also stimulated by
Russian oligarch companies that attract employees by offering them impressive salaries (Thorniley, 2007).

Nearly all the interviewees had to deal with these problems and a few of them found an effective way for solving them. Cantata, who has specialised coffee and tea retail shops in Russia, invests a lot in their employees by training and educating them. Hence, a turnover of staff of 30-35% increases their cost significantly. They came up with a solution to retain their store managers by offering great career opportunities. Store managers can now become franchisee in the long term partly financed by Cantata. This reduced their staff turnover with 25%. Another example of offering career opportunities is order pickers having the possibility to become warehouse manager in a few years time. A transparent and fair income policy is also important. According to Mr. Verstraeten, CIS Chairman at Uniliver, good HRM is a prerequisite. He is also in favour of a transparent and fair income policy with result-oriented bonuses, training, good communication and a human policy. Russian companies on the other hand compensate their lack of good HRM with much higher wages. Ms. Theeuwes (Ahlers) underlines the importance of good relations with their employees and tries to create a familial atmosphere within Ahlers. It can also be an opportunity to take into account cultural characteristics of a region when designing the HR policy.

Another way to deal with rotation is trying to involve the employees at all levels in the organization. Involvement offers a lot of opportunities for both managers as employees. Having employees that share their ideas are devoted to their work and capable to work independently enables managers to spend time on other issues than supervision. At the same time it makes employees feel more meaningful, valuable and proud. Such an organizational structure can help retaining the current workforce and even attract other talented workers. Fey (2008) describes different strategies companies are using successfully to foster involvement: provide information to all, not punish mistakes but encourage suggestions and contributions, combine a high involvement organization with a high involvement leadership style, create multiple channels for employees to contribute their ideas, provide rewards and quick feedback for useful suggestions, train top management in listening skills and implement empowerment step by step (Fey, 2008).

3.1.4. Demographical crisis

In 2007, life expectancy at birth was 59 for men and 73 for women, with the consequence that a lot of men already die while they are still in their working age (supra, p.11). The Russian population is expected to decrease by 30% over the next 50 years which will provoke HRM problems for an emerging market like Russia (US department of state, 2007).
3.1.5. Need for training and education

Companies lack qualified people who are competent in logistics and able to manage their supply chain. The Russian economy demands over 1,000 logistics specialists per annum, and only a talent pool of around 100 is available (Jordan, 2006). "This was recognised by the Ministry of Education and courses have been introduced. But the first graduate ‘Logisticians’ left university only in 2004. Since 1995 Russian students have been able to study ‘Logistics’ at 250 Colleges and Universities. [...] But all training was based on a classical understanding of logistics where each firm is treated as an isolated entity – not as part of value chains. [...] Until 2007, 650 students have graduated. [...] There are also three logistics MBA programmes." (Straube & Franke, 2007, p.7).

Besides that there is lack of basic warehousing skills, such as knowing how to drive a forklift truck. Although companies are facing the problem of high staff-churn as mentioned above, it is strongly recommended to continue investing in training since this is of high importance for the future (The Economist Intelligence Unit, 2007).

Findings from the interviews differ on education. Some companies that did not face any problems with a lack of education quoted that training was necessary but certainly not more than in Western countries. According to Mr. Beyens (Inbev), Russian employees follow the same training as in the west, and are even more open to education. Other companies faced a lot of problems. “Truck drivers need training in economical driving and safety. A lot of control is needed to prevent stealing.” (Interview with Mr. Saelens, 2008). Vergokan, situated 150 km out of Moscow, faces problems in finding skilled workforce because high skilled employees prefer to work in Moscow where wages are much higher. All their workers follow product training during three weeks in Belgium. Moreover, a Belgian technician will be full time assigned to assist local engineers in Russia. Ahlers offers their workers internal trainings with the goal to deploy them in different functions. For management they have external trainings.

3.1.6. Public transport limitations

Public transport is the most utilized means of transport. Although it can facilitate staff to get to and from their work at night or in the early morning, it does not exist in many parts of Russia. This impedes a 3-shift system such as in the West, thus results in 12 hours shifts, which has a remarkable negative impact on efficiency and productivity (Theeuwes & Boute, 2007).

3.1.7. Labour regulations

Another important topic is difficulties employers face in hiring and firing workers. The World Bank indicator ‘Rigidity of Employment Index’ is an average of the measures ‘How difficult it is to hire a
new worker’, ‘How rigid the regulations are on working hours’, and ‘How difficult it is to dismiss a redundant worker’. Russia has an overall score of 44 out of 100, compared with the other BRIC countries it ranks worst. Another World Bank indicator is the ‘Firing cost indicator’. “This measures the cost of advance notice requirements, severance payments and penalties due when terminating redundant worker, expressed in weeks of salary.” (Doing Business, 2009, p.16). Firing costs are extremely low compared to Brazil, China and India. (Table 6)

Table 6. Labour regulations

<table>
<thead>
<tr>
<th></th>
<th>Russia</th>
<th>China</th>
<th>India</th>
<th>Brazil</th>
<th>Good Practice Economy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>101</td>
<td>111</td>
<td>69</td>
<td>121</td>
<td></td>
</tr>
<tr>
<td>Rigidity of Employment Index</td>
<td>44</td>
<td>27</td>
<td>30</td>
<td>46</td>
<td>0</td>
</tr>
<tr>
<td>Firing costs (Weeks of salary)</td>
<td>17</td>
<td>91</td>
<td>56</td>
<td>37</td>
<td>0</td>
</tr>
</tbody>
</table>

Source: Adapted from Doing Business 2009

However, it is important to keep in mind that larger companies may have difficulties with laying off workers since this would undermine their relationships with regional authorities. In a country like Russia where relationships with local authorities are important, good relations can determine the future of a company (supra section 1.5.1.). However, it is going into the right direction given that under the previous code it was even more rigid (Doing Business, 2009).

Finally, there is also a positive point for employers, i.e. the provisions on the monthly minimum wage are very low, RUB 2,300 or USD 92 (The Economist Intelligence Unit, 2007).

3.2. Production plants

Increasingly more companies are starting to produce in Russia instead of importing. This gives them the opportunity to better understand the market as they are located closer to their clients. Nevertheless, they may face some challenges with the acquisition of rights of selected land plots, plant construction, importing equipment, getting connection to utility networks and impact of authorities.

To acquire permissions and land and to manage the construction of manufacturing plants, contacts with officials are very critical (Elg, Ghauri, Tarnovskaya, 2008). The impact of the federal, regional and local authorities should not be underestimated. (see chapter 2 section 1.5.)

The acquisition of rights to selected land plots can be harder than expected due to bureaucratic procedures and lack of transparency in the process. There are no formal restrictions on foreign ownership of land plots, except for farm land (PWC, 2006/2007). The World Bank investigated how long it lasts to purchase a property from another business and to transfer the property title to the
buyer’s name. In Russia this takes on average 52 days, with which it is ranked on the 49th place of 181 countries in 2009 (Doing Business, 2009). A comparison with other countries can be found in the table below.

Table 7. Registering property 2009

<table>
<thead>
<tr>
<th></th>
<th>Russia</th>
<th>Brazil</th>
<th>China</th>
<th>India</th>
<th>Best Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank (out of 181 economies)</td>
<td>49</td>
<td>111</td>
<td>30</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td>Procedures (number)</td>
<td>6</td>
<td>14</td>
<td>4</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Duration (days)</td>
<td>52</td>
<td>42</td>
<td>29</td>
<td>45</td>
<td>2</td>
</tr>
<tr>
<td>Cost (% of property value)</td>
<td>0.2</td>
<td>2.7</td>
<td>3.2</td>
<td>7.5</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Source: Adapted from Doing Business 2009

Once entrepreneurs have registered a business, they face problems with the construction of the plant. Construction companies have to comply with inspections, licensing and safety regulations imposed by the government and try to do this as quick and cost effective as possible for their customers. The World Bank elaborated an indicator on dealing with construction permits which records all procedures officially required for an entrepreneur in the construction industry to build a warehouse. “These include submitting project documents [...] to the authorities, obtaining all necessary licenses and permits, completing all required notifications and receiving all necessary inspections.” (Doing Business, 2009, p.10).

Table 8. Dealing with construction permits 2009

<table>
<thead>
<tr>
<th></th>
<th>Russia</th>
<th>China</th>
<th>India</th>
<th>Brazil</th>
<th>Good Practice Economies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td>180</td>
<td>176</td>
<td>136</td>
<td>108</td>
<td></td>
</tr>
<tr>
<td>Procedures (number)</td>
<td>54</td>
<td>37</td>
<td>20</td>
<td>18</td>
<td>6</td>
</tr>
<tr>
<td>Duration (days)</td>
<td>704</td>
<td>336</td>
<td>224</td>
<td>411</td>
<td>34</td>
</tr>
<tr>
<td>Cost (% of income per capita)</td>
<td>2612.7</td>
<td>698.4</td>
<td>414.7</td>
<td>46.7</td>
<td>7.9</td>
</tr>
</tbody>
</table>

Source: Adopted from Doing Business 2009

In Russia it takes on average 704 days to complete the process, and is ranked on the 180th place. A comparison with other countries can be found in the table 8 (Doing Business, 2009). One of the main problems that occur during the land selection and construction phase is connection to road, electricity, water and sewerage and telecommunication networks, which often depends on good relations with local authorities (Schoors, 2008). Inbev had to wait three years before they got approval for draining waste water for their new production plant in Siberia, delaying start-up. Once connections are established good supply of electricity cannot be guaranteed and fluctuates a lot. Therefore protection against surges is recommended. Vergokan found another solution and generates its own electricity in a private power station next to their production plant. Another interviewee experienced limited quantitative availability of electricity supply, resulting in a limited choice for starting up specialized (e.g. temperature controlled, deepfreeze) warehousing. Hence,
good availability of utilities was one of the most important criteria when Unilin selected a production plant in Russia.

After the construction is finished equipment has to be imported, which involves companies in a lot of red tape. GOST R and other relevant certificates like Fire Safety, Ex-Proof, etc. are needed to import equipment into Russia. If the equipment is placed on hazardous industrial sites, RTN Permits to Use are required. To transport the equipment they also need a technical passport to get into Russia (SGS, 2009). To acquire all these certifications it is strongly recommended to work together with an inspection, verification, testing and certification company like SGS.

Interviewees experienced that the general state of Russian production plants is lower than in Europe. Especially in some industries (e.g. metal, steel) plants from the beginning of the 20th century are still in use and upgrades are only made in order not to run without losses. Although investments in quality are increasing, safety awareness is still very poor; thus training and sensibilisation campaigns are needed.

In summary, the main challenges and recommendations in the make phase are:

- Lack of experience at management level can be solved by employing expats who pass on their skills and knowledge.
- Mismatch of the labour force improves, thanks to more universities offering logistic studies and MBAs. Multinationals can also opt to establish corporate schools.
- High turnover will reduce due to the economic crisis but appropriate HRM is still needed to keep employees motivated and loyal. In general, they are attracted by money, status, title, international exposure, trainings, health insurance, career opportunities and bonuses. The current economic crisis, which will seriously reduce the rotation rate.
- Some issues hard to overcome are decreasing population, limited public transport and labour regulations.
- Building a production plant is ‘not peanuts’. Good preparation and relations with the authorities are strongly recommended. Another option is to buy a production plant, but then the quality of the building may cause problems.

4. Deliver

This phase includes processes that provide finished goods and services to meet planned or actual demand. This contains:
- All order management steps from processing customer inquiries and quotes to routing shipment and selecting carriers.
- Warehouse management from receiving and picking product to load and ship product.
- Receive and verify products at customer sites and install, if necessary.
- Invoice customers.
- Manage deliver business rules, performance, information, finished product inventories, capital assets, transportation, product life cycle, and import/export requirements.

(Supply Chain Council, 2008)

The problems that show up in this area concern the following topics: transport infrastructure (which calls for particular attention), lack of warehousing facilities, and a fragmented market of Logistic Service Providers (LSPs).

4.1. Transport infrastructure

All the literature and interviews proof that infrastructure is one of the main and principal supply chain challenges companies face in Russia. Infrastructure is so poor that companies have to deal with long lead times and transport costs ranging from 15 to 30% of total expenditure, compared with 7% in Western Europe (Ludwig, 2007).

If Russia wants to be the Eurasian land bridge and an exporter of both transport services and raw materials it needs a better-integrated and more efficient transport system in order to improve the competitiveness of manufactured products in international markets and to secure the stable flow of raw materials to its foreign customers (Pynnönieme, 2008). Next follows an overview of the infrastructure in Russia and its main problems.

4.1.1. Road transport

The span of territory and distances that travellers and cargo need to travel in Russia, demand an enormous and developed network of roads and highways to connect the economic space and achieve economic development. Unfortunately a lot of problems show up when looking at the road infrastructure and truck availability.

- Road infrastructure
First of all, the state of the roadway network is poor. The current length of the road network is around one million (1,000,145) kilometres, but only 84% are paved and the rest does not allow all-season transit, which causes nearly 40,000 communities to be frequently isolated. Furthermore,
50,000 settlements are inadequate or not connected with the main transport system (Pynnönieme, 2008).

Secondly, traffic in Moscow and St. Petersburg is severely disrupted by traffic jams. During the last ten years, the number of cars grew five times faster than the length of the main road network which brings along problems, traffic jams, in the largest cities in particular (Pynnönieme, 2008).

A third issue is the large amount of traffic accidents. The roads remain very dangerous with annually over 34,000 people dying on average in traffic accidents and some 250,000 injured (Pynnönieme, 2008). Foreigners are even discouraged to drive in Russia.

Fourthly, there are restrictions on weight and speed. One third of the total network is not accessible for trucks (Jahns et al., 2006).

All these former issues are confirmed during the interviews. One can even be added, namely the large amount of badly announced road maintenance which causes extra traffic jams and accidents.

In conclusion, the road network is not the most reliable way of transport and safety stock is necessary when companies do not want to run into problems due to delays in deliveries.

A positive evolution is expected in the future. The Russian government earmarked over RUB 2,000 billion (USD 63 billion) in 2001 for the new Federal Transport Programme (FTP): ‘Modernization of the transport system of Russia – sub programme ‘Roads’ for 2002-2010’. In the first phase, up to 2005, the emphasis was laid on maintaining the functioning of the public road network and on new construction only in the most overloaded nodes of the network, whereas in the period from 2005 and beyond, the focus shifted to accelerating road maintenance activities to decrease the share of roads in need of urgent repair and construction of the main traffic arteries connecting Russia with international transit system (World Bank, 2005). It was clear that this programme was not sufficient, without further investment the dilapidated transport networks will put brakes on economic expansion. The scale of the required investment is immense. “Ministers indicated that Russia would need to spend USD 1,000 billion on its infrastructure over the next 10 years. In the transport sector alone, authorities are planning to build 62,400 km of new roads and 8,480 km of new railway lines by 2015.” (Cavenagh, 2008, p.1). As the state can only meet 20% of the cost there is a need for private investors who will play an increasingly noticeable and leading role in the large-scale modernisation of the economy (Cavenagh, 2008).

The issue of road safety has also been moving up the policy agenda. A strategic alliance has recently been formed between the Dutch programme ‘Partners for Roads’ and the World Bank to jointly contribute further to the development and incorporation of safe road design and to facilitate the transfer of knowledge in the Russian Federation. The result of this cooperation is recently published in the Safe Road Design Manual (World Bank, 2009b).
Nevertheless, companies should not be too optimistic because there are some disquieting facts that could interrupt the progress. First of all, further regulatory changes are needed to attract the desired level of private and foreign investment. Secondly, the high cement prices in Russia, due to the boom in real estate, can increase the cost of projects significantly (Cavenagh, 2008). Ultimately the global credit crisis will make it more difficult to find funds to finance projects. “Some regions like Moscow, Bryansk and Saratov already cut their budget for road maintenance. The Russian Ministry of Finance is also going to cut the road system modernization programme.” (Knight Frank, 2009a, p.1).

The best regions for road transport are North-western Federal District, Central Federal District, Volga Federal District and Southern Federal District. These regions are chosen because the roads here are of higher quality. (see Appendix 1) Furthermore, the government is planning to provide subsidies to these federal districts for improving their roads (Wagenaar & Wilmsen, 2008).

- **Truck availability**

The current supply of trucks does not satisfy the commercial and technical requirements of customer demand due to their high average age, poor operating characteristics and lack of specialized bodies like refrigerator and tank bodies. Furthermore, transport companies own sufficient medium-duty trucks but lack capacity of heavy-duty motor vehicles (up to 3 tonnes and 15 tonnes) (RosBussinessConsulting, 2007).

Roland Berger investigated that individuals, small LSPs and expeditors mainly have an outdated fleet consisting of mostly second-hand cast-offs from Western-Europe and old Russian trucks. Logistic operators and foreigners, on the contrary, have a modern fleet (Roland Berger, 2007). Trucks with a load board are less common in Russia because high prices do not compensate for the increase in efficiency, especially since most new warehouses have discharging quays (Interview with Ms. Theeuwes, 2009). Moreover, trucks wear out easily due to bad road conditions (Interview with Mr. Saelens, 2008).

**4.1.2. Railways**

The Russian railway system is one of the largest of the world and is an asset from paramount importance for the Russian economy, especially in an environment with cities and industries separated by long distances and a harsh climate. The total length of the public rail road in Russia is 85 thousand kilometres, only 49.5% is electrified and 42.5% has two or more tracks (Boltramovich, Yurkovsky, Filippov, Hernesniemi, 2005).

The problem that crops up in this field is not capacity but low maintenance of tracks, locomotives, and wagons. Consequently a large amount of gross tonnage that could perfectly be transported by rail is now transported by road (Carruthers et al., 2004). The railway system is too bureaucratic and in
many cases there are tracks but no wagons (Interview with Mr. De Swert, 2009). Thirty thousand new wagons would be needed per year, opposite to the current five to eight thousand wagons bought by the company yearly (Pynnönieme, 2008).

Another problem is that the Russian railway gauge (1,520mm) is different from the European one (1,435mm) which means holdups at the border: changing between trains, transhipping or assembling of different bogies is needed (Carruthers et al., 2004).

It is also important to mention that railways are governmentally owned. When there is a lack of wagons state related companies go first (Interview with Mr. Beyens, 2009).

If companies choose for railway transport they have three main options, each of them having some advantages and disadvantages.

The first option is to work directly with RZD7 or the RefService8 which offers the following advantages: lower tariffs, avoidance of empty run, high wagon availability and large geographical coverage. However, coordination and control is at companies’ expense, service and quality level are low and depend on private relations and planning has to be ready one month in advance (Roland Berger, 2007).

The second option is to work with expeditors, who take care of all the problems with RZD like ordering in advance, fleet availability, etc. and often have good relations with RZD management. This offers companies the possibility to make a short-term planning and coordination and communication with RZD is at the charge of the expeditor. However, the advantages come at a cost, the expeditors charge 5 to 10% extra, on-time wagon delivery still depends on RZD and a strong planning is needed (Roland Berger, 2007).

The third option is to own your wagon fleet so no problems with the availability of wagons can occur, but this requires good organization, private relationships with RZD and maintenance are at one’s own expenses (Roland Berger, 2007).

Improvements are expected in the future. On June 17th, 2008 the Russian government approved the ‘Development Strategy of the Railway Transport’ until 2030. With RUB 13.8 trillion the government wants to among others increase the density of the railway system with 24%, strengthen the position of Russia as transcontinental transport ‘bridge’ and double the production of locomotives (UNECE, 2008).

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7 RZD: the government-owned railway company of Russia (http://www.RZD.ru/en/).
8 Joint-stock company that was established on the basis of the Russian Railways branch office. This leading company operates, maintains, repairs and refurbishes refrigerated and insulated rolling stock (http://www.refserservice.ru/en/).
The best regions for rail transport are the following: Siberian Federal District, Central Federal District, Far Eastern Federal District, Southern Federal District and Urals Federal District. (see Appendix 1) These federal districts are crossed by the most important railway in Russia, the Transiberian Railway, by which the most important cities and rivers of Russia can be reached by this railway (Wagenaar & Wilmsen, 2008).

4.1.3. Seaports

“Russia has in total 43 seaports, but most of them are small. The major ones are located along the shore of three seas, being St. Petersburg and Kaliningrad on the Baltic, Novosibirsk and Sochi on the Black Sea, and Vladivostok, Nakhodka, Magadan and Petropavlovsk on the Pacific.” (Economist Intelligence Unit, 2008c, p.24).

Russian seaports have suffered from a lack of investment and modernization. To make them more attractive physical and technical upgrades are needed. For the Russian Federation, port development is a high priority with the goal to double the capacity of the current 43 seaports, improve overland (pipelines, rail and motor roads) and air links to the ports (Socor, 2007).

The table below shows the main Russian seaports, appendix 2 shows a map of the main Russian ports.

<table>
<thead>
<tr>
<th>Port</th>
<th>Sea</th>
<th>Specialisation</th>
<th>Current turnover mln. Tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Novorossijsk</td>
<td>Black</td>
<td>Crude oil, oil products, metals, fertilizers, containers</td>
<td>More than 50</td>
</tr>
<tr>
<td>St. Petersburg</td>
<td>Baltic</td>
<td>Containers, oil products, forest products, metals, fertilizers</td>
<td>More than 40</td>
</tr>
<tr>
<td>Primorsk</td>
<td>Baltic</td>
<td>Crude oil</td>
<td>Near 30</td>
</tr>
<tr>
<td>Vostochny</td>
<td>Japan</td>
<td>Containers, timber, coal</td>
<td>Near 20</td>
</tr>
<tr>
<td>Tuapse</td>
<td>Black</td>
<td>Crude oil, coal, metals, other dry bulks</td>
<td>Near 20</td>
</tr>
<tr>
<td>Nadhofka</td>
<td>Japan</td>
<td>Crude oil, metals, timber</td>
<td>More than 10</td>
</tr>
<tr>
<td>Kaliningrad</td>
<td>Baltic</td>
<td>Containers, fish, oil, and oil products, fertilizers</td>
<td>Near 10</td>
</tr>
<tr>
<td>Murmansk</td>
<td>Barents</td>
<td>Metals, coal, other dry bulks, fish, oil</td>
<td>Near 10</td>
</tr>
<tr>
<td>Vladivostok</td>
<td>Japan</td>
<td>Metals, timber, coal, other dry bulks</td>
<td>More than 5</td>
</tr>
<tr>
<td>Makhachkala</td>
<td>Caspian</td>
<td>Crude oil, dry bulks</td>
<td>Near 5</td>
</tr>
</tbody>
</table>

Source: Boltramovich et al., 2005

Another important issue is equipment. Obsolete vessels are commonly used. “For example, the prevailing vessel type is a bulk carrier with 3-5 thousand tons displacement, while the majority of maritime cargo shipping in the world today is handled by container vessels and ‘roll on – roll off’ ferry vessels.” Furthermore, there is a lack of ice class vessels, which is crucial in a country like Russia (Boltramovich et al., 2005, p.57).

The best regions for shipping are: Northwest Federal District, Southern Federal District, and Volga Federal District. The presence of ports make them attractive for shipping, especially the Northwest
Federal Districts. Most of the import from Europe passes through those ports, but in the winter waterways can be frozen (Wagenaar & Wilmsen, 2008).

As importing goods through Russian ports brings along problems, some companies opt to import via Finnish, Polish or Latvian ports, though crossing the border remains a problem (Ludwig, 2007). Three of all the companies interviewed have experience with importing goods by ship. Rombouts attempted once, but it turned out to be more expensive and time consuming than importing by truck. Cantata BVBA uses ships for importing tea from China. Unilin imports heavy and large volumes by ship into St. Petersburg.

4.1.4. Inland waterways
The Russian Federation has the world’s biggest network of inland waterways with unique depths. Inland waterways are also part of the transport development strategy. The government will try to increase traffic movements on inland waterways by stimulating the construction of more cost-effective vessels, as well as vessels designed to operate in shallow areas, and try to extend the use of high tonnage vessels (IntraSea, 2008).

However, the inland waterways will never be the leading means of transportation in the logistic development of Russia. The main problem is that rivers mainly run from the south to the north whereas products need to be transported from the west to the east or visa-versa. Moreover, due to the rigorous climate the rivers are not always frost-free (Theeuwes & Boute, 2007). Ultimately, shortage of investments has caused a reduction of navigable rivers with guaranteed depth from 56,000 km in 1992 to 44,000 km in 2007 (GKS9).

4.1.5. Air
Air is still the most expensive transport mode but the fastest as well. The number of airports is decreasing: from 1,302 airports in 1992 to approximately 421 in 2003 with inferior infrastructure. Half of the civil aircrafts are more than 15 years old and the maintenance does not comply with Western European standards. Only one airport, namely Domodedov in Moscow, fully meets the Western requirements (Jahns et al., 2007). In the next few years 620 to 820 new aircrafts will be needed in Russia to fulfil the needs of the fast growing country (Theeuwes & Boute, 2007). Another problem that arises is customs, where delays jeopardize the advantage of time gained by air transport (Ludwig, 2007). One of the interviewees confirms this: “The time you win by using the airplane, you lose again at customs.” An experienced and well oiled team is required to work cost efficiently via an airport terminal. SKF however, did not have any problems with importing by air,

9 www.gks.ru
80% of their import is done by plane. However, sometimes special customs clearance procedures are needed (e.g. for computers). For these products it is better to import by truck.

The best regions for air transport are the following: Northwestern Federal District, Central Federal District, Siberian Federal District, Ural Federal District and Far Eastern Federal District. International airports, present in these districts, can improve international trade (Wagenaar & Wilmsen, 2008). Some remote settlements in Siberia and the Far East can only be reached by air because they do not have any other transport connection with the rest of the country (Boltramovich et al., 2005).

**4.1.6. Pipelines**

Russia possesses the longest pipeline in the world. Its total length is 226 thousand kilometres, with 163 thousand kilometres gas pipelines, 47 thousand kilometres oil pipelines, and 16 thousand kilometres for oil products. (GKS10) All oil pipelines are managed by the state owned company Transneft; all gas pipelines by the state monopolist Gazprom (Boltramovich et al., 2005). In 2006-2008 the export capacity of the network was not sufficient to fulfil the requirements of the expanding oil companies. However, Transneft does not have enough financial reserves to extend the network and private investors refuse to invest because the Russian government wants to stay in control. Consequently oil is transported by rail and sea rather than through pipelines. “In 2005, the largest current oil pipeline project, Taishet-Perevoznaya, was agreed upon. The 4,130 km pipeline will connect the Perevoznaya oil terminal at the Pacific Ocean with the Siberian oil fields. In addition, a gas pipeline in the Baltic sea shall connect Germany with Siberian gas sources.” (Jahns et al., 2006, p.25).

**4.1.7. Multi-modal transport**

Multi-modal transport is the use of more than one mode of transport to move a shipment to its destination (Chopra & Meindl, 2007). It is becoming the generally acknowledged delivery system in the global market. However, Russian logistics operators lack finance, experience, transport infrastructure and have too many technological and informational deficiencies to set up a multi-modal transport structure (Accenture, 2007). On top of that, there is lack of links between main air, sea and road networks (supra p.46).

The Russian government was aware of this when they set out the goals of the ‘Transportation strategy of the Russian Federation through 2020’. One of the targets was ‘to stimulate the creation of Russian multi-modal transit operators’. This is a prerequisite for Russia if it wants to become the transit base between Asia and Europe (Krasnova, 2006, p.12).

10 www.gks.ru
Appendix 2 contains a logistics map of Russia that points out the multi-modal transport complexes to be developed according to the 'Federal Programme of Transport Modernization'.

4.1.8. Choosing a transportation mode

As a conclusion, the popularity of the different transport modes and the factors which should be taken into account when companies determine their transport mode are described.

As shown in Figure 7 and Figure 8 motor is mostly used for short distances, railway and pipelines for longer journeys.

Figure 7. Freight shipment by transport mode 2007 (Mln Tons)

![Pie chart showing freight shipment by transport mode in 2007. Motor is the primary mode at 73%, followed by pipeline at 11%, railway at 14%, marine at 2%, and air at 0%.]

Source: GKS, 2007

Figure 8. Freight turnover by transport mode 2007 (Bln. Ton.kilometres)

![Pie chart showing freight turnover by transport mode in 2007. Pipeline is the primary mode at 50%, followed by railway at 43%, motor at 4%, inland waterways at 2%, and air at 0%.]

Source: GKS, 2008
The choice of transport mode depends not only on transportation cost, but also on inventory cost and the level of responsiveness needed. Therefore it is important to take into account the company’s competitive strategy (Chopra & Meindl, 2008). (see section 1.5. of this chapter)

The interviews show that road is the most common transport mode. This is a result of the fact that the companies interviewed are mainly operating in the Moscow – St. Petersburg region. In the Western part of the country, truck is used almost exclusively. If companies have customers in the far-off regions they opt for rail transport. Electrolux for example uses in 70% of the cases the road and in 30% rail.

"The rule of thumb in Russia," says Brazhkin, Logistics Manager for Peugeot Rus Av, "is that it makes sense to use rail when it goes beyond the Ural Mountains, which are considered the border between Europe and Asia." (Ludwig, 2007).

Important to notice is that the economic crisis has an impact on the cargo turnover of the transport modes. The cargo turnover of the Russian railways decreased with 35% in January 2009, road freight slightly increased with 2% (Figure 9) (Knight Frank, 2009b).

![Figure 9. Road freightage turned out to be the most resistant to the crisis. Increase (decline) in cargo turnover in November, 2008 (% compared to November, 2007)](Source: Rosstat, 2009)

4.2. Warehouse infrastructure

A continuously growing emerging market like Russia attracts a lot of importers, manufacturers and retail chains. This evokes a constant growth of demand for modern warehouse facilities and causes an imbalance in demand and supply.

At the supply side there is a remarkable shortage of warehouses. Although a large volume of new space is entering the market, capacity can still not keep up with demand. There are two main reasons why Russia remains behind in the supply of warehouses compared to other Eastern-European countries. First of all, investors prefer to invest in more developed real estate sectors (e.g. offices,
housing) which are more profitable and secondly, there is a lack of suitable land plots on the open market and the process to obtain land for industrial use is very bureaucratic (Gateway2Russia, 2008).

Existing warehouses mostly do not meet international standards. But since Russian companies are focusing more and more on European business standards, supply of high-quality warehousing starts to rise. “Class A warehouses — which have convenient access, 24-hour security, levelled floors, a clear ceiling height of at least 8 meters, controllable temperature regimes and availability of all utilities and equipment to modern requirements — are now dominating the modern industrial supply as a result of a significant increase in new space.” The supply of Class B warehouses also increased but only by a few new projects with minimal space (Gateway2Russia, 2008).

Next, the two most important regions for warehouses, Moscow and St. Petersburg, are analyzed and the potential of the regional markets.

In the Moscow Region, The total supply of warehouses in December 2008 was 9,045 million square meter (ml.sq.m.) (Knight Frank, 2008). The rental rates in Moscow are extremely high (Table 10) caused by the shortage of supply but last months they stayed stable (Astera, 2008a).

Table 10. Rental rates range depending on location in Moscow Region, 1st half 2008

<table>
<thead>
<tr>
<th>Class</th>
<th>Inside 10 km from the MKAD (a) ($/sq.m/year)</th>
<th>Outside 11 km from the MKAD ($/sq.m/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>140-190</td>
<td>120-160</td>
</tr>
<tr>
<td>B</td>
<td>120-180</td>
<td>100-170</td>
</tr>
</tbody>
</table>

(a) MKAD is a beltway encircling the city of Moscow.

Source: ASTERA, 2008

St. Petersburg faces the same problems as the Moscow Region; the demand of A and B class warehouses is still not satisfied. This high demand is caused by the entry of foreign retail companies and logistic operators. The supply of warehouses amounts 1,600,000m², Figure 10 shows the share of the different classes (Astera, 2008b).

Figure 10. Structure of St. Petersburg warehouse real estate market, 1st half of 2008

Source: Astera, 2008
Table 11. Rent warehouses in St. Petersburg

<table>
<thead>
<tr>
<th>Class</th>
<th>St. Petersburg ($/m²/per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>120-150</td>
</tr>
<tr>
<td>B</td>
<td>113-133</td>
</tr>
</tbody>
</table>

Source: Astera, 2008

The pricing characteristics for warehouses are: transport availability, technical preparation of land plots, location, class of warehouse and technical condition. Leasing rates of warehouses can be found in the table above (Astera, 2008b).

The growth of the regional market is driven by economic growth, increasing wages, expansion of retail chains, growth of the logistic sector, strong interest from international manufacturers (Pantyushin & Rybakova, 2007), and low competition (Knight Frank, 2008). The warehouse market in the regions was characterized by low quality supply, 90% of the warehouses are of classes C and D. However, the availability of state-of-the-art warehousing facilities grew last years as large projects entered the market. Demand for class A warehouses comes from the logistic operators, retail operators and fast moving consumer goods (FMCG) companies. SMEs create a potential demand for warehouses of lower quality. The rent for different warehouses can be found in Table 12 (Knight Frank, 2007).

Table 12. Rent Warehouses in the Regions

<table>
<thead>
<tr>
<th>Class</th>
<th>Regions ($/sq.m/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>105 – 140</td>
</tr>
<tr>
<td>B</td>
<td>100 – 120</td>
</tr>
<tr>
<td>C</td>
<td>40-100</td>
</tr>
</tbody>
</table>

Source: Knight Frank, 2007

Mr. Verstraeten (Unilever) confirmed the lack of warehousing capacity and quality in the regions. Prices can run up as competition is low in the regions. However, lately investments are increasing and improvements are noticed.

The availability of warehousing space is improving, but cross-docking and specialized distribution centres (DC) are still missing (Weidman, 2008). LSPs just started to develop this (PWC, 2006/2007). According to the interviewees, cross-docking does exist, but only in the retail market. Some brands work together, trying to consolidate their products. However, some problems may arise with national laws enforcing the compatibility of the transported goods. Russian retailers sometimes hire experienced expats to copy-paste a retail organization. Unilever is trying to set up some cross-docking operations with their clients but this is still in its infancy. Mr. De Swert (K+N) ads to this that most deliveries are done with dedicated trucks (from point A to point B) and consolidation systems are not expected within the next ten years because of high investment costs.
The warehouse market is seriously influenced by the current economic crisis. “Vacancy rates for high quality warehousing complexes have risen from 1% at the end of 2008 to 5% in February 2009 in the Moscow region and up to 30-50% in other Russian regions.” (Knight Frank, 2009b, p.1). The rent rates decreased as well like shown in Figure 11.

**Figure 11. Moscow region rent rates in January, 2009 went down to the rent rates level of January 2007 (average rent rates, $ per sq. m. per annum)**

![Figure 11: Moscow region rent rates](image)

Due to savings in logistic expenses by companies, demand for low-quality warehouses and warehouses located far from the MKAD increased (Knight Frank, 2009b).

### 4.3. Logistic Service Providers (LSPs)

Shortening of the product life cycle (see chapter 1, section 1.2.) incites producers to cut the logistic chain and focus more on their main activities. With the aim to reduce their costs companies outsource the logistic aspect (Yusova, 2007).

#### 4.3.1. Logistic market characteristics

The number of logistic companies operating in Russia is estimated between 4,000 and 6,000, but only some 100 companies, including Western logistic operators, can be called LSPs. The top 20 LSPs account for 9% of the total volume of the transportation and logistic services market. (RosBusinessConsulting, 2007) The top 10 in Germany on the contrary had a market share of 12%. This shows that the Russian logistic market is still fragmented, which is a main characteristic of logistic markets in transition countries (Straube & Franke, 2007). Providers offering the whole logistic portfolio everywhere in Russia did not yet exist in 2007, consequently 47% of the companies were working with more than seven different LSPs (Jahns et al., 2006). In 2009 there is still no existing logistic provider who can offer this. However, there are companies like K+N offering the whole
portfolio and working together with subcontractors for warehousing and customs in certain areas. Furthermore, the logistic market is characterized by low service levels and low degree of experience, knowledge and professionalism (Jahns et al., 2006).

Logistic obstacles such as poor roads, lack of warehousing, specialised vehicles and trained staff result in long lead times and high transportation costs, e.g. diesel consumption in Russia varies from 3.5 to 4.5 litres per kilometre compared to 2.5 to 3 litres in Western Europe. A truck’s life span is to 100,000-150,000 km in Russia, compared with 300,000 km in Western Europe (Roland Berger, 2007). Since there is one-way traffic from the western and eastern borders to the centre of Russia and no goods need to be transported in the other direction, efficient transport (and thus low prices) are hard to achieve because trucks always return empty. This finding was confirmed by Ms. Theeuwes (Ahlers). A logical consequence is that LSPs raise their prices, especially towards the end of the year, when the Russian market is at its peak. "From November to December the prices can increase by 10 to 30%," says Anna Vorobjova, Commercial Director for Gema, a Russian LSP, "But it is a normal situation. They do it simply because they can." It is important that these issues are solved in order to profit from the opportunities of growing demand (Ludwig, 2007).

4.3.2. Trends and future perspective

With the regional expansion of the retail sector (Infra, Chapter 5 Section 5) and growing local investments in warehouses LSPs are likely to follow. However, they proceed with caution because the infrastructure available is not sufficient to support full activity and little information is available from regional governments about when plans for investments will be executed. There is also shortage of skilled labour, which forces manufacturers and suppliers to put up regional training centres, increasing operational costs (Automotive Logistics Russia, 2008).

The expectations and requirements of customers are increasing. A shift occurs from price towards reliability, safety/quality, geography and relationships (Jahns et al., 2007).

Short-term contracts still dominate the logistic market, mainly due to poor performance by traditional Russian LSPs (Theeuwes & Boute, 2007). However, there is a clear trend to long term-contracts which require top services, investments and adequate planning for LSPs to become full service providers (Wagner & Bode, 2008).

Future development of leading LSPs will be based on expansion on their services offered and provision of services at all stages of the supply chain. SMEs that want to survive in the future should focus on specialization, niche markets and providing special services like transporting non-standard goods.
Consolidation is likely to occur with the expansion of large market players taking over small ones (RosBusinessConsulting, 2007), especially with the current economic crisis driving badly organized LSPs out of business. This is confirmed by Ms. Theeuwes (Ahlers). The first mergers already took place. An example is the merger of RLS and STS, two large complementary LSPs, in March 2009 into one of the largest independent players in Russia. Moreover, due to a law reform customs brokers needed a large bank guarantee to obtain a license in 2009 which drove around 150 small players out of the market.

Partnerships could help to better meet customer requirements and overcome restraints. But LSPs claim that it is too soon to engage in partnerships. Quoting Hauke Harnisch of Lear\(^\text{11}\): “At this point we are not collaborating because we are all trying to get acquainted with our own business circumstances. In fact, we are facing difficulties sharing resources even with our own divisions.” (Automotive Logistics Russia, 2008).

Nearly all companies interviewed outsourced their logistic activities. As distances are long and customer density is low, outsourcing logistics is an obvious choice in Russia. Cantata BVBA outsources deliveries to the regions but supplies its shops in St. Petersburg and Moscow with its own vans. When SKF had to choose an LSP, they searched for a stable international LSP with whom they already worked and who is spread over the whole country to reduce the reliability risk. They also prefer to work with one LSP being in charge of all their logistic activities.

The main issues in each subpart of the delivery phase are summarized below:

**Transport infrastructure:**
- Lack of roads, traffic jams and obsolete trucks; expected to improve through investments planned by the government.
- Extensive but neglected rail network, low availability of wagons and tightly controlled by the government.
- Seaports are overloaded and waterways flow from south to north, while goods mostly have to flow from east to west. Both are often frozen in the winter season.
- Air transport is expensive and delays at clearing customs undo time gained.

In the west trucks are mostly used, while switching to rail is recommended beyond the Ural. Multimodal transport is on the rise.

**Warehouse infrastructure:**
- In Moscow and St. Petersburg class A warehouses are arising but prices are high due to shortage.
- Regions lack high-quality warehouses, but LSPs are beginning to penetrate the market.

\(^\text{11}\) Supplier of automotive interior systems and components
- Cross-docking and appropriate DCs are in their infancy.

LSPs:
- Problems are a fragmented market, with no LSPs offering the entire logistic portfolio and low service levels.
- In the future prices will be less important and focus shifts to reliability, quality, safety, etc.

LSP selection should be based on services offered, geographical coverage and reliability. Choosing an LSP which is also customs broker leads to better planning, less bottlenecks and more control over the flow of goods.

5. Return

This phase covers all the processes related with returning or receiving returned products for any reason (defect, warranty, excess, etc.). These processes extend into post-delivery support. Typically this includes authorization, scheduling, inspection, transfer, warranty administration, receiving and verifying defective products, disposition and replacement (Supply Chain Council, 2008).

Unfortunately after sales service is still only a Western concept and not a Russian one. Some Western companies are trying to implement after-sales services but underline the difficulties. According to Mr. De Swert (K+N) returning and re-exporting goods causes even bigger problems than importing. What cannot be repaired in Russia has to go back to the country of origin which requires a specific export declaration. Because this is hard to manage, companies try to solve this by offering their customers a price discount. (Interview with Mr. Blanchar, 2009) Electrolux manages its after sales services separately. It has customer service providers who repair goods in local repair shops.

Although, with the changing and more demanding expectations of the customer, companies will have to work out a supply chain for the return of goods in the near future as well.

6. Conclusion

To summarize the finding of this chapter, the figure below gives an overview of the main challenges and opportunities in the five phases of the SCOR model.
Core Supply Chain Challenges in Russia - SCOR Model

- Customers spread over large territory
- Lack of point of sales data
- Bad communication throughout the SC
- Unstable legal environment
- Bureaucracy
- Importance of contracts
- Importance of social networks

**SOURCE**

- Local Supplier base
  + Competitive and flexible prices
  + Wide trade networks
  - Poor delivery reliability
  - Capacity constraints
  - Low quality
- Importing
  + Higher quality
  + High import duties
  + Inefficiency and corruption at customs
  + Complicated system of standards and certification
- International Suppliers in Russia
  - Absence
  - Certain critical volume has to be reached
  - Spill-over effects to local supplier base

**MAKE**

- HRM
  - High staff turnover
  - Lack of logistics
  - Lack of quality managers
  - Low empowerment
  - Need for experts
  - Demographical crisis
  - Need for training
  + Good engineering and IT skills
- Production Plant
  - Bureaucratic procedures in acquisition of land
  - Plan construction
  - Certification of imported equipment
  - Access to utility networks

**DELIVER**

- Poor infrastructure
  - Lack of roads
  - Extensive but obsolete rail & lack of wagons
  - Inferior infrastructure at overloaded seaports
  - Wrong flowing waterways
  - Delays at customs in airports
- Lack of warehouses
  + Class A warehouses in Moscow and St. Petersburg
  - High prices
  - Quality in regions is low
  - No cross-docking infrastructure
- LSPs
  - Fragmented market
  - No LSP offers the entire logistic portfolio
  - Consolidation expected in the future

**RETURN (DELIVER)**

- Underdeveloped
- Difficulties with goods returning to country of origin
- In future increasingly important
Chapter 3. Extra Challenges Influencing the Supply Chain

Besides the challenges that can be situated in one of the five steps of the SCOR-model, there are some other difficulties that may influence the whole supply chain and that investors have to take into account when they are planning their expansion into Russia. This paragraph discusses the presence of corruption and financial challenges due to underdevelopment of the financial market and how accession to the WTO could improve the business environment.

1. Corruption

Corruption is defined by Transparency International (TI)\textsuperscript{12} as the misuse of entrusted power for private gain. In Russia, corruption is a remainder of the former plan economy. The growth of the flow of private money during the transition period strengthened this phenomenon.

There are three types of corruption:
- Small payments to get something done, which is widely accepted in Russia.
- Criminal acts, fraud and blackmail which are common in the Russian business life.
- Bribery of government officials to win a government contract.
(Transparency International, 2008)

The most widely accepted method to assess levels of corruption is the Transparency International annual Corruption Perceptions Index (TI CPI).

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</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>2.3</td>
<td>2.4</td>
<td>2.4</td>
<td>2.1</td>
<td>2.3</td>
<td>2.7</td>
<td>2.7</td>
<td>2.8</td>
<td>2.5</td>
<td>2.4</td>
<td>2.3</td>
<td>2.1</td>
</tr>
</tbody>
</table>

(a) The TI CPI is scaled 0-10; the higher the score, the less corruption is perceived.

Source: TI, 2008

During Putin's first term of office (2000-2004) there was a clear improvement. However, in his second term (2004-2008) corruption increased again due to the fact that he focused more on the economy and international image of Russia than on fighting corruption (Holmes, 2008). Furthermore, the rapid economic growth from 2004 on caused an increase in the demand for administrative functions and consequently an increase in opportunities for administrative or petty corruption (Nawaz, 2008).

\textsuperscript{12} TI is an international non-governmental organization addressing corruption.
Another index that emphasises the corrupt character of Russia is the World Press Freedom Index. Russia ranks 141st out of 169 countries, which indicates a media environment that is not free because lack of diversity, especially in the broadcasting media (Reporters without borders, 2008).

1.1. The causes

Corruption is the result of a combination of opportunities and incentives. In a state like Russia, with complex tax and customs systems, capital controls, financial market regulations and extensive regulations on businesses, there are more than enough opportunities. The incentives to act corrupt consist of low government salaries, time consuming bureaucracy, weak legal enforcement and absence of a public conduct set by the political and business elite (Transparency International, 2008). Other factors that create extensive grounds for corruption are poor accounting and auditing systems, lack of transparency in government operations, few civil society institutions that monitor the actions of the state and state controlled media (Roaf, 2008).

1.2. Corruption in the business environment

There are different kinds of corruption at business level. First of all, the judicial system is still evolving in Russia. The judiciary is independent by law, but judges will in some cases accept bribes especially in regional and local courts where local strongmen put political pressure on the judges. Small improvements in the level of corruption in the judiciary between the period from 2002-2007 have been reported. Western companies are advised to go to international arbitration in Stockholm or to other courts abroad. However, decisions taken abroad still have to be enforced in Russia. Secondly, police officers are authorised to stop a loaded truck and demand to see evidence that the goods are not stolen. If any documentation is missing, the officer has the right to seize the goods and to check their content and origin. Companies often choose to pay a bribe in order to avoid this harassment. Thirdly, tax officials try to force companies into paying bribes in return for a reduction of taxes or a favourable report by the official. Further, as already discussed, land administration and licensing are also susceptible to corruption (supra p.19). Finally, the combination of low customs officers’ salaries (about USD 300 per month) and handling of goods worth millions, incite corruption (Business anti-corruption portal, 2008). This causes that especially during logistic activities companies are confronted with corruption (Dijkhuizen, 2008).
1.3. Future perspective and recommendations

Corruption damages the business environment, weakens the state and its image and undermines the trust in the state. Fortunately Russia is doing some effort to face corruption. Some public anti-corruption initiatives already exist in the field of legislation, anti-corruption agencies, financial monitoring and public procurement. The UNCAC\textsuperscript{13} ratification and GRECO\textsuperscript{14} memberships provide some hope for developing a comprehensive Russian anti-corruption policy. However, there is still a lack of coordination between the innumerable agencies fighting corruption and the overall political will to go after the ‘big fish’. Consequently anti-corruption initiatives have only an impact on the lower levels of corruption (Business Anti-Corruption Portal, 2008).

Key findings from the interviews and recommendations concerning corruption are:

- Russians have another view on corruption than Westerners, for them it is the way they do business and a part of their culture. Therefore it is recommended to work with a Russian partner who is acquainted with the unwritten rules.

- A lot of corrupt activities happen especially at customs.

- Companies have to choose between the official way, which is not expensive but takes a lot of time or the Russian way, which costs more money but is much faster.

- Once you pay bribes there is often no way back.

This leads to the conclusion that there are different ways for dealing with corruption. Some admit that it is just the way business is done in Russia. When companies choose to follow the legal way, they emphasised the importance of having time and good preparation, since not paying bribes slows down your business. A middle course exists as well. Companies can work with local partners, so they are not directly confronted with corruption.

Corruption makes it harder to do business, but not impossible. It is strongly advised to foreign companies to work together with a local partner. This makes them less vulnerable to administrative corruption due to their lack of knowledge of local customs and procedures. There exist companies that cooperate closely with licensing authorities. They offer services such as taking care of licensing paperwork. This is one of the keys to ‘outsourcing of corruption’ (Nawaz, 2008).

\textsuperscript{13} United Nations Convention Against Corruption
\textsuperscript{14} Council of Europe Group of States against Corruption
Corruption is inherent in doing business in Russia, the following particularities should be kept in mind:
- Low salaries in government functions, bureaucratic systems and weak legal enforcement incite officers to corruption.
- Although paying bribes may seem attractive to save time, paying once can signal to other entities that you are bribable.
- Preparing for unexpected delays is recommended.
- A lot of corruption is especially encountered at customs, enlisting the help of an experienced partner can therefore be essential.

### 2. World Trade Organization

For many years now, Russia has been engaged in the long process of negotiating its accession to the World Trade Organisation (WTO). WTO membership would make it a lot easier for globalising companies to do business in Russia. WTO disciplines outreach agreements on tariffs and includes regulations on product standards, technical barriers to trade, intellectual property and the rights of foreign investors in the services sector (not in goods). Accession to the WTO also imposes institutional development and changes in the regulatory regime with reference to these areas. These changes can have both an aggregate effect on productive sectors as a more general impact on the average income and poverty rate (Rutherford & Tarr, 2008). This chapter describes the implications for Russia and its trade partners of WTO membership and current barriers for accession.

#### 3.2. Terms and conditions for entering the WTO

The final specifics of Russia’s accession agreement have not been laid out yet, but certified bodies, such as the Russian Ministry of Economic Development and Trade (MEDT), have already provided some official information on the agreed terms (Simola, 2007). Next, the most important issues on which agreements will be made are summarized. The main focus lays on reduction of the import tariffs and reform of the service sector.

##### 3.2.1. Import tariffs

WTO negotiations are usually, among other things, about lowering import tariffs. "According to the MEDT, the average drop in Russia’s import tariffs for foodstuffs and industrial products will be about
3 percentage points, but the changes will vary according to sector and specific products. The average duty level will thus drop from 11% to 8%. The lowering of the import duties will not take place immediately after accession to the WTO. There will be a transition period of one to seven years, depending on the product (Simola, 2007).

3.2.2. Service sector

Some of the most important commitments by Russia are in the area of services. Hundred percent foreign ownership in non-life insurance companies, banks and other non-insurance financial institutions will be allowed and the limit on foreign ownership of the sector will be increased to 50%. China has already proven the advantages of this proceeding. In 2001, it agreed to fully open its insurance markets, as part of its WTO accession commitments. The results have been extremely positive for consumers. In addition, wages of skilled workers in the insurance sector have grown, and even domestic insurance companies have risen, due to better access to foreign capital.

Other commitments include allowing cross border provision of numerous services including asset management services, credit cards and other types of payments and allowing foreign investment companies to own and trade the full range of securities available in Russia and to participate in the financing of privatization of state owned enterprises.

Russia also agreed to terminate the monopoly of Rostelekom on fixed line long distance telephone services and foreign owned telecommunication companies will be allowed. Other professions in which hundred percent foreign ownership will be permitted are among others lawyers, architects, accountants, management specialists, engineers, etc.

WTO commitments in the trade and distribution area will be acceptance of wholly foreign owned companies in wholesale, retail and franchise sectors, as well as express delivery services (Tarr, 2007).

3.3. Implications of Russia's accession to the WTO

“The WTO affects the macro environment of logistics by shifting more production to Russia, increasing the movement of raw materials, work in progress, and creating opportunities for advanced logistic services [...] Increased competition in logistics will push down costs and make exports more competitive.” (Leung & Foster, 2007, p.248). Experts agree that the Russia's accession to the WTO will have a positive impact on the Russian economy in the long run. It will stimulate trade and investment, encourage competition on the domestic market and create a clear international legal framework in the field of foreign trade regulation. This will result in a more favourable climate

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15 “The food sector and light industry are the aggregate sectors with the highest tariff rates— their tariff rates in 2005 were 23.1 percent and 19.5 percent on a trade-weighted basis. At the two digit level, motor vehicles, footwear, leather products and sugar are among the most highly protected.” (Tarr, 2007, p.5)
for foreign investments as a result of legal system change in accordance with the WTO standards (WTO, 2007).

A lot of studies\textsuperscript{16} have been performed to numerically assess the consequences for Russia of WTO accession, investigating the likely impacts on wages, returns to capital, output, exports and imports etc. A summary of some fundamental macroeconomic impacts can be found in appendix 3. These studies indicate that Russia will reap substantial gains from WTO accession, the benefits are widespread and will reduce poverty (Tarr, 2007). This reduction in poverty and other advantages will consequently be beneficial for foreign investors, operating in Russia.

Russia will gain most from the liberalization of the services sectors. The impact of changes in the import tariff regime will be limited. This is caused by the not more than average reduction in duties and the transition period before the change will actually become effective (supra). In a study of Rutherford and Tarr, investigating the impact of Russian WTO membership on households, the following conclusions were made:
- the mean welfare gains to Russia, averaged over all households, from WTO accession are a rather substantial 7.3\% of Russian consumption in the medium run;
- over 70\% of the gains are due to the liberalization of barriers against foreign investors in services (Rutherford & Tarr, 2008).

The interviews taught us to be critical about future prospects for accession. According to Mr. Beyens (Inbev) timing of WTO accession is hard estimate because Russia faces a dilemma. On the one hand they are a part of the world economy and should be able to participate in negotiations on international trade agreements. On the other hand they think they are large and powerful enough to stay independent and do not need the other countries. They also would have to make a lot of adjustments and are afraid they will lose power over their neighbouring countries if they have to stick to the rules.

Prof. Schoors pointed out that not accessing would be disadvantageous for Russia in the long run because technology and know-how are kept out, the banking sector will not develop and they cannot institute legal procedures against unjust practices from other countries. At present the USA and Eastern European countries are obstructing Russia's membership. But the question that remains if of course is Russia itself willing to join the rest of the world.

\textsuperscript{16} Versions of all these studies are available at www.worldbank.org/trade/russia-wto.
The advantages of WTO membership for foreign direct investors doing business in Russia can be summarized as follows:

- Importing goods into Russia will become more lucrative because of lowered import tariffs. The effect will only take place in the long run because of a transition period of one to seven years.
- Regulations on foreign investment in the services sectors (insurance, banking and securities, telecommunications, business and distribution services) will become much less rigid. This brings along a lot of opportunities for FDI in these sectors and is likely to improve the access to capital for both domestic and foreign companies.
- The Russian legal system will be adapted to WTO standards, making the business climate more opportune for foreign companies.
- The positive impact of accession on the Russian economy in the long run, will force wages up and thus create new customers and increase the consumption rate.

### 3. Financial Challenges

#### 3.2. Banking system

Russia’s weak banking system is a major barrier to creating a strong business climate. It has developed from the centralized system of the Soviet period into a two-tier system. The first tier is represented by state-owned banks, the second tier by private commercial banks. The number of operating credit institutions was in decline for the third consecutive year, falling from 1,189 in 2006 to 1,136 in 2007. The Russian banking system is highly concentrated at the top and very fragmented in the middle and bottom. The share of the top 200 credit institutions in terms of assets amounts to 91.6% of the total assets in the banking sector (Central Bank of the Russian Federation, 2008). The financial crisis will be a great opportunity for the consolidation of the banking sector (Lehman, 2009).

Due to the weak banking system only 4% of the Russians trusts commercial banks (Russian Public Opinion State Centre, 2007). Consequently individuals prefer to keep their surplus funds in cash at home or spend it. If they do trust the banking sector they put their money either on an account in a foreign bank or a state savings bank, which offers more security (PWC, 2004). The fact that the household deposits are the equivalent of some 17% of GDP, compared with 45% in the U.S. confirms this anew (Bush, 2008).
The latest years the government made a lot of efforts to strengthen the confidence in the Russian banking system and making it more reliable through the introduction of the Deposit Insurance System, cooperation with international financial institutions, etc.

The importance of the banking sector for the Russian economy continues to grow. Nevertheless, the strongest growth was registered in banks with government interest and banks controlled by foreign capital (Central Bank of the Russian Federation, 2008).

3.3. Capital sources

In an economy that is expanding quickly, the financing needs of firms are rising rapidly. But due to the weak banking system there is a lack of financial sources. Larger firms use a variety of capital-market sources for financial growth, some even carried out Initial Public Offerings (IPOs). On the contrary corporate finance is still underdeveloped among smaller Russian firms compared to Western firms. In general, most investment are still financed by retained earnings (Economist Intelligence Unit, 2007). The capital sources available are the following:

- **Short term capital:**
  - Most bank lending is still short term, although loans may be renewed repeatedly. Loans have typically fixed rates.
  - The average maturity of commercial paper is slowly lengthening, and investors are looking for holding the higher-quality bonds for longer than one year.
  - Intercompany loans were an important source of finance for Western multinationals, but its use of it is decreasing.
  - The factoring market focuses mainly on domestic transactions, although export and import factoring is available. A weak legal regulation and market infrastructure constrain the development of the factoring market.
  - Supplier credit is used mainly for equipment import.

(Economist Intelligence Unit, 2007)

- **Medium and long-term capital:**
  - The use of bond issues is increasing significantly.
  - The leasing market is still small compared to developed markets, but Western leasing companies are looking for entering the Russian market.
  - Mortgage lending is growing fast although it is still underdeveloped compared to Western standards.
International financial institutions are very popular because they offer better credit terms than the markets, but procedures for loan approvals are time-consuming. (Economist Intelligence Unit, 2007)

Although short-term financing still dominates, medium term financing is becoming more common, but long term financing is still rare. Sources like venture capital are extremely rare and the stock market is immature (Economist Intelligence Unit, 2007).

To indicate the difficulty of getting credit in Russia, the International Finance Corporation (IFC) developed two sets of indicators, one on credit information sharing and the other on legal rights of borrowers and lenders. The Legal Rights Index ranges from 0-10, with high scores indicating that laws to expand access to credit are well designed. It measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending. The Credit Information Index measures the scope, access and quality of credit information available through public registries or private bureaus. It ranges from 0-6, with high values indicating that sufficient credit information is available from a public registry or private bureau (Doing Business, 2009).

**Table 14. Overview Credit Information Index and Legal Rights Index (2007-2009)**

<table>
<thead>
<tr>
<th></th>
<th>Russia 2007</th>
<th>Russia 2008</th>
<th>Russia 2009</th>
<th>Brazil</th>
<th>China</th>
<th>India</th>
<th>Good Practice Economies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legal Rights Index</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Credit Information Index</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>5</td>
<td>4</td>
<td>4</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Adopted from Doing Business 2009

As you can see in the table above Russia is scoring poorly on both indices, but did make some improvements last year. Compared to the other BRIC countries Russia ranks last. Mr. Beyens (Inbev) states that due to the underdevelopment of the banking system, service levels are low and processes are long, even to get a small loan.

The absence of long term loans, high interest rates, lack of venture capital, an underdeveloped stock market and shortage of credit information and legal rights makes it hard to find financial sources. To finance their activities companies fall back on their own funds, family, work contacts, friends and only on the fifth place on banks as you can see in Figure 12.

Mr. Leyman (Vergokan) recommends to work with an international bank instead of local banks. In this way Vergokan has better control over its money.
Figure 12. Sources of funding

Note: percentages add up to more than 100% since respondents could choose more than one category.
Source: Aidis & Estrin, 2006

3.4. Financial crisis 2008

In August 2008 the financial crisis started affecting Russia, contrary to what was expected a few months earlier. The reason why Russia was seen as a safe heaven was the high level of oil prices. As Evgeny Nadorshin, chief economist at Trust Investment Bank in Moscow said: “The current situation is very serious, a few months ago we thought that we could look forward to a calm life, but now we have lost our advantage and are in the same boat as everybody else.” (Bush, 2008).

This turn was caused by some vulnerabilities in the macro-economical and structural background of Russia: dependence on the oil and gas sector, lack of a solid industrial base, shortage of SMEs, volatility of private capital in- and outflows (Barisitz, 2009) and the dependence of many banks on foreign borrowing (Bogetic, 2009).

In response to the crisis the Central Bank of Russia (CBR) allowed a 30% drop in the rouble between November 2008 and February 2009 (Barisitz, 2009). GDP is likely to contract in 2009 by 4.5% which is already indicated by the drop in industrial production growth with 16% y-o-y in January and 13% in February 2009 (World Bank, 2009a). Fortunately Russia can fall back on large reserves, higher than the internationally recommended 2% of GDP, and was able to react proactive. However, the policy of the CBR focused mainly on supporting the financial sector and enterprises (World Bank, 2009a). “Future policy response will have to be more selective, cushioning the impact on the vulnerable, addressing the most critical infrastructure bottlenecks, and supporting small and medium size enterprises.” (World Bank, 2009a, p.1). In the future it will also be important to diversify the Russian
economy and to continue integration into the global economy (WTO accession) to achieve long term growth (Bogetic, 2009).

All the interviewees noticed a decline in their sales due to decreasing purchasing power caused by the rouble depreciation. Domo was aware of this and reacted by organizing an event to sell their carpets to wholesalers at a discount price early in the season. The crisis also has a positive influence. Staff churn, transport and warehouse prices decreased significantly. Mr. Beyens (Inbev) expects that Russia will recover from this crisis faster than European countries because Russians like to spend money and have the will to move on. If gas and oil prices start to increase, the Russian economy will quickly recover.

Russia has a weak banking system which is manifested in the following facts:
- State owned banks dominate the market.
- Due to lack of trust in commercial banks, household saving is low.
- There is low availability of long-term capital causing companies to rely on retained earnings for their investments.
- Shortage on credit information and legal rights makes it hard to find financial sources.

The financial crisis also affected Russia, but thanks to their will to move on, spending behaviour and the anew increase of oil and gas prices they can recover quickly. However, they should diversify their economy and not only depend on their natural resources, to prevent another recession.
Chapter 4. Focus: Retail Sector

The retail market is one of the fastest growing sectors in Russia. As retail is generally known as the main driver of logistics and good retail services go hand in hand with proper supply chain management, it is interesting to take a closer look into this sector. First, the market and its main characteristics are analyzed. Next, retail challenges and their influence on the supply chain, are mapped into a framework. Furthermore, the latest trends in the retail market are described.

1. Characteristics of the Retail Market

In this section, the retail market and its main characteristics are discussed, the recent growth of the Russian retail market, the main drivers behind this growth and the future potential. Furthermore, the degree of underdevelopment and level of fragmentation are studied.

1.1. Growth

First of all, we discuss the retail growth of the last years in Russia and the main drivers behind it. According to the Economist Intelligence Unit, Russia was the 12th largest retail market in the world in 2006 and the 6th largest in Europe (Jones Lang LaSalle, 2008). The Russian retail trade turnover amounted RUB 8.6 trillion (USD 316 billion or EUR 251 billion) in 2006 (Szaleniec & Lucas, 2007) and grew with 13% in 2008 (UNESCAP, 2009). In 2009 a growth of 4% is expected by analysts of Reuters (Reuters, 2009).

![Figure 13. Retail sales in Russia (Rub tr) and yearly growth (%), 2005-2008](Source: PMR Publications, Retail in Russia 2008)
In January 2009 the retail sales growth plummeted to 2.4% y-o-y down from 4.8% in December 2008, compared to a growth rate of 16.2% in January 2008. Emerging Europe Monitor expects the consuming sector to continue struggling from tightening credit conditions, rising unemployment and declining wage growth (Emerging Europe Monitor, 2009).

According to Volgina (2006) the growth of the retail market, notwithstanding negative influence of the economic crisis, is mainly driven by four factors: (1) the favourable macroeconomic situation and stable economic growth, (2) increase in real disposable income, (3) intensive development of consumer credit, and (4) the vast geographic territory (Volgina, 2008). A fifth factor can be added, namely the unleashed consumerism of the Russians. Russians spend a large proportion of their income (92%) on buying rather than saving, which stimulates the growth of retailers (Woodger, 2008). However, it is important to be critical and aware of the diminishing population size which could have a negative impact on retail growth.

Russia's attractiveness is confirmed by two indices. A.T. Kearney’s global retail development Index (GRDI), representing the attractiveness of investing in the retail sector, ranks Russia on the third place, which illustrates that Russia is a high speed market. Appendix 4 maps Russia and other emerging markets in a window of opportunity analysis. GDRI scores are based on the following four variables: country risk (25%), market attractiveness (25%), market saturation (30%) and time pressure (20%). Russia moved from the peaking to the declining stage in 2008 (A.T. Kearney, 2008). A second indicator is the Country PMR retail attractiveness Index in which Russia is ranked on the first place out of the central and eastern European markets in 2007 (Szaleniec, 2008).

1.2. Underdevelopment of the market

The Russian market is still dominated by traditional channels like open-air markets, kiosks and small mom & pop grocery stores. The share of modern self-service formats was about 25% in 2006. Fortunately for retail chains, there is an emerging and growing middle class looking for more comfort, quality and safety when shopping. It is expected that by 2010 the share of the self-service formats will reach around 50% (Figure 14) (PWC, 2008).
1.3. Fragmentation of the market

A third important characteristic of the Russian retail and in particular the food market is the high level of fragmentation. The top-five retailers' share of national retail sales amounts 13.3% as you can see in Table 15 (Planet Retail, 2008). Compared to the rates of the UK and Germany, where the top four accounts for 85% and 80% of the market, fragmentation is extremely high (PWC, 2008). This caused by the fact that most of the retail investment are focused on Moscow, St. Petersburg and the Millionniki (Planet Retail, 2008). Given the geographical size of Russia, the variation in local conditions, and the huge amount of resources that are required to undertake large scale expansion into the regions, the chance that the concentration level will reach Western standards is rather small (Hanf & Belaya, 2008). The Russian market can be best compared with the USA, where the top five retailers capture around 30% market share (Planet Retail, 2008). In the future, consolidation is likely when large chains will expand through acquisition, as already happened in 2006 with the merger of two major retail players Pyaterochka and Perekryostok and formation of X5, Russia's largest retail chain (PWC, 2008). The current financial crisis however, will have a huge impact. The consolidation rate is expected to increase. Some retailers, encountering severe problems with sustaining their business, will be potential targets for acquisition (Datamonitor, 2009).
2. Challenges Influencing Supply Chain Management

As in every sector in development there are still a lot of challenges. A framework for supply chain management is used here to structure the challenges described in the literature and their influence on the supply chain. This is similar to the SCOR model but with slightly different phases (plan-source-move-fulfil-store)\textsuperscript{17} which are more suitable for retail. The fulfil phase is left out because no specific challenges exist here.

2.1. Plan

A lot of challenges make planning the supply chain more difficult than in Western countries for retailers. The challenges described in the planning phase the SCOR model, chapter 2, also apply to retailers (administrative barrier, importance of social networks, legislation, HRM, forecasting) but some specific barriers exist.

3.2.1. Growing competition

The level of competition varies between regions, most competitive are the regions around Moscow and St. Petersburg where most of the largest retail chains are present. The high level of competition became an important challenge for retailers according to the retailers' survey of PWC. It makes it harder to gain customers, find good locations, retail space and qualified staff especially in regions where labour market growth rates do not meet the retail market's rapid development (PWC, 2008).

\textsuperscript{17} http://www.supplychainconsortium.com/Framework/Framework_Display.asp?ID=3

Table 15. Top 5 grocery retailers, 2008

<table>
<thead>
<tr>
<th>Company</th>
<th>No. of stores</th>
<th>Market Share (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X5 Retail Group</td>
<td>1,868</td>
<td>4.3</td>
</tr>
<tr>
<td>Magnit</td>
<td>2,32</td>
<td>3.1</td>
</tr>
<tr>
<td>Metro Group</td>
<td>73</td>
<td>2.5</td>
</tr>
<tr>
<td>Auchan</td>
<td>58</td>
<td>2.3</td>
</tr>
<tr>
<td>Dixi</td>
<td>460</td>
<td>1.1</td>
</tr>
<tr>
<td><strong>Sub Total</strong></td>
<td><strong>4,779</strong></td>
<td><strong>13.3</strong></td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td><strong>86.7</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Source: Planet Retail, 2008
3.2.1. Stock management

Another concern of most of the retailers is the high out of stock rate, due to poor supplier service. Out of shelf percentage in Russia amounts 17.7% compared to 7.9% in North America and 8.6% in the European Union. (Figure 15)

This low rate of product availability was never a big issue for the Russians, as shown in Figure 16. But this causes a loss for the manufacturer in 46% (37% + 9%) of the cases and for the retailer in 30% (21% + 9%) of the out of stocks (Rivet, 2006). Adding the fact that the Russian expectations resemble more and more to Western standards, shelf availability will become a crucial challenge.

To improve product availability stores have to focus on logistic issues like replenishment, merchandising, clear visibility of stocks and ordering systems (Rivet, 2006). Another solution is the
implementation of centralized logistics by retailers. To improve their stock management and optimize costs they will have to build their own distribution centres and organize own transportation systems (PWC, 2008).

3.2.1. Strategic network issues

Due to the expansion of retailers into and increase of trade flow across the Russian regions, the demand for efficient supply chains rises and logistics changes from logistic points (Figure 17) into logistic chains (Figure 18) as shown in the pictures below (Rivet, 2006). As more point of demand arise organizing the supply chain will become more complex.

In the future, the growth of the logistics network will go hand in hand with a rising need for cross docking and consolidation centres, which will be an insurmountable challenge. Cross-docking could decrease the number of transactions between suppliers and stores and allows to ship smaller quantities (Rivet, 2006). Until today cross docking facilities are still underdeveloped (Weidmann, 2008).

Figure 17. Logistic Points in Russia until 2005

Source: Rivet, 2006
3.2.1. Complexity of the market

The latest trends in the retail market increase the complexity of logistics. Due to rising wages and the consumerism of Russians the amount of convenient stores and hypermarkets is growing. The multiplicity of the different formats involves complexity of logistics. It causes a mix of van and train deliveries, fresh and dry product chains, pallet picks and unit picks. These differences become clear when comparing the hypermarkets with the convenient stores (Rivet, 2006).

One hypermarket has 700 to 1,500 suppliers, 100 to 250 orders a day and up to 50,000 Stock Keeping Units (SKUs). Due to a growing amount of supermarkets in Russia, an explosion of the quantity of SKUs to manage and consolidation of volumes is expected (Rivet, 2006).

A convenient store on the other hand has 150 to 450 suppliers, 40 to 100 orders a day and up to 10,000 SKUs. High speed and high quality deliveries are increasingly important as their market share grows. The logistic network will be characterized by ‘capillarization’, diffusion and bifurcation of the network, due to the need for small deliveries and a high mix of products (Rivet, 2006).

To manage complexity, new technologies will be needed. Hardware technologies, like radio scanners, RFID and automatization will be useful to manage the supply chain. Also warehouse management systems, Transportation Management Systems\(^{18}\) and Electronic Data Interchange (Infra) will become

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\(^{18}\) A Transportation Management System (TMS) is a software system designed to manage transportation operations. TMS is one of the systems managing the supply chain.
more important (Rivet, 2006). Interviewees however, stated that it will take a very long time before these technologies will be implemented in Russia.

2.2. Source

In this step problems that occur with procurement of goods and services are discussed, such as supplier selection, collaboration between retailers and supplier, buying groups and customs obstructing good supply chain management.

3.2.1. Supplier selection

Trying to find a reliable and good supplier is a great challenge for most of the retailers. In the past, Russian suppliers were so powerful they could impose their rules to domestic retailers. However, with the arrival of international retailers, rules are changing. International players stick to their own business models, hence expect from their suppliers to meet the retailers global requirements for food quality, safety and delivery terms (Hanf & Belaya, 2008). The negotiation power of retailers is increasing. First of all, the introduction of private label products gives them more control and power in price negotiations. Secondly, the growth of buying groups gives the opportunity to negotiate lower prices. Thirdly, retailers can offer suppliers the opportunity to sell their products in other regions, if they agree to lower prices. Suppliers still have some negotiation power if they have a well-known brand where customers ask for and a good distribution network, which is interesting for retailers (Louhivuori, 2005).

In the beginning, when retailers started entering Russia, some of them took their home suppliers with them abroad. For example, when Metro entered the Russian retail markets, Hochland AG, one of the largest manufacturers and refiners of cheese in Europe, went with them. But after a while local suppliers started competing with these Western suppliers as they reached the same level of quality and process management standards but do not have to deal with the negative consequences of importing, like taxes and customs (Hanf & Belaya, 2008). In addition to this, customers prefer domestic food products because they are considered to be healthier than the imported ones. However, this is only the case in food products. Consumer durables and electronics on the other hand have more prestige and are considered to be from higher value if they are Western branded (Louhivuori, 2005).
3.2.1. Collaboration between retailer and manufacturer

Until now, information sharing is not really common in the Russian retail market. PWC conducted an internet survey of the RusBrand members and investigated the level of collaboration and the four main causes of lack of collaboration: (1) until recently retailers mainly invested in growth and did not mind about efficiency and collaboration, (2) there is a lack of IT systems, (3) management is inexperienced as the sector is in its early stage of development, (4) due to wrong KPIs even internal functions do not collaborate and have conflicts of interest (Peeters, 2008).

In the future, collaboration will become more important for several reasons. First of all, the growth of the retail sector will increase the need for cross docking and consolidation centres. As a result of adding these additional stages in the chain, risk of the bullwhip effect will increase (Rivet, 2006). According to Peeters (2008), better collaboration will also be necessary for three reasons: to become more efficient (as the margins will be under pressure in the future), to be able to grow (as the growth from roll out will slow down) and because the current level of collaboration does not satisfy the retailers nor the suppliers (Peeters, 2008).

If retailers want their suppliers to share information, they will have to motivate them to invest in IT and technology infrastructure. Incentives for cooperation can consist of an opportunity to grow, better reputation, prompt payment from the supplier, etc. (Hanf & Belaya, 2008). The use of Electronic Data Interchange (EDI) is still on a low level but is improving, especially due to investments of ECR-Rus. (Figure 19) “This innovation lets the companies to reduce the interaction costs, to improve the quality of documents, helps to save money and avoid a lot of ‘paper work’.“ (ECR-Rus, 2008, p.12).

![Figure 19. Amount of EDI Users - EDI development in Russia](source: www.ecr-rus.ru, ECR-Rus Scorecard Survey 2008)

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19 RusBrand, the non-profit partnership «Association of Branded Goods Manufacturers» in Russia

20 ECR-Rus is a part of ECR-Europe which is a joint trade and industry body, launched in 1994 to make the grocery sector as a whole more responsive to consumer demand and promote the removal of unnecessary costs from the supply chain
3.2.1. Buying groups

Buying groups are defined as “buying cooperations of independent retailers, cooperatives or symbol groups on a national or international level” (Planet Retail21). In the literature, some contradicting views on this topic exist. According to Planet Retail (2008) buying groups do not exist at this moment: “As a highly professional food retail sector is still in the process of creation, competition in most areas of the country is so weak that no significant buying group has been founded so far.” (Planet Retail, 2008, p.13). On the contrary, Louhivuori (2006) does discuss the development of purchasing alliances. These were founded to cut down the purchasing costs of goods by using the common negotiation power of the alliance towards the food manufacturers. To solve this difference in opinion, the advice of some experts was obtained. Luc de Jong, CEO (interim) of a food retail start up in Moscow, was working together with four food retail chains in the start up of the first Russian buying alliance. Since the outbreak of the credit crisis just before the founding meeting it is unfortunately still ‘to be’. He told us about one more initiative that is made by independent small retailers with geographical exclusivity. “It is really oriented at the very small retailers. The nice part is that they are working more or less successfully for a couple of years on best practice sharing and just starting joint buying since some months now.” (Interview with de Jong, 2009) Further development of buying groups would make sourcing easier for retailers.

2.3. Move

The movement of goods is obviously an important phase in retail. Two main problems impede an easy course of the movement.

3.2.1. Transport

Due to the vastness of Russia, minimizing transport cost is essential for retailers to stay competitive. As already explained in chapter 2 section 4.1., transport infrastructure is still limited and is therefore one of the main challenges for retailers for whom transport forms an important part of their supply chain (Planet Retail, 2008). As retailers are expanding into the regions the transport cost will increase and it will be even more important to minimize that cost.

3.2.1. Fragmentation and decentralisation of the distribution system

The market of distributors is highly fragmented in Russia (see chapter 2 section 4.3.) and retailers will have to work with a large amount of small distributors, which increases complexity. As wholesalers are highly specialised in one product, one retailer will need a large amount of suppliers. Moreover,

21 www.planetretail.com
small distributors do not have the necessary technology and developed product flow system therefore problems will arise with their delivery times and quality of products (Kaipio & Leppänen, 2005).

2.4. Store

In the retail sector, warehousing and distribution centres are important and indispensable links in the retailer’s supply chain. As already described in chapter 2 section 4.2., the lack of warehouse facilities is a major challenge. Retailers are trying to overcome this barrier by building their own warehouses (PWC, 2008).

3. Trends in the Retail Market

Some trends are occurring in the retail market these days. Lately more retailers are introducing private labels which increases their share in the market turnover and bargaining power towards suppliers. Loyalty programmes are shifting their focus from discounts to permanent loyalty-loyalty building arrangements but Customer Relationship Management (CRM), that monitors customer loyalty and segment customer preferences, are not well developed. Corporate Social Responsibility (CSR) is only applied internally, but companies rarely extend monitoring of health, safety and workplace conditions throughout the supply chain (PWC, 2008). E-retail is especially located in Moscow and St. Petersburg. Factors that restrain the growth of e-commerce are poor telecommunications infrastructure, an underdeveloped banking system, an uncertain legal environment (Economist Intelligence Unit Limited, 2007) and lack of trust among consumers (Atkins-Krüger, 2009). Finally, expansion into the regions is noticed and will be explained in the next section.

4. Regions

Until recently, the two main focus areas of retail were Moscow and St. Petersburg. Since these markets are getting saturated, retailers are starting to target the ‘Millonniki’, which are the eleven lesser known ‘secondary’ cities with a population of 1 to 1.5 million (Jones Lang LaSalle, 2007). The expansion into the regions occurs gradually from the west to the east.

4.1. Opportunities

First of all, the regions are attractive due to their large catchment area, which is the geographic area from which a customer is prepared to travel to reach a retailer. This is the result of low local density
of retail chains (PWC, 2008). This is reflected in the retail potential index developed by Jones Lang Lasalle (Figure 20).

“[Secondly], in the regions there is an availability of freehold titles to land, and attractive incentives are offered by local governments.” (Jones Lang LaSalle, 2007, p.8). Next, the income difference between Moscow and the Millionniki are decreasing. Fourth, consumers in the Millionniki spend on average 72% to 88% of their income on consumer goods and are more and more buying higher quality goods (Table 16) (Jones Lang LaSalle, 2007).

![Figure 20. The Millionniki Retail Potential Index](image)

“[Secondly], in the regions there is an availability of freehold titles to land, and attractive incentives are offered by local governments.” (Jones Lang LaSalle, 2007, p.8). Next, the income difference between Moscow and the Millionniki are decreasing. Fourth, consumers in the Millionniki spend on average 72% to 88% of their income on consumer goods and are more and more buying higher quality goods (Table 16) (Jones Lang LaSalle, 2007).

### Table 16. Purchasing Potential in the Millionniki

<table>
<thead>
<tr>
<th>City</th>
<th>Personal Income in US$</th>
<th>Retail Expenditure Share of Personal Income in %</th>
<th>Estimated Retail Expenditure per Capita in USD $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moscow</td>
<td>10.558</td>
<td>72.3</td>
<td>7.633</td>
</tr>
<tr>
<td>St. Petersburg</td>
<td>4.830</td>
<td>63.4</td>
<td>3.062</td>
</tr>
<tr>
<td>Samara</td>
<td>4.526</td>
<td>83.4</td>
<td>3.774</td>
</tr>
<tr>
<td>Perm</td>
<td>4.062</td>
<td>64.0</td>
<td>2.599</td>
</tr>
<tr>
<td>Yekaterinburg</td>
<td>4.057</td>
<td>67.0</td>
<td>2.718</td>
</tr>
<tr>
<td>Ufa</td>
<td>4.016</td>
<td>73.5</td>
<td>2.951</td>
</tr>
<tr>
<td>Omsk</td>
<td>3.711</td>
<td>65.9</td>
<td>2.445</td>
</tr>
<tr>
<td>Rostov-On-Don</td>
<td>3.408</td>
<td>75.0</td>
<td>2.556</td>
</tr>
<tr>
<td>Novosibirsk</td>
<td>3.402</td>
<td>88.5</td>
<td>3.010</td>
</tr>
<tr>
<td>Kazan</td>
<td>3.142</td>
<td>68.6</td>
<td>2.155</td>
</tr>
<tr>
<td>Nizhniy Novgorod</td>
<td>3.117</td>
<td>72.1</td>
<td>2.247</td>
</tr>
<tr>
<td>Chelyabinsk</td>
<td>3.025</td>
<td>67.2</td>
<td>2.033</td>
</tr>
<tr>
<td>Volgograd</td>
<td>2.800</td>
<td>72.3</td>
<td>2.024</td>
</tr>
<tr>
<td><strong>Average in Millionniki</strong></td>
<td><strong>3.570</strong></td>
<td><strong>72.5</strong></td>
<td><strong>2.592</strong></td>
</tr>
</tbody>
</table>

*Source: Rosstat, 2006*
Finally, competition is lower in the regions since most retailers target Moscow and St. Petersburg (Machnicka, 2009). As you can see in the figure below most of the cities are undersupplied. When cities are located on the dotted line, their supply and demand are balanced. Besides Kazan every regional city is plotted above the line, which means that they are undersupplied (Jones Lang LaSalle, 2007).

![Figure 21. Existing Stock Vs Market Size](image)

Source: Jones Lang LaSalle

There are a lot of opportunities, which are of course noticed by companies as well: “One third of Russia’s retail investment transactions in 2006 were recorded in the Millionniki”. (Jones Lang LaSalle, 2007, p.8).

### 4.2. Challenges

The main restrictions for retailers in the regions are land plots that quickly become expensive, a lack of sophisticated consumers, potential saturation (as several competitors enter the market), an incomplete retail gallery mix, lack of good logistic infrastructure, limited offer for project financing, and a less qualified labour force. (Pantyushin, 2007)
5. Conclusion

Consolidation of the retail market is expected and the current economic crisis will only accelerate this. As retailers will have to handle even larger volumes in the future and competition will become fierce, supply chain management will gain importance. The main challenges discussed in chapter two also threaten retailers but some of them need extra attention.

The planning phase is difficult and time consuming. Therefore retailers need a good preparation before entering the Russian market. Social networks are a sine qua non as retailers need to buy land for expansion. Another important challenge is the high out of stock level. Better collaboration between suppliers and manufacturers, more reliable delivery times and good IT-registration of stocks can improve the on stock availability. Finally, the design of the supply chain network will become more complex given the large amount of suppliers, the expansion into the regions and the rise of mergers and acquisitions.

In the sourcing phase, it is important to realize that consumers in the food sector prefer Russian products to foreign ones, which is the opposite in the other sectors. Another important topic is buying groups: smaller retailers join buying groups to compete against large distribution chains to get the same volume discounts.

Due to the huge benefit of Just-In-Time (JIT) deliveries, the transport phase in supply chain will become more important for suppliers and retailers, but as long as transport infrastructure is underdeveloped and the distributor market is fragmented, JIT is not an option.

Too many problems are thwarting good supply chain management, but more and more retailers are paying attention to it as the future benefits are enormous.
Chapter 5. Focus: Automotive Industry

The Russian automotive industry is a second fast growing market in which the importance of good supply chain management is increasingly imperative. On top of that, it is an interesting topic to study because it gives an indication of the state of the manufacturing sector and the maturity of the consumer society. In monetary terms, the auto industry covers 30% of the mechanical engineering of the country. It compiles outputs of metals, chemicals and other productions within the mechanical engineering sector (Berezinskaya, 2006). The scope of this study will be limited to the passenger car industry. However, many of the challenges also apply to light commercial vehicles, trucks and busses. The production volumes of these categories are nevertheless significantly smaller (Krkoska & Spencer, 2008).

1. Evolution of the Automotive Industry in Russia

Only a few years ago, Russia’s automotive industry solely manufactured Russian brand cars. Since 2001 however, the industry went through many restructurings after it realised it was not able to compete on a large scale with foreign brands on the Russian market. The main problem was that because of the inferior Russian manufacturing models local brands were based on, their prices grew much faster than their quality. In order to protect the industry, the government introduced measures, such as increased customs duties. This increase even went up with one to two thousand dollars per imported automobile. However, the number of local cars manufactured and sold kept dropping because of their high prices and low quality. Other aspects underlying increased purchases of foreign brand cars were growth in household incomes starting from 2004, an expansion of auto credits granted and a narrowing price gap between local and reasonable priced foreign brands because of rouble appreciation. Since steep real estate prices limited the option to improve the lifestyle through investment in housing, Russian consumers saw the purchase of a good car as a viable alternative (Berezinskaya, 2006).

The Russian Government realized that their automotive industry could not be revitalized by any reasonable measures, so in March 2005 they signed a resolution\textsuperscript{22} which resulted in close to duty-free import of automotive components. Foreign brand automobiles that were a joint product of both Russian and foreign producers were now seen as ‘home-friendly’. As a result, locally manufactured foreign brand cars became the driving force of modernization and output increase of the Russian

\textsuperscript{22} Government Resolution No. 166 “On introducing changes to the RF customs tariff with respect to auto-components imported for industrial assemblage”
For many Russian car manufacturers, 2005 was a turning point in which they seriously reconsidered their production strategy. Automobile plants stopped the production of certain models and retooled the vacant production lines to assemble foreign brand models. Russian car manufacturers started to search for viable manufacturing technologies, in partnership with the world leading car producers. These trends led to a decrease of 3.8% in 2005 with regard to 2004 in output of Russian brand cars (Berezinskaya, 2006). The table below shows the evolution in the automotive market through the restructurings.

Table 17. Automobile Manufacturing and Sales in Russia (2001–2006), in thousands of units

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Automobile manufacturing in Russia</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Russian brand cars</strong></td>
<td>1022</td>
<td>981</td>
<td>1011</td>
<td>1110</td>
<td>1068</td>
<td>1154</td>
</tr>
<tr>
<td>AvtoVAZ</td>
<td>1017</td>
<td>971</td>
<td>954</td>
<td>977</td>
<td>907</td>
<td>902</td>
</tr>
<tr>
<td>GAZ</td>
<td>768</td>
<td>703</td>
<td>700</td>
<td>718</td>
<td>721</td>
<td>755</td>
</tr>
<tr>
<td><strong>Other car manufacturers</strong></td>
<td>81</td>
<td>66</td>
<td>57</td>
<td>56</td>
<td>52</td>
<td>53</td>
</tr>
<tr>
<td><strong>Foreign brand cars assembled in Russia</strong></td>
<td>168</td>
<td>202</td>
<td>197</td>
<td>193</td>
<td>134</td>
<td>94</td>
</tr>
<tr>
<td><strong>Exports of automobiles assembled in Russia</strong></td>
<td>5</td>
<td>10</td>
<td>57</td>
<td>133</td>
<td>161</td>
<td>252</td>
</tr>
<tr>
<td><strong>Sales of automobiles assembled in Russia on the domestic market</strong></td>
<td>99</td>
<td>116</td>
<td>114</td>
<td>126</td>
<td>125</td>
<td>123</td>
</tr>
<tr>
<td><strong>Russian brand cars</strong></td>
<td>923</td>
<td>865</td>
<td>897</td>
<td>984</td>
<td>943</td>
<td>1032</td>
</tr>
<tr>
<td><strong>Foreign brand cars assembled in Russia</strong></td>
<td>918</td>
<td>855</td>
<td>840</td>
<td>852</td>
<td>788</td>
<td>786</td>
</tr>
</tbody>
</table>


Both the import and assembly of foreign brand cars are catalysts of the Russian auto market growth. Prior to 2005, imported second-hand cars were the main competitors of local brands. Today, they still dominate a notable niche of the market. Simultaneously, Russian models sales are dropping bit by bit (Berezinskaya, 2006). Sales of foreign brand cars are expected to outreach sales of Russian brand cars by 2012 (Automotive Logistics Russia, 2008).

Since North American and Western European automotive markets are experiencing stagnation, the booming Russian market is very attractive for foreign car brand manufacturers. Especially since the Russian car market is still far from saturation. The mean age of cars owned by consumers is relatively high (half of the cars are over 10 years) and the car density is low compared to other emerging economies (Ernst & Young, 2007). Russia has thirteen cities with over one million inhabitants with a tangible middle class, where already many multi-brand car dealerships have set up their business. The new trend now is to expand to smaller cities with roughly 250,000 residents (Tremblay, 2007).
2. Competitive Landscape

To evaluate the competitive intensity of the Russian automotive industry and therefore the attractiveness of the market, Datamonitor performed a Porter five forces analysis on the Russian car market. This framework consists of five forces affecting market players operating in a certain market, as summarised in the figure below.

**Figure 22. Porter’s five forces**

- **The bargaining power of buyers.**
  Although Russian car buyers are price sensitive and switching costs are low, car manufacturers have invested in brand building, weakening the buyer power. Motives for this is the large variety of manufacturers and high level of product differentiation, leading to a high level of choice for consumers. The market can be defined as a polyopsony, “with a large volume of vehicles being sold to an equally large number of consumers”. This further reduces buyer power. The overall level of bargaining power of buyers can be described as moderate (Datamonitor, 2008, p.13).

- **The bargaining power of suppliers.**
  Car manufacturers require both commodity items as more differentiated components as inputs for their processes. Despite low differentiation of raw materials and low switching costs, commodity suppliers have relatively high bargaining power because good quality is of high importance for the manufacture of cars. Furthermore, suppliers typically sell to multiple manufacturers, with each customer only purchasing a small part of the suppliers' total sales. This further strengthens buyer power. Fragmentation on the other hand, resulting from increasing globalisation, decreases supplier...
power. The steel industry by contrast has recently known a trend towards consolidation, in favour of steel supplier (Datamonitor, 2008). In section 3.2, the automotive supplier base is analyzed in more detail.

- **The threat of new entrants.**
  New competitors can enter the market in two ways: by diversifying from existing market players or by entering a geographic market through exportation. The threat of new entrants is rather low because of brand strength and reputation of established companies, which are very important in the industry. In addition, high fixed costs and economies of scale make the entry of new start-up companies rare. However, because of its steep growth rate, the Russian car market is notably more attractive for new entrants than the stagnating markets of North America and Western Europe. By now, most large players are already active in the Russian car market (Datamonitor, 2008).

- **The threat of substitutes.**
  The main substitutes in the new cars market are used cars, public transport and for some electrically powered vehicles. Their main advantages are price, non dependency on fuel price volatility or lower environmental impact. They are on the other hand also often less convenient, reliable or significant as a status symbol. The threat of these substitutes increases considerably because of increased awareness for the environment and the slumbering recession (Datamonitor, 2008).

- **Rivalry among existing competitors.**
  The Russian car market is characterised by high fragmentation and local manufacturers are confronted with continuously increasing competition from foreign competitors. Differentiation on the other hand somewhat decreases rivalry, with segments being formed focussing on different aspects such as luxury, budget, design, etc. In general, rivalry within the Russian new cars market is strong (Datamonitor, 2008).

3. **Challenges Influencing Supply Chain Management**

In Russia, logistics planning has to be handled different from American and European systems because of issues such as problems at customs, lack of infrastructure and long distances. Analogue to the operating procedure in chapter 3, supply chain challenges in the automotive industry are analyzed by use of the SCOR model.
3.1. Plan

Before moving over to commercial activities in Russia, it is important to prepare and get to know the market, its characteristics and size. In that way a company can assess the possible scale of activities and evaluate which offering is most attractive for the market. Therefore, characteristics of the Russian car buyer and car fleet market are studied. Next, factors to consider when planning investments, the timing of entry and location of facilities are summed up.

3.1.1. Buyer characteristics

Traditionally, Russian consumers focussed on price and technical features when buying a new car. Compared to European customers, only a small group took into consideration safety (8%), gasoline consumption (5%) and overall value including service and insurance (5%). On top of that, local brands are characterised by low prices and access to spare parts, which fits into the Russian mentality of repair-it-yourself. However, the trends elaborated in section 1 of this chapter have changed this attitude and increased sales of higher priced foreign brand cars with more elaborate and reliable features (Ernst & Young, 2007).

The Russian car buyer is in general younger than the European one, more likely to be male and twelve times more likely to be a first buyer. He also still has far less income. At the same time, he is very aware of what is offered on developed markets and will demand the same modern features (Tremblay, 2007). An overview of the characteristics is given in the table below.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Russia</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>30</td>
<td>46.7</td>
</tr>
<tr>
<td>Male/Female</td>
<td>84% / 16%</td>
<td>69% / 31%</td>
</tr>
<tr>
<td>Family Size</td>
<td>3.3</td>
<td>2.8</td>
</tr>
<tr>
<td>Married</td>
<td>74%</td>
<td>75%</td>
</tr>
<tr>
<td>One-Car Household</td>
<td>33%</td>
<td>42%</td>
</tr>
<tr>
<td>Two-Car Household</td>
<td>11%</td>
<td>14%</td>
</tr>
<tr>
<td>Average Annual Income</td>
<td>USD 20,800</td>
<td>USD 46,300</td>
</tr>
<tr>
<td>First Car Purchase</td>
<td>12%</td>
<td>1%</td>
</tr>
<tr>
<td>Retired</td>
<td>4%</td>
<td>21%</td>
</tr>
<tr>
<td>Company Cars</td>
<td>48%</td>
<td>33%</td>
</tr>
<tr>
<td>Commuting by Car</td>
<td>77%</td>
<td>70%</td>
</tr>
</tbody>
</table>

Source: AEB (Association of European Businesses)
3.1.2. Lease market

The Russian car fleet lease market faces some specific problems. First of all, Russia is characterised by a high road accident rate. About 10% of all cars in Russia are involved in an accident each year, caused by poor roads and weak law enforcement. A second problem is the slow rate of repair. Although the car fleet market boomed between 2000 and 2006 with a growth rate of 32%, the number of garages available to service these cars has not been able to follow this trend. The discrepancy that arose will only be solved in a few years (Automotive Business Review, 2008).

Despite these problems, the Russian car lease market has known a spectacular growth the past few years. This trend is expected to continue, with an anticipated average annual growth rate of 40% until 2012. The pace of future growth will largely depend on the expansion of foreign direct investment in Russia and the impact of the international financial and economic crisis. Furthermore, the labour market also has a high impact on the growth of the car lease market. Due to high competition, companies are forced to upgrade wages and expand compensation packages with benefits such as company cars (Automotive Business Review, 2008).

3.2. Source

Foreign car producers with manufacturing facilities in Russia have three options in sourcing inputs for their production processes: Russian suppliers, foreign suppliers operating in Russia or importing components from outside Russia. Each of these options have certain challenges and issues concerning quality, availability and delivery reliability. Since international car manufacturers are increasingly investing in assembly facilities, there is a need for both entry of international suppliers and upgrades of potential local suppliers in the Russian car industry (Krkoska & Spencer, 2008). Next, an overview is given of challenges and opportunities when sourcing from Russian or foreign suppliers, or when importing by sea or air. Finally, importing and locally sourcing are weighed against each other for different types of components.

3.2.1. Russian suppliers

Foreign car producers setting up assembly plants in Russia get confronted with a less competitive local supplier base. Causes are lack of competitive technologies, the high level of vertical integration in the car component industry (almost 80%) and low-end equipment (Babiner, 2008). Concerning quality levels, Russian component suppliers are still by far no match for their foreign counterparts. “The common defect measure according to industry standard ISO 16949 is below 70 parts per million (ppm), compared to the Russian industry average of over 1,000 ppm”. There are some positive spill-over effects in which local suppliers catch up with technology from their foreign peers. However,
adopting and applying new technologies and know-how is a long-term process. “Of the 200 Russian component manufacturers over 95% supply Russian Original Equipment Manufacturer (OEMs) only. Less than 5% supply Western OEMs or foreign OEMs with manufacturing activities in Russia. Only 1% has exporting activities.” (Ernst & Young, 2007, p.21).

3.2.2. Foreign suppliers operating in Russia

As a consequence of being confronted with a less competitive supplier base in Russia, foreign automotive manufacturers try to encourage their existing suppliers to follow their lead and start up activities in Russia as well. Currently there is a rather limited presence of foreign component suppliers in Russia and their activities are usually restricted to bulky and lower value added components such as seats, interior components and bumpers (Ernst & Young, 2007). Figure 23 shows the main foreign automotive suppliers present in Russia.

There are two main reasons why international component suppliers are hesitant about starting up facilities in Russia. First of all, international car production still has not taken off in Russia. Car manufacturers are only investing in small assembly lines of less than 100,000 passenger cars per year (Krkoska & Spencer, 2008). “Most foreign automotive suppliers require a good over 200,000 units of car production in order to make an investment economically viable”. (Babiner, 2008, p.11).

Component suppliers need a certain critical mass because producing unique components with expensive tooling and long lead times requires high investments. Secondly, component suppliers are likely to face more challenges than the large international OEMs with regards to both red tape (standards, safety and environmental regulations) and infrastructure constraints (land, logistics capacity and reliability of power supply) (Krkoska & Spencer, 2008).

The expected manufacturing capacity of nearly one million cars per year by 2010 will attract manufacturers of other, volume-critical components such as chassis, clutches and injection systems (Ernst & Young, 2007). In other words, the supplier base is underdeveloped in terms of output and quality, but changes are expected because of the high growth rates of the industry. Once certain economies of scale can be reached, more foreign component manufacturers will be attracted and consequently more spillover effects will occur at local suppliers.
3.2.3. Importing parts and components

Problems at importing parts and components are mainly encountered when crossing the border. As already discussed in chapter 2 section 2.2., delays are a common issue. This section discusses options to consider when importing by sea or air.

- Importing by sea

When importing finished cars or components into Russia, several options exist. Seventy percent of import for the automotive industry passes through gradually becoming overburdened Finnish ports (Krkoska & Spencer, 2008). Although the St. Petersburg region is set to be the new heartland of foreign automotive production, its port situation is a barrier to growth and imports. Problems are shortage of capacity and terminals for finished cars and lack of adequate throughput connections (Krkoska & Spencer, 2008). Therefore, OEMs are now looking for alternatives, such as the Baltic countries, Ukraine and Turkey. Other options for entering Russia are Central Asia, like Kazakhstan and Iran, and the Far East, from where China mainly imports to Russia (Krkoska & Spencer, 2008). Black Sea ports are another alternative but also face issues, such as rough winters and poor roads, which often make them an unfeasible option. Ust-Luga has great potential to become a specialised Russian vehicle port, relieving some pressure from the other ports. It received its first car shipment in

Figure 23. Supplier presence in Russia in November 2008

Source: AEB (Association of European Businesses)
early June 2008. However, this port has its drawbacks as well: there is a coal terminal nearby, lack of transport links and no direct road to Moscow (Ludwig, 2007). Since the economic crises investments in further development of the port are temporarily put on hold (Interview with Ms. Theeuwes, 2009).

- Importing by air
According to Vitaly Brazhkin, the person in charge for logistics for service parts of Peugeot Rus Avto, customs make it impossible to import parts by air. They undertook several trial shipments and concluded that air deliveries could take up to a week to clear. As a consequence of issues at customs, Peugeot has to keep extra stock because it is not capable of moving parts quick enough (Ludwig, 2007).

3.2.4. Import or locally source inputs?
Automotive suppliers can be divided into three categories: raw materials (e.g. steel and tubing), generic components (e.g. wheels, tyres ad radios) and tooled components (unique to the vehicle, e.g. instrument panels). OEMs should balance quality and reliability of local sourcing against the cost of importing inputs. For example, when making a sourcing decision for steel, they should take into account that local body steel is of inferior quality. “The large number of small volume car assembly plants set up in Russia already creates a sufficient critical mass to encourage an entry of a large number of specific component suppliers, mostly proprietary/generic components as well as tooled components that do not require long lead times and have high freight cost.” (Krkoska & Spencer, 2008, p.13). Examples of these generic components are tyres, batteries, screws, nuts and bolts. Their critical mass is reached more quickly because they are produced in volume and are largely independent of individual model designs. Examples of tooled parts are seats, exhaust systems. (e.g. instruments panel or plastic body bumpers) on the other hand require a much higher critical mass. Therefore, suppliers are much harder to attract and these parts are usually imported. Sourcing from Russian suppliers is often not an option because of capacity shortage or insufficient quality. Smaller component suppliers can be more easily persuaded to move to Russia at the invitation of and under the protection of an OEM in order to avoid bureaucratic obstacles (Krkoska & Spencer, 2008).

3.3. Make
In this phase, OEMs can choose between setting up a local manufacturing facility or producing overseas and importing finished vehicles. In an ideal world, localization, size and process decisions are made on the basis of best practices, location of markets and suppliers, availability of infrastructure and labour. Cars are then shipped to various destinations from this optimally located plant. However, due to economic pressures in export markets, global automotive industry players are
forced to adapt their structure. Examples of these pressures are transportation costs, labour and material costs, government regulations and customs duties and tariffs. In addition, local production is often necessary to secure the market (Krkoska & Spencer, 2008).

When choosing between import and local production, OEMs compare two costs:
- Complete Knocked Down (CKD)\(^{23}\) packing and shipping costs plus local assembly costs
- Shipping Built Up (BU) vehicles from overseas facilities at a higher import tariff

“The import tariffs in Russia are relatively low compared to other emerging markets. However, they are sufficiently high to protect local producers, while encouraging the entry of foreign producers with small assembly plants substituting imports. This is primarily due to low margins in the passenger car industry.” (Krkoska & Spencer, 2008, p.8).

Automotive investments are concentrated in the Western corridor from St. Petersburg (north) to the Samara region (south). In particular the St. Petersburg region, Leningrad Oblast, has developed towards the centre of the automotive industry in Russia. "[Advantages of the region are] convenient geographic location and developed infrastructure (St. Petersburg has the most developed warehousing market in Russia), favourable macroeconomic conditions, political stability, investment legislation, tax exemptions and qualified labour". (Babiner, 2008, p.21). On top of that, compared to Moscow, finding land and building plants is far less expensive in this region (Babiner, 2008). The figure below shows where foreign car manufacturers are located in Russia.

**Figure 24. Location of foreign car manufacturers in Russia**

![Location of foreign car manufacturers in Russia](image)

\(^{23}\) “CKD is a complete kit needed to assemble a vehicle.” (www.wikipedia.org)
There are several signals that imply that the strategy of importing foreign brand cars and components should be changed to setting up production in Russia. First of all, because of the strong increase in demand for foreign brand cars, longer queues keep forming and buyers have to wait for a longer time to receive their car. Imports cannot fully and efficiently meet demand of Russian consumers. This leads to a situation in which the automobile market is more and more being structured by the supply of foreign brand cars than by demand. Secondly, delivery times of imported components are not always stable and guaranteed. This causes a risk for Russian car plants that nearly absolutely depend on these components. But several barriers hinder the decision to set up production in Russia. First of all, production capacities of local auto plants are exhausted, so foreign car manufacturers have to set up new plants in Russia. Secondly, importing components is more yielding than production because of low import tariffs (Berezinskaya, 2006). On the other hand, complicated and shifting customs regulations hinder the import of components and some feel corruption is still present in Russian government and business (Ludwig, 2007).

Local plants are low-tech, with low automation and few (if any) robots. This offers the possibility to produce small volumes of different models, mostly with imported components, just to supply the Russian and maybe some CIS markets. Once the market for certain brands grows, a scale justifying localisation can be reached and larger, more efficient plants can be built (Krkoska & Spencer, 2008).

3.4. Deliver

In the deliver phase challenges are encountered both in importing finished cars, parts and components as inland transportation. Challenges in importing are described in chapter 2, section 2.2. Options to consider when importing cars are discussed in section 3.2. Once entering Russia, automotive companies still face the problem of an underdeveloped logistics infrastructure in the entire inland. In the automotive industry there is mostly opted for truck or rail to transport vehicles (see Table 19). Challenges for both options are described in chapter 2, section 4.1.

Table 19. Automotive logistics statistics

<table>
<thead>
<tr>
<th>Region</th>
<th>Road</th>
<th>Rail</th>
<th>Railcar Parc (units)</th>
<th>Average Distance Covered (km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>30%</td>
<td>70%</td>
<td>20,000</td>
<td>2,500</td>
</tr>
<tr>
<td>Europe</td>
<td>45%</td>
<td>55%</td>
<td>12,000</td>
<td>1,500</td>
</tr>
<tr>
<td>Russia</td>
<td>22%</td>
<td>78%</td>
<td>3,000</td>
<td>5,000</td>
</tr>
</tbody>
</table>

Source: Russian Railways, TransGroup AS, 2007
3.5. Return

The main challenge for this phase is already explained in part 3.1.2., where the car lease aftermarket is discussed. The fact that the number of garages available to service cars has not been able to follow the growth rate automotive industry affects the entire passenger car market.

4. Future Outlook

In the next years, the manufacturing base is expected to develop. Because of the high quality level of technical education and resulting good technical and engineering skills, there opportunities for outsourcing to Russia. Collaboration between domestic and Western manufacturers will be the basis of improvement. In combination with investments in logistics, manufacturers have the opportunity to shift from importing to full production in Russia. This could make Russia a base for export to the rest of the world for both Russian and foreign manufacturers (Ludwig, 2007).

Because of the economic recession, car sales have dropped in Russia. This downturn is expected to persist in the short to medium term. The market is however expected to bounce back. See Figure 25 for a graphical representation. In the mean time, the industry will evolve towards a more consolidated market, in which global players will dominate, at the expense of smaller domestic players (Datamonitor, 2008).

Figure 25. Long-term sales forecast for Russia (thousand vehicles)

Source: PwC estimates
Frost & Sullivan predicts the Russian automobile industry to be stable and lucrative by the end of 2009 and to be the third largest in the world by 2012, behind the U.S. and China. A sales drop of 19.3% was measured between October and November 2008. The government reacted by revising its lending policies, automobile import policies and tariffs. First of all, import policies for used vehicles are being restructured, making it impossible to import cars older than five years (as opposed to seven years formerly). Secondly, import tariffs are increased in order to accelerate the development of foreign assembly in Russia. Russian OEMs on the other hand are cutting down on workforce and hours worked per week. Foreign car manufacturers are optimizing their production plans and launch of new models is delayed. Only when the Russian banking sector recovers and automotive loans are available again, the automotive sector will revive (Frost & Sullivan, 2009).

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Conclusions and Recommendations

More and more companies, looking for further growth options, are extending their activities into Russia. Since it is an emerging economy, it offers a lot of opportunities that mature Western markets cannot offer anymore. The expansion of Western companies to Russia is driven by five main forces. First of all, there was a strong increase in GDP the past years stimulating the economy and increasing prosperity. In 2007, growth reached 8.1% after a rise of 7.7% in 2006. However, due to the current economic crisis, growth contracted to 5.6% in 2008 and some even expect a decline in GDP in 2009. Secondly, many years of income growth, up to 13.5% y-o-y, combined with the unleashed consumerism that characterizes Russian customers is at the basis of strong increase in demand. Third, there is a boost in export and import showing that Russia is more and more open for international trade. On top of that, its proximity to Europe is an advantage the other BRIC countries do not have. Fourth, the Russian workforce has unique engineering skills, and due to low taxes and social security costs, the labour cost is still below the Western level, especially for blue collar workers and employees general outside Moscow and St. Petersburg. However, companies should not move to Russia for wage benefits but rather for low energy prices and attractive tax rates. Finally, Moscow and St. Petersburg are two rich, densely populated cities with 10.4 and 4.6 million inhabitants respectively. Due to the economic growth, increase in wages and low competition, the regional markets are becoming increasingly interesting.

Although Russia offers great growth opportunities for Western companies, a lot of challenges are faced throughout the supply chain. In order to get a comprehensive view of these obstacles, the SCOR-model is applied and barriers in each of its five phases (Plan-Source-Make-Deliver-Return) are analyzed.

Supply chain planning is a complicated issue because of many factors. Customers are spread over a large territory leading to long distances to bridge. On top of that, they are becoming more demanding on quality, response time and service levels. Secondly, forecasting is very challenging because of lack of point of sales data, bad communication throughout the supply chain, low supplier delivery reliability, delays at clearing customs, high growth rates and seasonal demand in many sectors. Especially when working together with domestic companies and in B2C environments there is lack of willingness to share data. The legal environment is unstable and inconsistent, with local authorities arbitrarily enforcing and applying laws. Therefore good relationships with officials are determinant for success. Another factor impeding smooth planning of the supply chain is
bureaucracy and importance of contracts leading to administrative burdens. Finally, it is hard to translate these problems to the board, complicating communication with headquarters.

In the sourcing phase three options can be chosen from: sourcing from local suppliers, importing or convincing foreign suppliers to move to Russia. Each option has its own challenges. The local supplier base offers an adequate technical level at competitive prices, has established wide trade and distribution networks and is able to settle disputes with Russian officials. However, they face issues with poor delivery reliability, capacity constraints and quality levels. Improvement is expected in the future due to spillover effects from Western partners and global suppliers. When opting for import, disadvantages are: high import duties, complicated regulations and licensing requirements, competition from grey import, inefficiency and corruption at clearing customs and protectionist measures for certain goods. Convincing the established Western supplier base to move to Russia can be a viable alternative but requires a certain critical production volume.

Thirdly, companies experience challenges in two areas in the make phase: human resource management and production plants. Four sub challenges occur at HR level. The first and most important one is high staff turnover driven by short term employments contracts, rife poaching, money mindedness, absence of social security and shortage on the labour market reinforced by the demographic crisis. Secondly, there is lack of logisticians and qualified managers causing a need for training and education. However, the rise of MBAs and supply chain courses are responding to the mismatch in competencies. Moreover, there is low empowerment of employees due to hierarchical organizational structures, which can impede efficiency. Finally, expats have to be employed due to lack of management skills and to improve good communication with the headquarters. Concerning production plants most problems are encountered in acquisition of land, plant construction, equipment import and getting access to utility networks.

The delivery phase is mainly challenged by the fact that Russia is by far the biggest country in the world. Inferior transport infrastructure, lack of warehouses and a fragmented market of logistic service providers are all aspects reinforcing the problem. In the area of road transport poor roads, traffic jams, accidents and restrictions on weight and speed hinder smooth deliveries. On top of that, trucks are outdated and have poor operating characteristics. Although Russia has the largest railway system in the world, tracks, locomotives and wagons are in bad condition and governmentally owned. The railway gauge is different from the European one, so goods have to be transferred at the border. Due to the combination of high increases in import and lack of investment, ports are in urgent need for modernization and extra capacity. Inland waterways are often frozen, required depths are not always reached and they flow from south to north whereas goods need to be
transported in east-west direction. Transporting by air is expensive and although it is fast, delays at customs undo these advantages. Finally, multi-modal transport is starting to evolve but often the infrastructure to link the different modes is not available and communication between the different players does not run smoothly.

Unbalance in supply and demand for warehouses lead to high prices in Moscow and St. Petersburg. Regions are becoming more important but local warehouse quality is much lower. Cross-docking and appropriate distribution centres are gradually arising in the retail market.

The market of logistic service providers is highly fragmented, but consolidation is expected, especially with the current economic crisis. LSPs charge high prices because they face a lot of logistic obstacles such as inferior transport infrastructure and inefficient deliveries due to one way traffic from the western and eastern borders to the centre causing empty trucks to return. Deliveries are done with dedicated trucks because of lack of distribution and consolidation systems. Future development will be based on services offered, reliability, safety and quality. Until now no LSP is able to offer the entire logistic portfolio in whole Russia.

The supply chain for returning goods is still underdeveloped since this is rather a Western concept than a Russian one. Companies trying to implement these processes face a lot of difficulties, especially if goods need to cross the border again. Therefore some companies try to solve this problem through financial arrangements with customers. However, in the future calculating return processes into the supply chain will become increasingly important because of changing customer expectations.

There are three additional subjects that call for attention. First of all, corruption is still present, especially in public bodies (e.g. customs officials) caused by low government salaries, bureaucracy, weak legal enforcement and lack of transparency. Secondly, a weak banking system with high interest rates and lack of long term loans incites companies to finance investments through retained earnings. Finally, in the prospect of accession to the World Trade Organization the Russian government is reforming its laws and regulations resulting in a more transparent and predictable business environment.

Companies aware of the challenges described above can deal with them by designing appropriate supply chains. From literature and interviews a list of recommendations was gathered. Achieving strategic fit between the supply chain and competitive strategy is a common rule in supply chain management. In Russia, an unstable and highly uncertain developing market urges companies to pursue a prospective oriented strategy, aiming for innovation and effectiveness. Consequently supply
chain strategies should also be oriented towards effectiveness, flexibility and responsiveness rather than efficiency.

In the planning phase it is important not to underestimate customer expectations in emerging markets and make sure the supply chain can satisfy the requirements. Russians are willing to switch if products are unavailable but do want a broad range of choice. Expert knowledge about the Russian market is a sine qua non for success. In the future, communication towards the consumer and technological capabilities to track and trace orders will become more important as customers will require higher service levels. This will contribute to supply chain optimization.

Demand forecasts and out of stock levels can be improved through better information sharing. This can be achieved by implementing integrated IT systems and will also be facilitated by the rapid evolution of the telecommunication network. Gathering information is easier in B2B environments and when working with international companies. Moreover, it is advised to keep extra safety and forward stocks. Information sharing requires good relations with customers and suppliers, mutual trust and commitment is important. But this is not sufficient for business development, networks with officials are imperative for business survival and growth. For this, companies can enlist the help of government relationship officers.

To deal with the administrative barrier, sufficient time, attention and people should be assigned to fulfil the paperwork. Gathering recommendations from local advisors or intermediary firms can help cutting through the red tape. Careful selection of a local business partner who knows his way around the administrative labyrinth is an important issue to trouble over. They can also be helpful in forming and maintaining good relationships.

To facilitate the sourcing phase the local supplier base can be improved by supplier development initiatives (e.g. transfer of know-how and technology). Bringing in global suppliers that have world class procedures and technologies can also strengthen the supplier base. If companies choose to import, good preparation is imperative. Customs authorities should be consulted in advance, directly or through a customs broker. In each sourcing option it is advised to keep extra stock, whether it is to anticipate inferior quality and/or delays in deliveries from local suppliers or to counterbalance bottlenecks at clearing customs.

To deal with challenges in the make phase appropriate HRM is needed to keep employees loyal and competent. Therefore career opportunities, transparent and fair income policy, result oriented bonuses, training, familial atmosphere, international exposure and involvement is recommended. When setting up manufacturing facilities good relationships with local government are again essential.
Conclusion and Recommendations

Since the delivery phase is troubled by one of the most insurmountable challenges in Russia, namely poor infrastructure, the right choice of transport mode is important. Not only transportation cost needs to be taken into account but also inventory cost and required responsiveness levels. This confirms that the competitive strategy has to be reflected in the supply chain strategy. In general, road is the most common transport mode in the west. Train is used when regions beyond the Ural mountains have to be reached. Warehouse location decisions should take into account the growing attractiveness of the regions. Locating distribution centres near those markets can be an opportunity to decrease transportation costs and increase responsiveness. Finally, LSPs should be selected based on their services offered, geographical coverage and reliability.

When confronted with corruption, companies can choose to give in or follow the legal way. Paying bribes can prevent delays in the supply chain (e.g. faster customs clearance) but signals to other entities that you are bribable. Not giving in to briberies requires buffers within the supply chain to compensate for possible delays.

An in depth study of the retail and automotive industry was made because they attract a lot of foreign investment and form the basis of supply chain development in Russia. Conclusions are that consolidation of the retail market is expected, accelerated by the current economic crisis. As retailers will have to handle even larger volumes and competition will become fierce, supply chain management will gain importance. Better collaboration between suppliers and manufacturers, more reliable delivery times and good IT-registration of stocks can improve the on stock availability. Expansion of the retail sector forms the basis of development of the logistic infrastructure. The speedy expanding Russian automotive industry is a second industry in which good supply chain management is increasingly imperative. On top of that, it gives an indication of the state of the manufacturing sector and the maturity of the consumer society. In the next years, the manufacturing base is expected to develop. Collaboration between domestic and Western manufacturers will be the basis of improvement. In combination with investments in logistics, manufacturers have the opportunity to shift from importing to full production in Russia.

Restrictions of this study about supply chain challenges in Russia were twofold. First of all, since companies mainly focus on growth and margins are high, supply chain management has not been an issue so far. Consequently literature available on the subject is limited. On top of that, due to the language barrier much direct information was not approachable.

A recommendation for further research is an investigation of the possible impact of the economic crisis. In this study some effects were already noticed. GDP growth contracted and sales have
dropped. Rouble depreciation forces foreign players to lower their prices to stay competitive and import duties are increasing, this stimulates switching over to local production. On top of that, urgently needed investments in infrastructure are put on hold. However, there are some positive consequences as well. Wages are stabilizing and high staff turnover is not an issue anymore. Secondly, consolidation of fragmented markets (e.g. LSP market) will occur, with large players taking over inefficient ones. Therefore good supply chain management will become increasingly important to survive in a more competitive market. Companies will have to switch their focus from growth to cost reduction and efficiency. It can be interesting to investigate how supply chain optimization can contribute to this.
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## List of interviews

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<th>Company</th>
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<td>Professor</td>
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## List of seminars attended

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<td>Doing Business in Russia</td>
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1. Central Federal District
2. Southern Federal District
3. Northwestern Federal District
4. Far Eastern Federal District
5. Siberian Federal District
6. Urals Federal District
7. Volga Federal District
<table>
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<th>City</th>
<th>Description</th>
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<tr>
<td>Moscow</td>
<td>The fastest growing logistics hub, due to high market potential (28% of all Russia retail trade). Transsib Railway, highways crossing (North-South, West-East). Retail presence: Metro Group, SPAR, IKEA, Auchan, Billa, main Russian retail players. Warehousing property: about 60% class A+B facilities, very active development. High demand, very low availability. Rent: A - 13.5-18.00/Sm/yr, B - 10.0-12.50/Sm/yr. Industries: 1, 2, 3, 4, 7</td>
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<tr>
<td>Saint-Petersburg</td>
<td>Second largest city and market. Largest transportation hub in the North-West of Russia, European gateway of Russia. Largest port on the Baltic sea (second largest in Russia). Connected to Transsib Railway. Good road connection to Moscow. International presence: Ford, Toyota, Nissan, Metro Group, Philip Morris, JTI, IKEA. Warehousing property: market size: &gt;5.5mn m², class A+B - 20%, high demand for good quality facilities, very low availability, active development. Rent: A+B - 10.0-16.00/Sm/yr. Industries: 1, 2, 4, 10, 14</td>
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<tr>
<td>Novosibirsk</td>
<td>Third largest city and the largest in Siberia, high market potential. Important hub on Transsib Railway, actively developing logistics hub. River port on Ob' river. Retail presence: main Russian retail players, IKEA (planned 2007). Warehousing property: market size 700.000 m², class A - 5-7%. High demand for good quality facilities, very low availability. Active development but mainly for own needs. Retail price on the level of Moscow. Class A - up to 12/05/Sm/yr. Industries: 1, 2, 7, 17</td>
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<tr>
<td>Yekaterinburg</td>
<td>Fourth largest city. Important hub on Transsib Railway with intensive logistics development aiming to connect the city to Berlin-Warsaw-Moscow-Nizhny Novgorod traffic line. International presence: Metro Group, Auchan, IKEA, Writy, Kraft-foods. Warehousing property: market size 600.000 m², deficit of class A+B, active development, but mainly for own needs. Rent is comparable to Moscow A-B: 10-14.05/Sm/yr, B-C: 5-9.05/Sm/yr. Industries: 1, 2, 21</td>
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<tr>
<td>Kaliningrad</td>
<td>Important transport hub (several ports, roads, railways, airport) with connection to Europe, the Baltic states and Russia. Free economic zone and favorable customs conditions. Industries: 1, 3, 6, 13</td>
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<tr>
<td>Murmansk</td>
<td>The largest non-freezing trade and fishing port of Russia. The main transit center of sea shipments from the northern regions of Russia. Industries: 2, 3, 6, 14, 16, 17</td>
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<td>Arkhangelsk</td>
<td>The largest port on the north of Russia (more than 30% of the Russian wood export), and an essential railroad crossing. Industries: 6, 0, 13</td>
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<td>Novorossiysk</td>
<td>The principle gateway in the south of Russia, good rail and road connections with industrial centers in Russia and Middle East; largest in Russia port for oil export. Industries: 2, 3, 16</td>
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<td>Krasnodar</td>
<td>Important hub on highways, road and rail air connection. Industries: 1, 2, 3, 5, 18</td>
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<td>Rostov</td>
<td>Important river port (Don river) connecting southwestern Russia with Black sea, Caspian sea and sea of Azov. Road connection to Ukraine, Moscow and Azerbaijan. Industries: 1, 2, 3, 5, 11</td>
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<td>Niniv Novgorod</td>
<td>Important hub on Transsib Railway, connecting to Moscow-Warsaw-Berlin traffic line. Good road connections, large port on Volga river. Industries: 1, 3, 5, 9</td>
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<td>Volgograd</td>
<td>Major railway junction with links to Moscow, Ukraine, the Caucasus, and Siberia. The Volga-Don Canal links the two great rivers of southern Russia. Situated on the longest European route E40, connecting Calais (France) with Rijeka (Kroatien). Industries: 1, 2, 3, 7, 6, 11</td>
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<td>Astrakhan</td>
<td>Important sea port “Astrakhan” and developing port “Oilla” on Caspian Sea, rail and road connection (D165) with Kazakhstan and Middle East. Industries: 9, 10, 11, 23</td>
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<tr>
<td>Kazan</td>
<td>The largest port on Volga river, essential Railway (Transsib) and road crossing. Industries: 1, 5, 9</td>
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<tr>
<td>Samara</td>
<td>Important industrial center and transport hub. Good road connection with Moscow. Large river port on Volga river, connected to Transsib Railway. Industries: 1, 2, 3, 9, 15</td>
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<td>Chelyabinsk</td>
<td>Important transport hub on Transsib Railway and roads connecting Siberia with Euraopean part of Russia and Urals region with Kazakhstan. Industries: 1, 2, 7, 12</td>
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<td>Krasnoyarsk</td>
<td>Important hub on Transsib Railway, large port on Yenisei river, good air and road connections. Industries: 2, 9, 10, 11</td>
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<tr>
<td>Irkutsk</td>
<td>Important hub on Transsib Railway, rail and road connection to Mongolia and China. International airport is planned to be developed in multimodal hub. Industries: 2, 9, 20</td>
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<tr>
<td>Khabarovsk</td>
<td>Important transport hub of Russian Far East. Transsib Railway (direction China and Korea), the Moscow - Khabarovsk airline, one of the most important in Russia, large port on Amur river. Famous for its “River-Sea” operations. Industries: 1, 2, 9, 10</td>
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<td>Vladivostok</td>
<td>The city itself has an important sea port, plus on the territory of the region there is the largest Far Eastern port of Russia, connected to Transsib Railway (port Vostochny) rail and road connection to North Korea. Industries: 6, 10</td>
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Industries:

City numbers are not in order of importance, besides the first four cities.

For more information contact: anna.ivanovskaias@capgemini.com
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<td>Tariff revenue (% of GDP)</td>
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<td>0.9</td>
<td>0.8</td>
<td>1.4</td>
<td>1.0</td>
<td>0.8</td>
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<tr>
<td>Tariff revenue (% change)</td>
<td></td>
<td>-33.4</td>
<td>-38.4</td>
<td>8.4</td>
<td>10.6</td>
<td>-23.3</td>
<td>-35.4</td>
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<tr>
<td><strong>Aggregate trade</strong></td>
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<tr>
<td>Real exchange rate (% change)</td>
<td>2.6</td>
<td>2.0</td>
<td>-0.5</td>
<td>1.1</td>
<td>4.8</td>
<td>1.8</td>
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<tr>
<td>Aggregate exports (% change)</td>
<td>13.2</td>
<td>7.9</td>
<td>1.5</td>
<td>3.5</td>
<td>24.3</td>
<td>10.8</td>
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<td><strong>Returns to mobile factors</strong></td>
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<tr>
<td>Unskilled labor (% change)</td>
<td>2.5</td>
<td>0.4</td>
<td>0.1</td>
<td>1.9</td>
<td>13.2</td>
<td>1.0</td>
<td></td>
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<tr>
<td>Skilled labor (% change)</td>
<td>4.7</td>
<td>1.5</td>
<td>0.6</td>
<td>2.5</td>
<td>17.6</td>
<td>2.6</td>
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<tr>
<td>Capital (% change)</td>
<td>4.9</td>
<td>2.0</td>
<td>0.7</td>
<td>3.1</td>
<td>19.5</td>
<td>3.6</td>
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<td><strong>Factor adjustments</strong></td>
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<tr>
<td>Unskilled labor (% of workers who change jobs)</td>
<td>2.6</td>
<td>1.1</td>
<td>0.5</td>
<td>1.6</td>
<td>4.4</td>
<td>1.7</td>
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<tr>
<td>Skilled labor (% of workers who change jobs)</td>
<td>2.1</td>
<td>0.4</td>
<td>0.4</td>
<td>1.5</td>
<td>2.5</td>
<td>1.0</td>
<td></td>
</tr>
<tr>
<td>Capital</td>
<td>0.6</td>
<td>0.4</td>
<td>0.4</td>
<td>0.2</td>
<td>0.1</td>
<td>0.6</td>
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Appendix 4: Windows of opportunity (Based on GRDI ranking for 2008)

<table>
<thead>
<tr>
<th>Action</th>
<th>Opening</th>
<th>Peaking</th>
<th>Declining</th>
<th>Closing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td>Monitor markets and conduct consumer research</td>
<td>Identify local partners and real estate locations; establish pilot stores and the supply chain</td>
<td>Increase market entries to capture market share</td>
<td>Determine leadership status (profitability) in the segment</td>
</tr>
<tr>
<td>Format of entry</td>
<td>Consider minority investment in local retailer</td>
<td>Consider supermarkets, hypermarkets, cash &amp; carry and convenience stores</td>
<td>Consider discount, warehouse stores and apparel</td>
<td>Move to wave-two formats, including EEO, DIY and specialized apparel*</td>
</tr>
<tr>
<td>Labor strategy</td>
<td>Identify skilled labor pool for market</td>
<td>Hire and train local talent and balance the expatriate mix</td>
<td>Change balance from expatriate to local staff</td>
<td>No pattern identified</td>
</tr>
</tbody>
</table>