The Almaty - Istanbul / Almaty - Bandar Abbas Container Trains Report

Prepared by Constantinos Alexopoulos

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CHAPTER 1. Introduction – The challenges of the area

Presentation of the Geography of the area

The Central Asian sub region, consisting of the republics of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, occupies a land mass greater than Western Europe. It is bordered by Afghanistan, China, Islamic Republic of Iran, Russian Federation and the Caspian Sea but many Central Asian republics, unlike other landlocked states in Asia, are also partially bordered by landlocked countries. Uzbekistan is doubly landlocked. As a consequence, goods exported and imported by these republics often transit through more than one neighboring state on the way to their final destinations, making the task of accessing markets and seaports more complex for these countries.

Central Asia is sparsely settled, with an estimated population of around 55 million. Transportation and communications face substantial barriers in the region, as the landscape is generally harsh, consisting of desert or semi-desert and steppe, as well as towering mountain ranges. Water is scarce in the region, and severe environmental problems have arisen from the poor conservation and utilization of this important resource from excessive irrigation. Nevertheless, the economies of the sub region are based largely on agricultural production, as well as their vast natural resources. The sub region has a significant percentage of the world's oil and gas reserves. The shares of the agricultural and industrial sectors continue to be large in each of these countries, contributing to more than half of GDP.

The Central Asian republics rely on a few commodities for the bulk of their export earnings, making them vulnerable to fluctuations in global commodity prices. For example, aluminum and cotton account for 70 per cent of annual export revenue in Tajikistan. The undiversified nature of the economies of these countries makes them heavily reliant on imports of consumption and capital goods. In Kazakhstan, where exports of oil and base metals are the principal revenue earners, the large oil and gas sector also affects the terms of trade, crowding out domestic manufacturers, and leading to a more import intensive economy. There are prospects of increased economic diversification as foreign investors move into the pipeline and machinery sectors in this country, followed by food processing and other industries. Turkmenistan and Uzbekistan are pursuing import-substituting industrialization policies, in textiles, for example, through the introduction of non-tariff barriers and limits on hard currency sales. The countries of the Commonwealth of Independent States (CIS) continue to be the most significant trade partners for the Central Asian republics, but countries outside the CIS are gaining in importance, for exports as well as imports[1].

This region was the heart of the the Silk Road in the past. This area ,however ,given the ongoing integration of the world economy, faces the challenge of finding new ways to trade with the rest of the world. The area suffers from high transport costs in international

1ESCAP, Economic and Social Survey of Asia and the Pacific 2003 (United Nations publication, Sales No. E.03.II.F.11).

trade as it puts them in a very disadvantageous position for economic development[2];

Figure 1 Eight out of ten member countries of ECO are landlocked

Source: ECO Secretariat

Illustration of each country's role for the region

Railway transport provides the backbone for container and bulk cargo transport, connecting Central Asian republics with ports on the Baltic Sea, Black Sea, Mediterranean and Persian Gulf, as well the Pacific. With the break-up of the former Soviet Union, these countries have had to cope with the transition from an integrated system, which used to serve the transport needs of a vast, centrally controlled economy, to systems that serve national interests. At present, the railway networks are expanding to connect with additional routes, such as to Islamic Republic of Iran and China.

According to some transport operators, exports of processed and manufactured goods from the Central Asian sub region have been increasing gradually, leading to a higher demand for empty containers for exports. This would reduce the transit transport costs of imports into the sub region, by reducing the frequency of empty returns. As a result, some shipping lines with representatives in the region are developing the logistics of access for republics in Central Asia and are beginning to sound out the market.

Kazakhstan, Turkmenistan and Uzbekistan are all relatively small economies and need to promote trade and closely integrate into the international trading system to achieve sustainable economic development. A favorable export environment and prudent fiscal and monetary policies have driven strong economic performance for all mentioned countries in the last few years. But in the second half of 2008, the economy started slowing as international commodity prices retreated. Although the global financial crisis has hardly

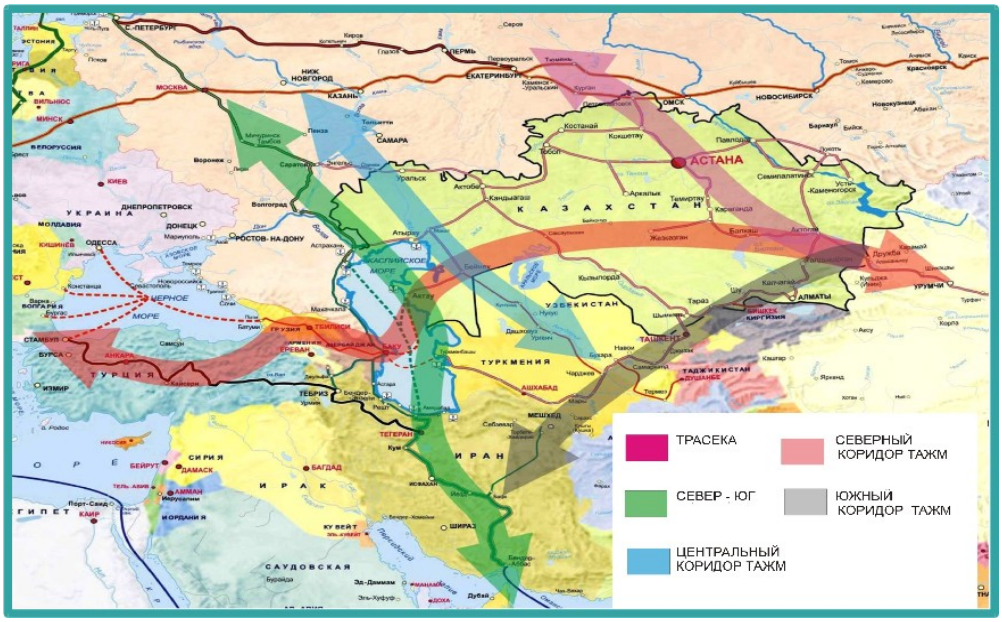
2 ECO Secretariat

touched the domestic financial sector directly for the majority of them, the economic downturn has slowed exports and import, remittances and investment. Rising unemployment and inflation will hinder government efforts to stimulate demand, and successful implementation of anti crisis policies will require acceleration of structural reforms including transport and trade. Turkey and the Islamic Republic of Iran on the other hand are boosting economies where natural sources as petrol help to the economic development.

Kazakhstan

The Republic of Kazakhstan is a land – locked country, far from the sea, but in geographical terms is quite advantageous position, connecting the Asia-Pacific region with Europe, Russia and other CIS countries, Middle East and Persian Gulf/Indian Ocean. The transport complex is represented by rail, river, sea, air, road, and pipeline modes.The length of railways of Kazakhstan at the end of 2008 amounted to 14205,4 kilometers, electrified railways - 4 143,5 km (29,6%). Deployed length of the major routes – 19 100 km, 6 000 km of tracks in station areas. Of the total length of 10 547 km operates with automatic block system and 8 816 km centralized traffic control (CTC).The railway of Kazakhstan directly borders and co-operates with the railways of Russia, Uzbekistan, the Kyrgyz Republic, Azerbaijan and China that is one of its main advantages in the market of transport services.

Figure 2 International railway transport corridors in the territory of Kazakhstan



Source: Ministry of Transport and Communication of Republic of Kazakhstan

Kazakhstan takes the important place in international transport-communication system and

represents territory through which there pass three main transit directions:

- Europe - China (with Russia);
- Europe - China (through the Economic Cooperation Organization, ECO)
- Russia - Central Asia

Foreign trade turnover of the Republic of Kazakhstan, according to customs statistics without taking into account the informal trade in 2008 increased by 35% and amounted to more than 109 billion dollars US against 80,5 billion dollars US in 2007. The total export turnover amounted to 71,1 billion dollars US. Kazakhstan imported goods totaling 37,8 billion dollars US last year. From CIS countries to Kazakhstan imported goods on 17,4 billion dollars US. Data for January-April 2009 shows that Kazakhstan's foreign trade turnover decreased by 39,1% compared to January-April 2008 and amounted to 19,2 billion dollars US, including export - 10,8 billion dollars US(by 49.8%), import – 8,4 billion dollars US(by 16,3%).

Uzbekistan.

Uzbekistan is located in the center of Central Asia in the interstream area of Amu-Darya and Syr-Darya. The territory of the country from west to east is 1425 kilometers long, and from north to south – 930 kilometers. On the north-east it borders Kazakhstan, on the east and south-east - Kyrgyzstan and Tajikistan, on the west - Turkmenistan, on the south - Afghanistan.

Total length of the state border is 6221 kilometers; the border with Kazakhstan – 2203 kilometers, Kyrgyzstan – 1099, Tajikistan – 1161, Turkmenistan – 1621 and Afghanistan – 137 kilometers. The length of roads is 184,900 km including 3,200 km are the roads of international importance, 18,800 km – roads of national importance, 21,500 km – roads of regional and local importance; municipal and rural roads – 69,900 and farm roads – 71,400 km. Within the public roads there are 7,107 bridges in use and the total of 165,000 linear meters of viaducts, of which 507 bridges and 18,000 linear meters of viaducts of international importance, 3,181 with total length of 84,000 linear meters – of republican importance and 3,419 for 62,700 linear meters – of regional and local importance.

Uzbekistan’s strategic location makes it an important transit route for freight traffic. This fact makes Uzbekistan very attractive and important for transit Eurasian transportations. For today the territory of Uzbekistan is crossed by 36 transit routes intended for transit of foreign road transporters.

These are two essential corridors connecting north and south using the roads M39 to the direction of Afghanistan / Tajikistan or to Samarkand then M37 to the direction of Bukhara and Iran. More intense use of the main two corridors (a) Iran – Bandar Abbas port / Pakistan

– Karachi port) would allow to radically change the geopolitical situation in the region, providing Uzbekistan with a role of a central link in trans-Asian and Eurasian transport-economical relations, reducing the traffic distance by 1.5-2 times.

Turkmenistan.

Turkmenistan is located in the western part of central Asia. On the north and the northeast Turkmenistan has borders with Kazakhstan and Uzbekistan, on the south and the southeast - with the Islamic republics of Iran and Afghanistan, from the western part it washes by waters of Caspian Sea and has borders with Azerbaijan and Russia. Area is 491, 2 thousand sq. km. Territory stretches on 1100 km from the west to the east and on 650 km from the north to the south. The northern and center sections of the territory of Turkmenistan occupy sandy deserts of Turanian lowland - central, Zaunguzskie and southeastern Karakumy. The south and the southeast of the country occupy mountains. The highest point of Turkmenistan is located in Koytendage (3139 m). The lowest point of Turkmenistan (- 81 m) - cavity is Akchakaya. Historically in the territory of Turkmenistan converged the earliest commercial ways, one of which is “great silk way”.

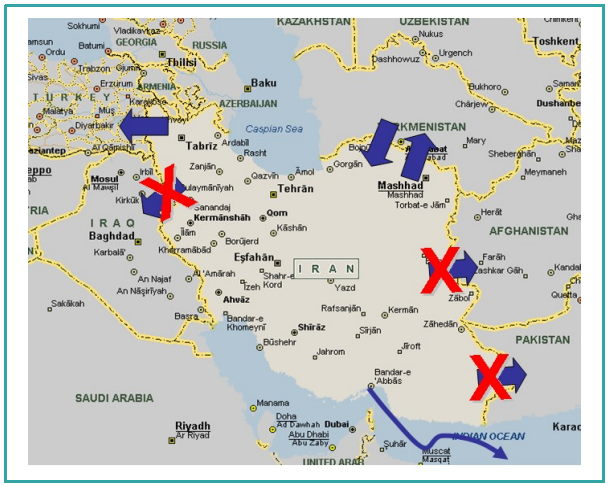
From the first years of independence government of Turkmenistan has understood profitability of country’s geographical location. National program named “Strategy of social-economical reforms in Turkmenistan for the period up to 2010yy” has as a core the huge reconstruction of existing transport infrastructure. Taking in mind that, it can be easily explained great costs of Turkmen State Budget on construction of new transport routes and their further modernization.

Transportation routes to Turkmenistan are limited due to the country’s geographic location. One of the main entry points is the port of Turkmenbashy on the Caspian Sea, located 270 kilometers east of and across the Caspian Sea from Baku, Azerbaijan. Turkmenbashy is an important gateway to Central Asia and is an import and export center for a variety of products. The port has a cargo ferry terminal (there is a ferry service to and from Baku) and a port facility. Large volumes of commercial cargo are shipped by truck via Iran. There are several road border crossing points at the Iranian border at Gudriolum, Gaudan, Artyk and Serakhs and one rail crossing at Serakhs. Iran and Turkmenistan have different railroad gauges and cars have to be switched to a new gauge at the Serakhs rail station in Turkmenistan. Turkmenistan has a number of rail links with Uzbekistan in the north and north-east, but rail and road crossings at Turkmenabat city are the most heavily used. Trucks coming to and from Uzbekistan have to cross the Amu Darya River by pontoon bridge. There is a limited capability for cross-boundary deliveries by trucks with Kazakhstan via Bekdash in the north-west. Although, the road is in a very poor condition, there are plans to rehabilitate it.

Iran

Iran is strategically located, with all cargo from CIS Countries passing through Sarakhs, in order to avoid the Caspian sea, exported through the harbour of Iran, Bandar Abbas. Trade with Iraq, Pakistan and Afghanistan however, is limited. Iran's trade routes go via its harbour, via Turkey (to Europe) and via Turkmenistan (to the countries of the former Soviet Union). This country has an important role to play not only as an international cargo transit country, where actually real income is limited, but mainly as a transshipment location with value added services for transit cargo (logistics, repackaging services, labelling services, etc.). The latter role can be hugely profitable for the economy of Iran.

Figure 3. Iran's role in the region



Source: Author's analysis

Turkey

Turkey's position makes it a natural bridge between Europe and Asia. This is the role the country takes in regard to international trade and it has already begun implementing it effectively. Crossroad of trade, transshipment location with value added services, export harbour of Asia's cargoes, important roles, complicated, with need for high level management and organization. In order to serve this role, Turkey should promote and develop effective, reliable, competitive and functional transit services of constant track, from the countries of Central Asia and via Turkey to remaining Europe.

Figure 4. Turkey's role in the region

Source: Author's analysis

Transportation development dynamics and its role for the development of a region

Adequate, reliable and economic transport is essential, although not in itself sufficient, for

the social and economic development of rural areas in developing countries[3].

The direct impact of transport on production at remote locations is derived from three effects:

- ☑Lowering of production costs;
- ☑Increased producer prices; and
- ☑Encouragement of investment.[4]

The reduction in costs results from three main factors. Firstly and most obviously, improved transport lowers the delivered costs of inputs to the producer. This can be important for agricultural as well as industrial production: Ahmed and Hossain, in a study of two groups of villages in Bangladesh, found that agricultural output was 31 to 42 per cent higher in the group with better transport access, and attributed this difference principally to the lower delivered cost of fertilizer[5].

A second and related issue is the reliability of transport services. The importance of continuity of input supply increases rapidly as the degree of industrial sophistication increases. The absence of regular and reliable transport services operating with adequate frequency will effectively condemn remote communities to subsistence production in perpetuity. As shipping services generally use a larger unit of supply and operate at lower frequencies than land transport services serving markets of a similar scale, interruption to supply is generally a far more serious problem where the remote community is dependent on maritime transport.

For many agricultural commodities and low value added manufactures, the costs of transport represent a substantial proportion of total product costs. One study has indicated that, in developing countries, transport costs typically account for between 10% and 30% of final product price[6]. Frequency and reliability of transport also have a very significant impact.

Irregular or infrequent transport services require purchasers to hold high levels of stock in order to ensure that they in turn can ensure continuous supply to their customers. This results in an increase in inventory costs, which in turn depresses the prices offered to producers in remote locations.

Added to this is the risk of spoilage of perishable products. This may seriously inhibit the diversification of primary activity into higher value lines such as horticultural production. Alternatively, it will significantly erode the benefits to producers of diversification into higher value but more perishable commodities.

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3 S. Carapetis, H. Beenhakker, and J. Howe*, The Supply and Quality of Rural Transport Services in Developing Countries*, World Bank Staff Working Paper 654, August 1984.

4 UNESCAP, Transport and Trade development , publications 2007

5 Ahmed, Raisuddin and Mahabub Hissain*, Development Impact of Rural Infrastructure in Bangladesh*, International Food Policy Research institute, Research Report 83.

6 Henri L Beenhakker*, Issues in Agricultural Marketing Strategy and Pricing Policy*, The World Bank, Discussion Paper, Transportation Issues Series No TRP7

The quality of infrastructure and support services has been identified as a significant determinant in investment decisions. Creightley reports that 'for countries in the early phases of development, good quality infrastructure was preferable to tax incentives for attracting foreign investments[7]. Creightley also reports evidence that 'transport improves access to institutional credit, contributes in shifting the allocation of credit from nonproductive to productive activities, and leads to increased demands for credit[8].

The Urumchi Region and it's importance

Figure 5. Xinjang region

Source: China Review

Xinjiang itself is huge – it is the largest administrative region of China, covering some 1.6 million square kilometers. To the north lies Russia, to the south is Tibet and the Himalayas, and to the west, Kazakhstan. Urumqi is the region's wealthiest city, and connections with the rest of China's cheap manufacturing bases mean it is also a trading hub for goods that citizens of other Central Asian cities cannot otherwise obtain easily. In fact, the middleman markup on Chinese made goods is so high elsewhere in Central Asia that those who can afford it either fly or take the train to Urumqi or Kashgar to buy Chinese made goods directly. Urumqi also has several development zones, namely the Urumqi Economic and Technological Development Zone, the Urumqi New and Hi-Tech Industry Development Zone and the Shihezi Economic and Technological Development Zone.In terms of GDP, the latest

7 Cavelle D. Creightley, *Transport and Economic Performance: A Survey of Economic Performance*, World Bank, Washington: 1993, p8.

8 *Ibid,* p10.

available figures for 2008 showed Urumqi with a per capita income in excess of US$4,000 per annum. That's about half of what is achieved in Shanghai, and is streaks ahead of the per capita income of any of the other neighboring Central Asian cities. Almaty, just across the Tian Shan Mountains in Kazakhstan, has a per capita income of about US$1,800 per annum, and that is also considered a wealthy city by Central Asian standards.

In terms of other areas of Xinjiang, Kashgar is a focal point due to its ancient silk road trading roots. Linked to Urumqi by air, train and expressway, it is a two-hour flight away from the regional capital. Kashgar is also undergoing some radical changes

The city effectively links China and Central Asia and is to be developed into a major trading and logistical bridge.The ancient Silk Road city of Kashgar has been given state level approval to establish itself as an economic development zone, the first in Western China

The EDZ will be based on the existing Kashgar Central and Southern Asia Industrial Park, which is close to the airport and downtown areas. Although only 5 square kilometers, the park will initially be expanded to 8.5 square kilometers and is expected to reach 160 square kilometers.

The development of Kashgar is expected to have a significant impact on the region, and although much improvement in road infrastructure needs to be made – the route to Pakistan is the Karokoram Highway and is prone to landslides and collapse – the potential for rail links to be developed heading south into Gilgit and beyond to link up with Pakistan's main railway infrastructure would significantly enhance trade. Comparisons are already being made with the development of Shenzhen, which borders Hong Kong and has been converted from a sleepy fishing village to a major import-export hub.

The trade development of Urumchi and of Xinjiang region and the development of Kashgar to a Economic development zone will operate as cargo feeding region for our block train Almaty – Bandar Abbas. The opportunity is great and exists. If this train is going to be connected with the Xinjiang region then there will be a non stop rail service with maybe two trains vice versa per week.

The alternative rail corridors to Almaty

As we discussed earlier in this chapter (figure 2), the Almaty Istanbul corridor via Uzbekistan – Turkmenistan and Iran is one out of five main rail corridors of the country. Even figure 2 does n't illustrate perfectly this corridor, the main rail corridors for the Ministry of Transport and Communications of Kazakhstan are:

1. **Northern Corridor of Trans-Asiatic trunk-railway (TATR)**. The Northern Corridor TATR passes through the territories: Western Europe – China, Korean peninsula and Japan, through Russia and Kazakhstan. Its Kazakh section of the route: Dostyk -

Aktogai - Sayak - Mointy - Astana - Petropavlovsk (Presnogorkovskaya).

2. **Southern Corridor of Trans-Asiatic trunk-railway (TATR).** The Southern Corridor TATR passes through the territories: South-Eastern Europe – China and South-East Asia through Turkey, Iran, Central Asia and Kazakhstan. Its Kazakh section of the route: Dostyk - Aktogai - Almaty - Shu - Arys - Saryagash.
3. **TRACECA.** TRACECA corridor runs through the territories: Eastern Europe - Central Asia via the Black Sea, Caucasus and the Caspian Sea. Its Kazakh section of the route: Dostyk - Almaty - Aktau.
4. **North-South.** The North-South Corridor - a link between Northern Europe and the Gulf countries through Russia, Central Asia and Iran with the participation of Kazakhstan in the areas seaport Aktau - regions of the Urals in Russia and Aktau - Atyrau.
5. **Central Corridor of Trans-Asiatic trunk-railway (TATR)**. The Central Corridor TATR is important to regional transit. Its Kazakh section of the route: Saryagash - Arys - Kandagach - Ozinki.

According to market specialists and forwarding companies of the area, forwarders prefer to use the corridor Istanbul port to Novorossiysk port by maritime transport and then by rail via Russian federation to Almaty comparing to the Almaty – Istanbul one of our train. This is because this route is more competitive concerning time and cost. The lack of cargo supposed to be one of the main reasons that the block train Istanbul – Almaty one does nt operate in a proper or weekly basis. It seems that this is not the case because according to our analysis the cargo exists and is unconsolidated to different other routes. Therefore our main task for the formulation of a new strategy for the Almaty – Istanbul train would be to analyze the other transport corridors and their competitive advantages against the Istanbul – Almaty one.

CHAPTER 2. Economical Review of the five countries

Presentation of the 5 countries – countries profile,

Turkey

Once the centre of the Ottoman Empire, the modern secular republic was established in the 1920s by nationalist leader Kemal Ataturk.

Straddling the continents of Europe and Asia, Turkey's strategically important location has given it major influence in the region - and control over the entrance to the Black Sea.

Efforts to reduce state control over the economy also faced many obstacles. After years of mounting difficulties, which brought the country close to economic collapse, a tough recovery programme was agreed with the IMF in 2002. Since then, Turkey has seen strong economic growth and a dramatic fall in inflation. However, huge foreign debt and unemployment remain major burdens.

Figure 6 Turkey's Map

Source: BBC

Turkey's dynamic economy is a complex mix of modern industry and commerce along with a traditional agriculture sector that still accounts for about 30% of employment. It has a strong and rapidly growing private sector, and while the state remains a major participant in basic industry, banking, transport, and communication, this role has been diminishing as Turkey's privatisation program continues. The largest industrial sector is textiles and clothing, which accounts for one-third of industrial employment; it faces stiff competition in international markets with the end of the global quota system. However, other sectors, notably the automotive and electronics industries are rising in importance and have surpassed textiles within Turkey's export mix. Real GDP growth has exceeded 6% in many years, but this strong expansion has been interrupted by sharp declines in output in 1994, 1999, and 2001. Due to global economic conditions, GDP fell to a 0.9% annual rate in 2008, and contracted by about 6% in 2009. Inflation fell to 6.5% in 2009 - a 34-year low. Despite the strong economic gains from 2002-07, which were largely due to renewed investor interest in emerging markets, IMF backing, and tighter fiscal policy, the economy has been burdened by a high current account deficit and high external debt. Further economic and judicial reforms and prospective EU membership are expected to continue boosting foreign direct investment. The stock value of FDI stood at more than $180 billion at year-end 2009. Privatization sales are currently approaching $39 billion. Oil began to flow through the Baku-Tbilisi-Ceyhan pipeline in May 2006, marking a major milestone that will bring up to 1 million barrels per day from the Caspian to market. Several gas pipelines also are being planned to help move Central Asian gas to Europe via Turkey.

Iran

Iran became a unique Islamic republic in 1979, when the monarchy was overthrown and religious clerics assumed political control under supreme leader Ayatollah Khomenei.

The Iranian revolution put an end to the rule of the Shah, who had alienated powerful religious and political forces with a program of modernization and Westernization.

Persia, as Iran was known before 1935, was one of the greatest empires of the ancient world, and the country has long maintained a distinct cultural identity within the Islamic world by retaining its own language and adhering to the Shia interpretation of Islam.

Price controls, subsidies, and other rigidities weigh down the economy, undermining the potential for private-sector-led growth. Significant informal market activity flourishes. The legislature recently passed President Mahmud AHMADI-NEJAD's bill to reduce subsidies, particularly on food and energy. The bill would phase out subsidies - which benefit Iran's upper and middle classes the most - over three to five years and replace them with cash payments to Iran's lower classes. This is the most extensive economic reform since the government elevated gasoline rationing in 2007. However, previous government-led efforts to reform subsidies - such as in the 1990s under former president Hashemi RAFSANJANI - were met with stiff resistance and violent protests. High oil prices in recent years allowed Iran to greatly increase its export earnings and amass nearly $100 billion in foreign exchange reserves. But with Iran's oil export price from March to December 2009 averaging just $55 per barrel and with a slight decline in oil production over the past four years, the Iranian government is facing budget constraints, and Iran's foreign exchange reserves dipped to $81 billion at the end of 2009. Tehran formulated its 2009 budget to anticipate lower oil prices and has reduced some spending.

Figure 7 Iran 's Map

Source: BBC

Turkmenistan

Turkmenistan is made up mainly of desert and has the smallest population of the five former Soviet republics in Central Asia. The government is seen as the region's most autocratic, but the strict isolation imposed by eccentric dictator Saparmurat Niyazov has lifted sof natomewhat after his death. The country claims to possess the world's fifth largest estimated reserves ural gas. Despite its gas wealth, much of Turkmenistan's population is still impoverished. Since independence from the Soviet Union in 1991, the country has remained largely closed to the outside world.

It is effectively a one-party state dominated by the Democratic Party of Turkmenistan, which was led by the President Saparmurat Niyazov until his death in December 2006.

Turkmenistan is the most ethnically homogeneous of the Central Asian republics, the vast majority of its population consisting of Turkmens. There are also Uzbeks, Russians and smaller minorities of Kazakhs, Tatars, Ukrainians, Azerbaijanis and Armenians.

Figure 8 Turkmenistan's Map

Source: BBC

In contrast to other former Soviet republics, it has been largely free of inter-ethnic hostilities. However, strong tribal allegiances can be a source of tension. With foreign investors keeping away, the Turkmen economy remains underdeveloped.

The country has been unable to benefit fully from its gas and oil deposits because of an absence of export routes and a dispute between the Caspian Sea littoral states over the legal status of offshore oil wells.

Turkmenistan produces roughly 70 billion cubic metres of natural gas each year and about two-thirds of its exports go to Russia's Gazprom. A protracted dispute between the two countries over the price ended in September 2006 when Gazprom agreed to pay 54% more.

Turkmenistan has since made efforts to break out of Russia's hold on its exports. It has opened major gas pipelines to China and Iran, and is considering taking part in the Nabucco pipeline - an EU-backed project designed to provide an alternative to Russian gas supplies to Europe.

Uzbekistan.

Positioned on the ancient Great Silk Road between Europe and Asia, majestic cities such as Bukhara and Samarkand, famed for their architectural opulence, once flourished as trade and cultural centres.

The country is one of the world's biggest producers of cotton and is rich in natural resources, including oil, gas and gold. However, economic reform has been slow and poverty and unemployment are widespread.

Figure 9 Uzbekistan's Map

Source: BBC

Kazakhstan.

A huge country the size of Western Europe, Kazakhstan has vast mineral resources and enormous economic potential. The varied landscape stretches from the mountainous, heavily populated regions of the east to the sparsely populated, energy-rich lowlands in the west, and from the industrialised north, with its Siberian climate and terrain, through the arid, empty steppes of the centre, to the fertile south. Ethnically the country is as diverse, with the Kazakhs making up over half the population, the Russians comprising just over a quarter, and smaller minorities of Uzbeks, Koreans, Chechens and others accounting for the rest. There has been major foreign investment in the Caspian oil sector. Oil development has brought rapid economic growth, although expansion slowed in 2009 as a result of the global financial crisis. An oil pipeline linking the Tengiz oil field in western Kazakhstan to the Russian Black Sea port of Novorossiysk opened in 2001. In 2008, Kazakhstan began pumping some oil exports through the Baku-Tbilisi-Ceyhan pipeline, as part of a drive to lessen its dependence on Russia as a transit country. A pipeline to China was opened in late 2005, with work on another starting in 2008. Nevertheless, poverty is still widespread and Kazakhstan continues to face major economic challenges, particularly with unemployment and inflation. At the same time, a small minority of Kazakhs grew very rich after independence through privatization and other business deals.

Figure 10 Kazakhstan's Map

Statistical presentation of the region – Economic Growth

In view of absence at the Central Asian countries of an outlet to the sea, for them integration into the international trading system, liberalization of a foreign trade policy and regional cooperation into sphere of transport and transit are closely interconnected. Liberalization of a commercial policy between one of the Central Asian countries and its trading partner with which it does not have general borders, will not lead to substantial growth of bilateral trade if moving of vehicles and the goods through the countries of transit will be complicated because of lacks of a transport and customs infrastructure or not physical barriers.

The countries of the Central Asia are located on a continental part of the Asian subcontinent, as causes a role and value of separate types of transport in realization of transit transportation through their territories. So, five countries of the Central Asia occupy the area more than 4 million km^2, that only on 0,3 million km^2 is less than territory of 27 countries of the European Union. At such territorial dissociation of the countries and regions of economic development necessary efficiency of interstate movement of the goods can be provided only on the basis of use of the types of transport, which are capable to carry out mass transportation at rather low level labor and material inputs. For the countries with a midland arrangement such type of transport is the railway transportation (if it is a question of transport for general using) and pipeline basically for transportation of hydro carbonic raw material. These objective features also cause the leading part of a railway transportation in sphere of the international transportation in the Central Asian countries[9].

Statistical – Economical Review of each country

Statistical Review of Kazakhstan

The global financial crisis and economic slowdown have hit Kazakhstan hard. GDP growth in 2008 dropped to 3,3% from the 8,9% of a year earlier when growth had already been undermined in a weak fourth quarter (figure 2). Output growth in 2008 fell below the previous year's in all sub sectors, except mining (up 5,3%), including oil (up 5,3%) and natural gas (up 14,5%). Despite good performance in these mineral sub sectors, growth in industry fell to 2,1% (from 5,0% in 2007) owing to a 2,6% drop in manufacturing output as consumer and investment spending declined. Expansion in construction, a strong sector in recent years, tumbled to 1,8% from 5,7% in 2007. Growth in the agriculture sector (about 5,3% of GDP) fell by 5,6%, from 8,4% growth a year earlier, due to a severe drought and the high base effect of 2007.

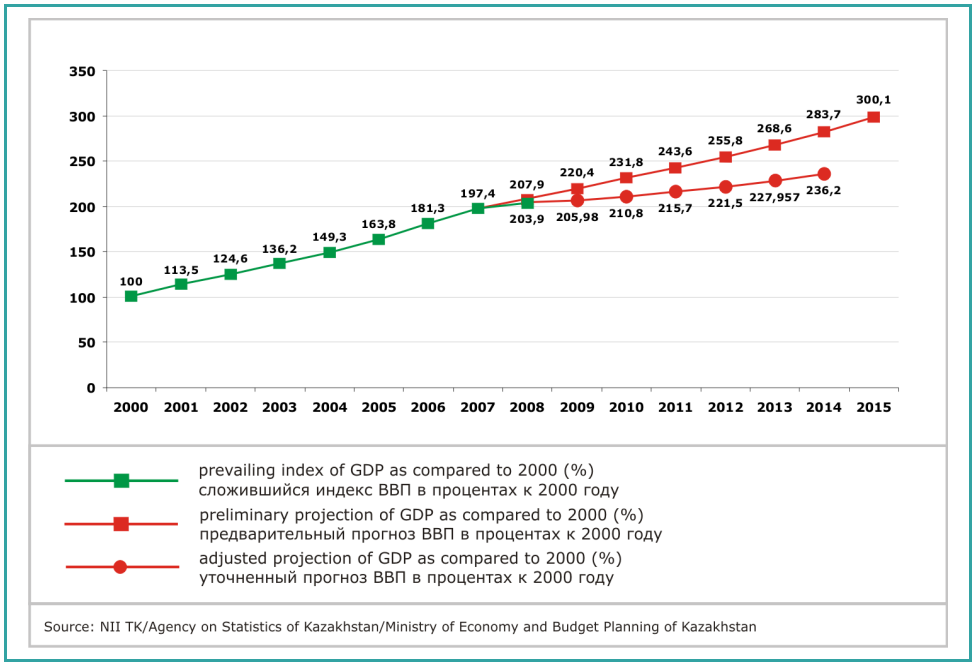
9 REVIEW of the existing situation in the market of the international transportations for the Central Asian Republics, 2009

Figure 11 Growth of basic macroeconomic indicators annual change, Kazakhstan

Source: NII TK / Agency on Statistics of Kazakhstan / Ministry of Economy and budget Planning of Kazakhstan

Declared government economic policy of Kazakhstan for the future is aimed at balanced economic growth through a transition from accelerated growth to moderate pace of development. In mid 2008, the Government of the country set the target of tripling the 2015 GDP as compared to 2000, however further economic developments in the world and in Kazakhstan forced it to revise macroeconomic projections.

Figure 12 Forecast of GDP growth of Kazakhstan



Source: NII TK / Agency on Statistics of Kazakhstan / Ministry of Economy and budget Planning of Kazakhstan

Analysis of the freight flows from 2006 to 2008 demonstrate the important roles in the export-import and transit directions in Kazakhstan played by rail and road transport.

Figure 13 Cargo Tonnages in Kazakhstan by mode 2006 -2008 (Thousand tons)

THE VOLUME OF FREIGHT	2006			2007			2008		
	TOTAL	EXPORT	IMPORT	TOTAL	EXPORT	IMPORT	TOTAL	EXPORT	IMPORT
Total									
Total	178 029,7	140 397,4	37 632,3	195 542,4	150 451,2	45 091,2	200 869,9	158 519,4	42 350,5
CIS countries	100 308,5	67 264,5	33 044,1	109 604,5	71 499,9	38 104,6	114 048,7	79 144,9	34 903,8
far abroad	77 721,2	73 132,9	4 588,3	85 937,9	78 951,3	6 986,6	86 821,2	79 374,5	7 446,7
By sea									
Total	10 783,0	10 587,8	195,2	9 487,5	9 304,3	183,2	8 902,2	8 686,5	215,7
CIS countries	114,5	1,3	113,2	106,2	16,1	90,1	147,1	19,2	127,9
far abroad	10 668,5	10 586,6	82,0	9 381,3	9 288,2	93,1	8 755,1	8 667,4	87,7
By inland waterways									
Total	13,3	7,5	5,8	22,2	11,4	10,9	33,6	27,8	5,8
CIS countries	12,8	7,5	5,3	21,3	11,4	9,9	33,6	27,8	5,8
far abroad	0,5	0,0	0,5	1,0	0,0	1,0			
By rail									
Total	89 307,0	72 698,4	16 608,6	99 386,5	76 206,6	23 180,0	104 481,7	83 620,5	20 861,2
CIS countries	63 685,0	50 446,0	13 239,1	71 713,7	53 538,0	18 175,7	74 490,1	59 507,0	14 983,2
far abroad	25 621,9	22 252,4	3 369,5	27 672,8	22 668,5	5 004,3	29 991,6	24 113,5	5 878,1
By air									
Total	70,6	31,4	39,3	52,9	2,4	50,5	45,0	3,3	41,7
CIS countries	3,2	0,3	2,9	4,5	0,6	3,8	4,1	1,3	2,8
far abroad	67,4	31,1	36,4	48,5	1,8	46,7	40,9	2,0	38,9
By road									
Total	4 533,5	2 037,4	2 496,0	5 350,7	2 125,8	3 224,9	5 010,5	2 469,6	2 540,9
CIS countries	3 476,4	1 899,5	1 576,9	3 703,5	2 000,3	1 703,2	3 574,5	2 333,9	1 240,5
far abroad	1 057,1	138,0	919,1	1 647,2	125,5	1 521,7	1 436,0	135,7	1 300,3
By road RK									
Total	2 035,4	428,3	1 607,1	2 428,7	388,7	2 039,9	2 089,3	442,9	1 646,4
CIS countries	1 486,3	332,1	1 154,2	1 594,6	310,3	1 284,3	1 314,8	372,9	941,9
far abroad	549,1	96,2	452,9	834,1	78,5	755,6	774,5	70,0	704,6

Source: Department of Foreign Trade of Agency of RK on Statistics

Figure 14 Freight turnover of the Republic of Kazakhstan on all modes of transport for period 2003-2008. (Billion ton-km)

FREIGHT TURNOVER	2003	2004	2005	2006	2007	2008
All modes of transport	258,4	283,1	296,3	328,5	350,5	369,8
including:						
by rail	147,7	163,5	171,9	191,2	200,8	215,1
by road	40,2	43,9	47,1	53,8	62,6	63,5
by air		0,07	0,1	0,07	0,09	0,07
by river	0,07	0,08	0,09	0,04	0,05	0,06
by pipeline	70,4	75,6	77,1	83,3	87,8	90,3
by sea	-	-	0,02	0,02	0,3	0,8

Source: Agency of RK on Statistics

The main trade partners of Kazakhstan in 2008 were Russia, China, Italy, Switzerland, France, Germany, Netherlands, Ukraine, Iran, United States, Turkey, United Kingdom, Japan.

In the commodity structure of Kazakhstan's exports in 2008, the share of mineral products amounted to 73,0%, metals and products thereof - 15,2%, chemical products - 3,4%, food products and raw materials for their production - 4.2%, machinery and equipment - 1,8%. The largest share of exports of the Republic (after oil) falls on refined copper, rolled ferrous metals, ferroalloys, mineral oil, wheat, zinc, iron ore, precious metals, natural gas, alumina, coal, machinery and equipment, cotton fiber.

Primary destinations of the country's exports were Italy (16,7%), Switzerland (15,8%), China (10,8%), Russia (8,8%), France (7,8%), the Netherlands (6,5%), Ukraine (2,8%), Turkey (2,7%), Great Britain (2,6%), Uzbekistan (1,8%), Japan (1,1%), Finland (0,9%), Germany (0,9%), the USA (0,8%).

Share of the CIS countries in total volume of exports for 2008 was 15,6%, compared with 16.7% during 2007..In total volume of imports considerable currency means go on purchase of mineral oil, medicines, furniture, confectionery products, gas natural, alcoholic drinks, and also a foodstuff.

The main suppliers of goods in Kazakhstan were Russia (36,3%), China (12%), Germany (6,8%), Ukraine (5,6%), United States (5,1%), Italy (3,3%), Japan (2,6%), France (2,1%), Turkey (2,6%), United Kingdom (1,8%), South Korea (1,1%).

In 2008 Kazakhstan's trade turnover with CIS countries amounted to 28 575,2 million dollars US, while export grew by 39% up to 11 078,4 million dollars US against 7 965,3 million dollars US in 2007, and import by 19,8% up to 17 496 ,8 million dollars US against 14 599,3 million dollars US in 2007. The share of CIS countries in total trade turnover of Kazakhstan amounted to 26,2%, in exports the growth was 15,6% and in imports 46,2%. The share of mineral products in total volume of Kazakhstan exports to the CIS in 2008 amounted to 52,5%, foodstuffs 12,5%, chemical products 9,5%.

Figure 15 Basic indicators of foreign trade

	2004 *millions dollars*	2005 *millions dollars*	2006 *millions dollars*	2007 *millions dollars*	2008 *millions dollars*	2009* (January-April) billion dollars
The foreign trade turnover - total	32.877,5	45.201,2	61.927,2	80.511,7	109.072,6	19,2
including:						
CIS countries	10.215,1	12.200,6	16.637,5	22.564,6	28.575,2	-
Other countries	22.662,4	33.000,6	45.289,7	57.947,1	80.487,4	-
Export – total	20.096,2	27.849,0	38.250,3	47.755,3	71.183,6	10,8
including:						
CIS countries	4.097,2	4.066,7	5.574,0	7.965,3	11.078,4	-
Other countries	15.999,0	23.782,3	32.676,3	39.790,0	60.105,2	-
Import – total	12.781,3	17.352,2	23.676,9	32.756,4	37.889,0	8,4

including:						
CIS countries	6.117,9	8.133,9	11.063,5	14.599,3	17.496,8	-
Other countries	6.663,4	9.218,3	12.613,4	18.157,1	20.392,2	-

Source: Agency of RK on Statistics

Regional transit freight flows.

Central Asian States have access to world markets, mainly through the territory of Russia and Kazakhstan. Kazakhstan has 14 railway border points with other states, from them: in the Southern part of Kazakhstan there are three joints with railways of Uzbekistan (station Sary-Agash, Oasis and Pahtaaral) and Kyrgyzstan (station Lugovaya); from the North side has eleven joints throughout along the border with Russia (station Aksarajsky, Ozinki, Iletsk I, Nikel-Tau, Tobol, Zolotaya Sopka, Presnogorkovskaya, Petropavlovsk, Kzyl-Tu, Kulunda, Lokot), and also border crossing Dostyk - Alashankou with China. At present border points Kzyl-Tu and Zolotaya Sopka are temporarily closed for interstate transportation.

Figure 16 Rail Tonnages at the Border stations of Iletsk, Ozinki, Petropavlovsk for 2007 - 6 months of 2009 (Thousand tons)

	RAILWAY CROSSING POINT ILETSK			RAILWAY CROSSING POINT OZINKI			RAILWAY CROSSING POINT PETROPAVLOVSK		
	2007	2008	2009-(6 months)	2007	2008	2009 (6 months)	2007	2008	2009 (6 months)
Volume of freight	**4 180**	**5 120**	**2 181**	**5 550**	**5 569**	**1 736**	**7 303**	**7 225**	**2 820**
including:									
Export	650	780	323	2 553	2 678	787	3 935	4 230	1 638
Import	2 466	3 015	1 354	1 651	1 181	510	2 126	1 639	604
Transit	1 064	1 325	504	1 346	1 710	439	1 242	1 356	578

Source: Report International Logistics Centres in Central Asia, 2010

As seen in the previous table (figure 16), the border stations of Sites Ozinki, Iletsk, Petropavlovsk are strategic tothe Kazakh railways with considerable volumes moved. In 2008 freight flows on a border site Taskala - Ozinki increased by 0,34 % and made 5 569 thousand tons, against 5 550 thousand tons in 2007. During the same time for 6 months of current year in comparison with the same period of last year the goods traffic has decreased twice and has made 1 736 thousand tons.

While goods flows through the border stations Zhajsan-Iletsk (border of the Aktyubinskaya and Orenburskaya areas) are low, during 2008 the freight flows increased by 22,5 % amounting to 5 120 thousand tons, against 4 180 thousand tons in 2007. For 6 months 2009 2 181 thousand tons were moved, which annualized reflects a 12% decrease from 2008 traffic levels.

Freight flows decreased through Petropavlovsk KZH – Petropavlovsk RZHD in 2008 by 1,1% to 7 225 thousand tons, compared with 7 303 thousand tons in 2007. The first half of 2009 is characterized by significant decline of 2 820 thousand tons that 18% lower indicators of the same period of last year.

According to the Transport Strategy of Kazakhstan till 2015 in the coming years is planned to increase the share of container cargo in the structure of cargo transportation of RK from the existing 4% to 30%. Site Sary-Agash - Arys - Kandagach - Uralsk - Ozinki is selected as one of the priority transit corridors of the republic.

Figure 17 Export, import and transit tonnages by country through the railway crossing point Ozinki for 2007-2008

COUNTRY	2007				2008			
	EXPORT	IMPORT	TRANSIT		EXPORT	IMPORT	TRANSIT	
			INPUT	OUTPUT			INPUT	OUTPUT
United Kingdom	0,7	-	-	-	0,53	-	-	-
Finland	0,67	0,01	0,02	-	0,58	-	-	-
Russia	0,25	0,81	0,11	-	0,38	0,49	0,15	-
Netherlands	0,23	-	0,01	-	0,26	-	-	-
Ukraine	0,17	0,21	-	-	0,41	0,2	-	-
Latvia	0,14	0,03	-	-	0,21	0,02	0,01	-
Italy	0,05	-	-	-	0,04	0,01	-	-
Poland	0,05	0,17	0,05	-	0,03	0,09	0,04	-
Estonia	0,05	0,01	-	-	0,01	0,01	-	-
Germany	0,04	0,01	-	-	0,05	0,01	-	-
Lithuania	0,03	0,12	0,06	-	0,01	0,08	0,06	-
Azerbaijan	0,02	-	-	-	0,04	-	-	-
Moldova	0,02	0,02	-	-	0,01	0,02	-	-
Spain	0,02	-	-	-	0,01	-	-	-
Greece	0,02	-	-	-	0,02	-	-	-
Saudi Arabia	0,02	-	-	-	0,05	-	-	-
Bulgaria	0,01	-	-	-	-	-	-	-
Belarus	0,01	0,1	0,15	-	0,03	0,11	0,23	-
Georgia	0,01	-	-	-	-	-	-	-
Czech	0,01	0,02	-	-	0,01	0,01	-	-
Turkey	0,01	0,01	-	-	-	0,01	-	-
Sweden	0,01	-	-	-	-	-	-	-
Belgium	0,01	-	0,01	-	-	-	-	-
Japan	0,01	-	-	-	-	-	-	-
Albania	-	-	-	-	0,01	-	-	-
Romania	-	-	0,01	-	0,01	-	0,01	-
Switzerland	-	-	-	-	0,01	-	-	-
Hungary	-	0,03	-	-	0,01	0,03	-	-
Denmark	-	-	-	-	0,01	-	-	-
Norway	-	-	-	-	0,01	-	-	-
USA	-	0,04	0,01	-	-	0,02	0,01	-
Austria	-	0,02	-	-	-	0,02	-	-
Brazil	-	0,01	-	-	-	-	-	-
Israel	-	0,01	-	-	-	-	-	-
Slovakia	-	-	0,01	-	-	0,02	-	-
China	-	-	-	0,02	-	-	-	0,07
Kyrgyz Republic	-	-	-	0,13	-	-	-	0,12
Tajikistan	-	-	-	0,05	-	-	-	0,05
Uzbekistan	-	-	-	0,69	-	-	-	0,97
Others	0,02	0,03	-	-	0,02	0,03	-	-
TOTAL:	**2,55**	**1,66**	**0,44**	**0,91**	**2,67**	**1,18**	**0,51**	**1,20**

Source: Report International Logistics Centres in Central Asia, 2010

As figure 17 shows the major countries - senders of transit goods following the results of 2008 carried through the borders Ozinki were: Belarus (45% of the total), Russia (29,4%), Poland (7,8%), Lithuania (11,7%), Latvia (1,9%), Romania (1,9%), United States (1,9%). The countries - recipients were: Uzbekistan (80,8%), Kyrgyz Republic (10%), China (5,8%), Tajikistan (4,1%).

Figure 18 Cargo tonnages through the all Russian railway border crossing points (except Ozinki)

BORDER STATION	2007				2008			
	EXPORT	IMPORT	TRANSIT	TOTAL	EXPORT	IMPORT	TRANSIT	TOTAL
Kulunda	6,13	1,63	0,25	**8,01**	7,01	1,24	0,28	**8,53**
Tobol	26,63	3,86	0,84	**31,33**	25,47	3,84	0,71	**30,02**
Aksarajskaya	8,49	2,28	2,76	**13,53**	10,59	2,07	3,24	**15,9**
Nikel-Tau	1,05	1,45	1,44	**3,94**	0,87	1,17	1,54	**3,58**
Presnogorkovskaya	12,49			**12,49**	18,22			**18,22**
Lokot	1,15	2,01	2,29	**5,45**	1,02	1,67	2,64	**5,33**

Source: Report International Logistics Centres in Central Asia, 2010

Sary-Agach is growing rapidly in importance for Central Asia, the countries of Persian Gulf, Eastern part of India. Data show that volumes of transportation of cargoes for last years through Sary-Agach - Keles dynamically increased. In 2008 the total amount of tonnage was 22,77 million tons which amounts to an increase of 2,27 million tons (or 11 %) from 2007.

Figure 19 Tonnage of Rail Traffic Crossing at Sary-Agach

	RAILWAY CROSSING POINT SARY-AGACH		
	2007	2008	2009 - 6 months
Volume of freight	**15 287**	**16 702**	**7 644**
including:			
Export	5 698	6 174	3 035
Import	1 792	1 218	311
Transit	7 797	9 310	4 298

Source: Report International Logistics Centres in Central Asia, 2010

Figure 20 Tonnage by Commodity passing through border crossing Sary-Agach for 2007 - 6 months of 2009

BORDER STATION	COMMODITY	EXPORT			IMPORT		
		2007	2008	2009-6 months	2007	2008	2009-6 months
SARY-AGACH	Grain	844	1 322	654	0	0	0
	Oil crude	675	606	377			
	Oil products	619	432	459	15	29	13
	Non-ferrous metals	381	308	100	135	93	6
	Ferrous ore	363	146	10	2	1	1
	Scrap Metal	150	153	158	0	0	0
	Chemical and mineral fertilizers	103	192	41	102	128	49
	Building materials	99	102	20	347	185	57
	Chemicals and soda	60	68	27	104	103	24
	Coal	3	13	1	3	17	
	Iron ore	1	4	9			
	Non-ferrous metals	1	3	0	1	0	0
	Others	2 399	2 825	1 178	1 083	663	161
Sary-Agach TOTAL		5 698	6 174	3 035	1 792	1 218	311

Source: Report International Logistics Centres in Central Asia, 2010

As seen from the above figures, the share of transit transportation accounts for 55% of the volumes of all freight flow through the railway crossing Sary-Agach, respectively, on an export direction 36% and import 7%. The volume of transit transportation in 2008 amounted to 9 310 tones, compared with 2007 increased by 1 513 thousand tons (19,4%). The volume of the first half of 2009 compared to the same period of 2008 remained the same; it also

prevails over other directions. The volume increase is directly related to the growing trade between Central Asian countries and Europe.

Also it would be desirable to note, increase in volume of export cargoes through Sary-Agach: in 2008 6 174 thousand tons were exported, 8,3 % more than in 2007. The volume in the first half of 2009 is equal to an indicator for the corresponding period of 2008.

In the import direction volumes fell in 2008 by 47% or 1 218 thousand tons compared with 1 792 thousand tons in 2007. For the first half of 2009 volumes in the import direction have decreased almost in 2 times in comparison with a similar indicator of 2008.

Forwarding agents explain by the fact that customers (clients) and freight-forwarders for transportation of import cargoes to Kazakhstan from the countries of East India, the United Arab Emirates choose routes through the Chinese transit ports. First, transit time through the Chinese ports (as Lianyungang, Xingang, Qingdao) through Alashankou/Dostyk practically identical, but more often less than through port Bandar Abbas/border crossings Sarakhs/Sary-Agach. The basic delays in time, it is – a change of wheel sets, the lack of cars, traffic congestion at the border crossing with Iran. Secondly, the freight rate is much cheaper in the transport through China than through the territory of Iran. Thirdly, reliability of cargo, the awareness in the process of cargo following. This route Bandar Abbas/Saraks/Sary-Agach remains competitive in import transportations only in a direction of the Western part of Kazakhstan, as well as the organization of transportations of dangerous cargoes which are forbidden for transportation through the territory of China.

Figure 21 Comparative analysis of cargo transportation in large-capacity containers from Dubai (UAE) to Almaty (Kazakhstan)

ROUTE	COST (USD for 20'DC container)	TRANSIT TIME
	via port Qingdao (China)	
FOB Jebel Ali – FOR Almaty	4,025	+/- 40 days
	via port Bandar Abbas (Iran)	
FOB Jebel Ali – FOR Almaty	4,675	+/- 45 days

Source: Freight Forwarding company MAXX Intermodal Systems NV. 2006 UNESCAP

Figure 22 Export, import and transit tonnages through the railway crossing point Sary-Agach (Billion tons)

COUNTRY	2007				2008			
	EXPORT	IMPORT	TRANSIT		EXPORT	IMPORT	TRANSIT	
			INPUT	OUTPUT			INPUT	OUTPUT
Uzbekistan	3,16	1,61	1,6	-	4,06	1,03	1,71	-
Tajikistan	1,57	0,04	0,24	-	1,49	0,02	0,21	-
Iran	0,78	0,1	0,02	-	0,44	0,08	0,02	-
Afghanistan	0,39	0,01	-	-	0,88	0,02	-	-
Turkmenistan	0,39	0,02	0,02	-	0,93	0,07	0,01	-
Kyrgyz Republic	0,28	-	0,09	0,27	0,29	-	0,11	0,36
Azerbajan	0,01	-	-	-	-	-	-	-
Italy	0,01	-	-	-	-	-	-	-

Pakistan	0,01	0,01	-	-	0,01	-	-	-
Netherlands	-	-	-	0,01	-	-	-	-
Austria	-	-	-	0,01	-	-	-	0,01
Argentina	-	-	-	0,01	-	-	-	-
Belarus	-	-	-	0,11	-	-	-	0,17
Kazakhstan	-	-	-	0,12	-	-	-	0,21
China	-	-	-	1,09	-	-	-	1,66
Latvia	-	-	-	0,02	-	-	-	0,07
Lithuania	-	-	-	0,05	-	-	-	0,08
Poland	-	-	-	0,05	-	-	-	0,06
Republic of Korea	-	-	-	0,07	-	-	-	0,06
Russia	-	-	-	3,94	-	-	-	4,57
Romania	-	-	-	0,01	-	-	-	0,02
Slovakia	-	-	-	0,01	-	-	-	-
Ukraine	-	-	-	0,1	-	-	-	0,14
Finland	-	-	-	0,02	-	-	-	-
Estonia	-	-	-	0,01	-	-	-	0,01
Bulgaria	-	-	-	-	-	-	-	0,01
Brazil	-	-	-	-	-	-	-	0,01
USA	-	-	-	-	-	-	-	0,01
TOTAL:	**5,70**	**1,79**	**2,02**	**5,78**	**6,17**	**1,22**	**2,06**	**7,25**

Source: Report International Logistics Centres in Central Asia, 2010

The main countries benefiting from transit cargoes during 2008 through Sary-Agach were: Uzbekistan (83% of the total), Tajikistan (10%), Kyrgyz Republic (5,3%), Iran (0,9%), Turkmenistan (0,4%). Countries - recipients were: Russia (63%), China (22,8%), Kyrgyz Republic (4,9%), Belarus (2,3%), Ukraine (1,9%), Lithuania (1,1%), Latvia (0,9%), Poland (0,8%), Republic of Korea (0.8%), Romania (0,2%), Estonia, Bulgaria, Brazil, United States (0,1%).

Figure 23 The total volume of cargo transportation through the rest railway crossings, bordering with Uzbekistan

BORDER STATION	2007				2008			
	EXPORT	IMPORT	TRANSIT	TOTAL	EXPORT	IMPORT	TRANSIT	TOTAL
Oazis	0,44	0,08	2,35	**2,87**	0,42	0,14	2,94	**3,5**
Pahtaaral	0,07			**0,07**	0,06			**0,06**

Source: Report International Logistics Centres in Central Asia, 2010

As seen from the table, export shipments dominate the overall transport in interstate communications and constitute 63,8%. 89% of export shipments are carried out through the railway border abutting points Tobol, Aksarajskaya, Presnogorkovskaya, Sary-Agach, Kulunda and Petropavlovsk.

Tobol, Iletsk, Aksarajskaya, Lokot, Petropavlovsk, Kulunda and Ozinki account for 80% of imports and Sarah-Agach, Aksarajskaya, Oasis, Lokot, Lugovaya and Ozinki account for more than 80% of transit cargoes.

“Dostyk” and “Korgas” are the main rail and road posts, respectively. Dostyk (international border crossing point Dostyk-Alashenkou) plays defining role in a direction of regional transit - between Russia, the countries of the Central Asia and China. Dostyk is therefore a strategic border station in the transcontinental land route between China, South East Asia and Europe, Central Asia, the European part of Russia.

Analysis of the transport of goods through the crossing Dostyk - Alashenkou over the past 10 years shows that the total volume of transported cargo increased by almost 3 times.

Figure 24 Rail Tonnages Crossing at Dostyk

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009 - 6 months
Volume of freight	**4 294**	**5 009**	**5 800**	**7 528**	**9 333**	**11 074**	**13 119**	**12 119**	**12 612**	**7 641**
including:										
Export	3 795	4 387	5 164	6 590	7 940	9 071	10 001	7 000	6 435	5 144
Import	498 7	622 1	636 2	937 9	1 393	2 003	3 119	5 045	6 177	2 496

Source: Report International Logistics Centres in Central Asia, 2010

In 2008 the total volume increased by 4% and amounted to 12 612 tons, against 12 046 tons in 2007. In comparison with the same period of 2008, the cargo turnover on the station Dostyk for the first half of 2009 has increased by 26,8% or 1 617 tons and amounted to 7 641 tones.

For the last few years the change of character of freight flow is observed. The export direction earlier prevailed, since 2007 the freight flow of transit cargoes has increased from China to the countries of Central Asia and Central Europe. So, in 2008 it was handed over to China export cargoes of 6 435 thousand tons, that on 565 thousand tons (8,7 %) less in comparison with the same period of 2007. In comparison with the same period 2008, in the first half-year 2009 has occurred substantial growth of transportation of export cargoes by 63 % or 1 987 thousand tons.

From 2007 to 2008 the following are the annual growth rates of major commodities through Dostyk: mineral oil 73 %, non-ferrous metals 38 %, ore metal 59 %, ferrous metals 38 %, chemicals 17 %, cotton 111 %.

Figure 25 Export Rail Tonnages Through Dostyk for 6 months of 2009

COMMODITY	6 months 2009
Oil	156 553
Ferrous metals	638 903
Pellets	1 671 195
Alumina	
Chrome ore	1 312 210
Ore color	253 650
Non-metallic ore	14 112
Metal scrap	54 935
Fertilizer	
Wood	150
Cotton	8 114
Non-ferrous metals	192 192
Chemicals	310 963
Cargoes in containers	63 221
Equipment	510
Others	2 923
TOTAL	4 681 631

Source: Report International Logistics Centres in Central Asia, 2010

In 2008 it was accepted from China of import cargoes of 6 177 thousand tons, that on 22 % more in comparison with the same period of 2007. In comparison with the same period of

2008, in the first half-year 2009 has occurred reduction of volume of transportation of import cargoes by 14,8 % or 37 thousand tons. Obviously, reduction of volumes of import is connected with proceeding reduction in demand for the Chinese goods and thus reduction of orders.

Figure 26 Import Rail Tonnages through Dostyk for 6 months of 2009

COMMODITY	6 months 2009
Cox	27 240
Chemicals	61 353
Building materials	117 464
Equipment	47 224
Provisions	74 565
Tea	507
Grain	1 200
Tobacco	0
Consumer goods	0
Cargoes in containers	425 766
Non-metallic ore	0
Cars	339
Ferrous metals	267 094
Non-ferrous metals	7 590
Others	42 630
TOTAL	1 072 972

Source: Report International Logistics Centers in Central Asia, 2010

The analysis of export and import of containers for the period from 2005 to 2008 shows that the container shipments through the border crossing Dostyk had been increased at 2,6 times. Import prevails in the total volume of container shipments – 25,5% in 2008. Thus, in 2008 the volume of transported cargo in large-capacity containers made up 136 195 units, exceeding the figures in 2007 on import at 18 994 containers (520 170 tons) and on export at 7 524 containers (51 291 tons) more. The comparative analysis shows that the volume of transportation from 2007 to 2008 was increased at 1.2 times (24%).

The main countries - senders of transit goods following the results of 2008, transported through Dostyk were: Uzbekistan, Kyrgyzstan, Tajikistan, Russia, Turkmenistan. The countries - receivers were: Uzbekistan, Kyrgyzstan, Tajikistan, Russia, Turkmenistan, Afghanistan, Azerbaijan, etc.

Figure 27 Transit of goods through Dostyk-Alashenkou in large-capacity containers

(Units: number of containers)

COUNTRY	TRANSIT-To China		TRANSIT- From China	
	2007	2008	2007	2008
Uzbekistan	8 918	14 618	18 361	27 639
Kyrgyzstan	2 942	4 571	7 496	10 805
Tajikistan	1 088	3 948	5 793	8 919
Russia	145	253	1 772	6 350
Azerbaijan	4	-	36	136
Turkmenistan	778	8	1 537	2 675
Afghanistan	-	2	467	578
Germany	-	-	-	125
Czech Republic	-	-	-	52
Estonia	-	-	-	14
Finland	-	-	-	1
Georgia	-	-	-	4
Belarus	-	-	-	3
Ukraine	-	-	3	-
Latvia	-	-	2	-

Total	13 875	23 400	35 467	57 301

Source: Report International Logistics Centers in Central Asia, 2010

Figure 28 Transit Containers by Commodity Type Dostyk-Alashenkou for 6 months of 2009

(Tons)

COUNTRY	COMMODITY	TRANSIT-EXPORT	TRANSIT-IMPORT
RUSSIA	Ferrous metals		8 904
	Pellets	82 085	
	Ore color	7 321	
	Non-metallic ore		0
	Fertilizer	1 385	
	Wood	30 948	
	Non-ferrous metals		332
	Chemicals	23 118	
	Cargoes in containers		31 888
	Equipment	4	10 412
	Others	482	2 637
	Cox		25 020
	Chemicals		27 585
	Building materials		2 403
	Provisions		8 111
	Tea		480
	Grain		0
	Tobacco		0
	Consumer goods		0
	Cars		0
Russia TOTAL		**145 343**	**117 630**
UZBEKISTAN	Oil	111 085	
	Ferrous metals		220 011
	Ore color	961	
	Non-metallic ore		0
	Fertilizer	38 351	
	Cotton	118 606	
	Non-ferrous metals		1 642
	Chemicals	9 588	38 361
	Cargoes in containers	21 513	440 772
	Equipment	87	24 320
	Others	811	36 350
	Building materials		43 831
	Provisions		3 589
	Tea		18 211
	Grain		718
	Tobacco		0
	Consumer goods		0
	Cars		0
Uzbekistan TOTAL		**301 002**	**833 206**
KYRGYZ REPUBLIC	Oil	1 686	
	Ferrous metals		2 075
	Non-metallic ore		0
	Non-ferrous metals	700	347
	Chemicals		3 785
	Cargoes in containers	4 004	100 028
	Others	136	5 411
	Building materials		13 231
	Equipment		43
	Provisions		1 002
	Tea		580
	Grain		80
	Tobacco		240
	Consumer goods		0
	Cars		0
Kyrgyz Republic TOTAL		**6 526**	**126 822**
TURKMENISTAN	Ferrous metals		83 169
	Non-metallic ore		0
	Non-ferrous metals		450
	Chemicals	2 490	25 254
	Cargoes in containers	12	52 442
	Others	292	7 101

	Building materials		14 663
	Equipment		69 397
	Provisions		264
	Tea		1 062
	Grain		240
	Tobacco		0
	Consumer goods		0
	Cars		0
Turkmenistan TOTAL		**2 794**	**253 681**
TAJIKISTAN	Ferrous metals		10 103
	Ore color	1 171	
	Cotton	8	
	Non-ferrous metals	244	1 633
	Chemicals		2 403
	Cargoes in containers	3 302	66 697
	Equipment	25	6 403
	Others	1 966	12 688
	Building materials		25 829
	Provisions		2 358
	Tea		582
	Grain		1 020
	Tobacco		0
	Consumer goods		0
	Cars		0
Tajikistan TOTAL		**6 716**	**129 307**
BELARUS	Ferrous metals	247	
	Cargoes in containers		73
	Equipment	597	
Belarus TOTAL		**844**	**73**
UKRAINE	Chemicals		349
Ukraine TOTAL			**349**
GEORGIA	Others	60	
Georgia TOTAL		**60**	
AZERBAIJAN	Ferrous metals		120
	Cargoes in containers		292
	Equipment		60
	Others		219
	Building materials		1 376
Azerbaijan TOTAL			**2 212**
AFGHANISTAN	Ferrous metals		1 904
	Chemicals		42
	Cargoes in containers		7 176
	Others		55
	Building materials		1 838
	Equipment		21
	Provisions		176
	Tea		249
	Grain		0
	Tobacco		0
	Consumer goods		0
Afghanistan TOTAL			**11 461**
IRAN	Chemicals		115
IRAN TOTAL			**115**
LATVIA	Equipment		45
	Cargoes in containers		223
Latvia TOTAL			**268**
TOTAL		**463 365**	**1 475 124**

Source: Report International Logistics Centers in Central Asia, 2010

Check point Korgos is the Kazakhstan's largest transportation hub with the highest transit potential. It is located in 670 kilometers from Urumqi, the administrative center of Xinjiang, and 378 km from Almaty, the economic center of Central Asia. This border crossing is the most convenient and important in this area to road check points and the nearest Chinese check point to the countries of Central and Western Asia, and also Europe.

Statistical review of Uzbekistan.

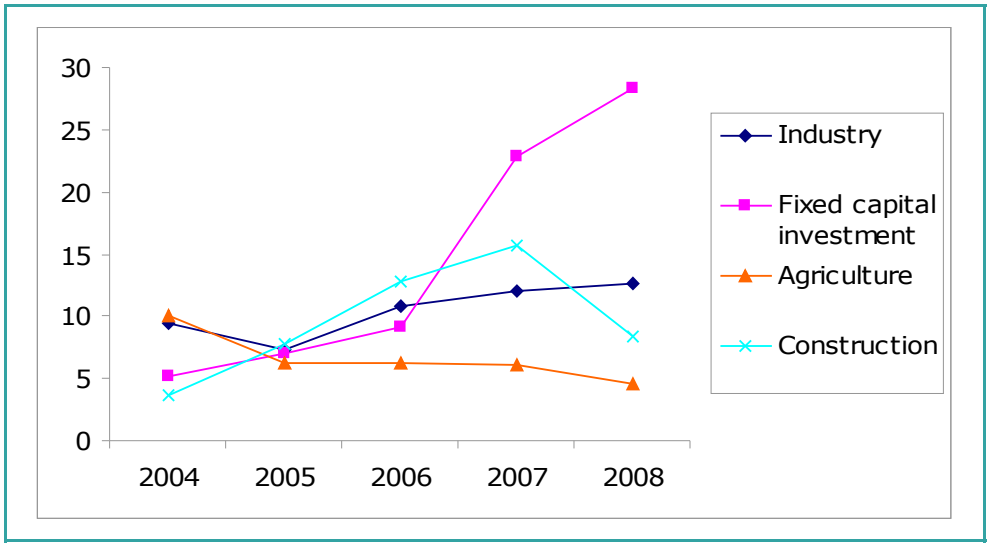
GDP growth in 2008 declined to an estimated 9.0% from 9.5% in 2007. Industry, with 12.7% growth, was led by increased production of fuel, machinery, and ferrous metals, which collectively accounted for 39.2% of total industrial output. The hydrocarbon and metals-producing subsectors have boomed in recent years as a result of surging global commodity prices, buoyant external demand, and heavy public and private investment.

Agriculture lagged behind, growing by only 4.5% in 2008. Drought affected both cereal and cotton production; additionally, degrading soil quality hit cereal output particularly, and a smaller sown area cut cotton production (92.3% of previous year).

The contraction in external demand for major export commodities (excluding gas) and the decline in commodity prices in 2008 are expected to continue in 2010. An increase in gas exports, which are expected to double in dollar terms this year (2009), will partly offset the decline in non-hydrocarbon exports.

Responding to the need to sustain economic growth, employment, and social stability, the Government outlined a large-scale anticrisis package in four presidential decrees at the end of 2008. It is targeted at export promotion, greater demand for domestically produced goods, higher energy efficiency, and more development of small and medium-size enterprises (SMEs). To help meet these objectives, the Government will increase domestic investment through budget spending and Federal Reserve District investment. Much of the public investment will be directed toward transport and social services in rural areas.

Figure 29 Growth of basic macroeconomic indicators annual change, Uzbekistan



Source: REVIEW of the existing situation in the market of the international transportations for the Central Asian Republics, 2009

Figure 30 Freight Traffic by Mode (tons and ton/km)

	January-December 2008	In % to January-December 2007
Freight shipped by transport, million tons	**966,1**	**109,9**
Railway	62,9	108,5
Motor	826,8	111,0
air, thousand tons	6,0	89,6
Pipeline	76,4	100,4
Freight turnover of transport, billion ton-kilometers	**84,0**	**106,7**
Railway	23,4	108,4
Motor	21,3	117,4
Air	83,3	108,6
Pipeline	39,2	100,7

Source: The State Committee of the Republic of Uzbekistan on Statistics

The percentage of rail transport in Uzbekistan (ГАЖК Uzbekistan Temir Yollari) (without pipeline) is over 65% of the total traffic of all modes of transport. The aggregate length of Uzbekistan railroad is 4,392.7 km.

Figure 31 Tons Moved by Rail 2003 – 2008 in Uzbekistan

YEAR	LOCAL	EXPORT	IMPORT	TRANSIT	TOTAL
2003	40 553 000	4 400 690	3 301 319	7 637 285	**55 892 294**
2004	39 918 000	5 403 911	3 836 036	7 300 768	**56 458 715**
2005	41 068 000	4 748 426	3 883 099	8 094 770	**57 794 295**
2006	44 900 000	5 110 591	5 043 163	8 571 690	**63 625 444**
2007	51 673 181	6 366 120	7 102 184	9 621 754	**74 763 239**
2008	54 238 000	5 117 122	7 989 374	10 971 243	**78 315 739**

Source: Uzbekistan Temir Yollari

Figure 32 Rail Tonnage by Traffic Type

YEAR	IMPORT/EXPORT			TRANSIT			LOCAL		
	Millions tons	Annual change, %	Average annual growth	Millions tons	Annual change %	Average annual growth	Millions tons	Annual change %	Average annual growth
2003	7,70	0		7,64	0		40,55	0	
2004	9,24	20		7,30	-4		39,92	-2	
2005	8,63	-7	12%	8,10	11	8%	41,07	3	5%
2006	10,15	18		8,57	6		44,90	9	
2007	13,50	33		9,62	12		51,67	15	
2008	13,10	-3		10,97	14		54,24	5	

Source: Uzbekistan Temir Yollari

Figure 33 Rail Exports by Country of Destination (Tons)

COUNTRY	2004	2005	2006	2007	2008
Azerbaijan	173 611	6 375	23 594	47 371	9 130
Armenia	0	50	633	114	462
Belarus	9 269	5 943	9 111	14 153	13 465
Estonia	1 707	16 671	2 907	2 176	82 178
Georgia	69 498	4 453	7 689	20 491	4 675
Kazakhstan	451 974	739 099	1 078 177	1 765 534	1 211 571
Kyrgyzstan	227 076	266 859	188 812	331 606	245 863
Latvia	123 891	106 784	75 419	39 768	42 917
Lithuania	5 644	14 717	16 994	50 989	42 679
Moldova	2 673	1 191	1 730	9 144	5 734
Russia	615 551	665 819	833 358	808 551	655 348
Tajikistan	521 621	449 519	580 275	477 153	12 190
Turkmenistan	1 389 382	301 093	69 432	155 446	297 541
Ukraine	66 105	100 814	88 818	225 086	237 012
Galaba	359 745	545 238	511 302	518 081	631 417
Other countries	1 386 164	1 516 047	1 622 340	1 900 457	1 624 940
TOTAL	**5 403 911**	**4 740 672**	**5 110 591**	**6 366 120**	**5 117 122**

Source: Uzbekistan Temir Yollari

Figure 34 Rail Imports by Country of Origin (Tons)

COUNTRY	2004	2005	2006	2007	2008
Azerbaijan	3 242	4 171	4 976	4 725	7 928
Armenia	53	248	47	0	63
Belarus	92 370	137 845	176 047	154 924	180 221
Estonia	3 262	4 720	3 558	5 863	3 867
Georgia	7 960	3 405	1 798	1 769	1 704
Kazakhstan	1 498 971	1 347 210	1 923 224	2 930 502	3 200 319
Kyrgyzstan	106 224	62 551	65 115	157 565	243 834
Latvia	25 016	19 697	15 173	18 967	62 299
Lithuania	37 076	82 009	25 449	17 465	21 540
Moldova	3 286	4 970	3 545	5 238	4 277
Russia	1 161 162	1 357 682	1 711 641	2 345 335	2 429 058
Tajikistan	151 963	112 092	175 180	160 038	127 708
Turkmenistan	24 156	23 465	9 409	18 586	31 939
Ukraine	150 365	159 298	225 592	288 474	362 251
Other countries	570 930	553 946	702 409	992 733	1 312 366
TOTAL	**3 836 036**	**3 873 309**	**5 043 163**	**7 102 184**	**7 989 374**

Source: Uzbekistan Temir Yollari

Figure 35 Rail Transit Traffic by Country (Tons)

COUNTRY	2004	2005	2006	2007	2008
Azerbaijan	224 671	272 571	357 416	222 366	254 482
Armenia	0	0	0	0	0
Belarus	132 370	140 630	100 827	147 544	120 466
Estonia	502	253	197	541	3 737
Georgia	1 682	1 817	1 631	2 084	1 537
Kazakhstan	2 160 948	2 637 422	2 820 409	3 394 363	3 614 668

Kyrgyzstan	342 068	388 415	553 472	691 179	492 392
Latvia	2 718	6 618	6 295	4 623	7 905
Lithuania	38 993	65 948	44 875	52 103	70 442
Moldova	494	1 120	746	1 757	3 856
Russia	1 032 423	1 073 425	1 448 805	1 863 843	2 511 971
Tajikistan	884 160	827 251	842 977	888 742	773 250
Turkmenistan	1 467 955	1 517 866	955 010	658 688	755 643
Ukraine	243 092	247 125	215 938	201 050	303 047
Other countries	768 692	916 973	1 223 092	1 492 871	2 057 847
TOTAL	7 300 768	**8 097 434**	**8 571 690**	**9 621 754**	10 971 243

Source: Uzbekistan Temir Yollari

Figure 36 Rail Exports by Commodity (Tons)

COMMODITY	2005	2006	2007	2008
Coal	1 699	3 650	9 103	20 613
Cox	0	0	1 825	3 358
Oil products	443 728	335 588	866 930	1 048 168
Ore	1 110	360	224	473
Alumina	8 574	9 359	0	0
Ferrous metal	236 074	279 673	313 598	285 059
Machinery	8 129	8 908	11 620	8 286
Metal structures	365	646	749	71
Metal scrap	597	1 173	883	676
Agricultural machinery	793	1 444	3 365	4 178
Vehicles	56 825	79 298	103 468	98 256
Ferrous metal	97 421	100 208	155 494	116 159
Fertilizer	512 225	580 125	968 936	787 262
Building materials	218 886	258 463	347 894	205 703
Cement	942 138	1 130 632	1 325 343	828 751
Wood	1 281	2 515	2 843	1 027
Sugar	1 288	4 034	73	50
Provisions	156 113	162 497	162 086	122 324
Vegetables, fruits	360 892	471 889	435 713	315 992
Manufactured products	86 374	138 188	169 521	131 764
Raw cotton	29 816	253 446	337 845	247 922
Cotton fiber	929 733	672 108	614 104	514 739
Grain	162 918	175 229	133 949	2 682
Flour	176 742	161 336	118 090	79 808
Others	303 951	279 822	282 464	293 801
TOTAL	**4 737 672**	**5 110 591**	**6 366 120**	**5 117 122**

Source: Uzbekistan Temir Yollari

Figure 37 Rail Imports by Commodity (Tons)

COMMODITY	2005	2006	2007	2008
Coal	16 264	6 076	8 909	5 642
Cox	14 412	13 512	14 275	16 194
Oil products	265 092	484 876	851 739	1 102 464
Ore	120 311	128 344	184 727	158 513

Alumina	116	128	0	0
Ferrous metal	365 937	436 562	806 333	810 796
Machinery	47 243	57 878	90 260	116 005
Metal structures	1 872	3 683	5 767	8 638
Metal scrap	82 981	124 870	173 732	172 641
Agricultural machinery	12 555	14 894	18 347	17 158
Vehicles	120 261	150 242	177 604	204 798
Ferrous metal	25 531	13 998	32 648	34 224
Fertilizer	137 595	90 874	28 221	80 139
Building materials	314 661	535 793	756 977	832 813
Cement	4 069	2 699	6 721	11 940
Wood	857 088	1 181 245	1 637 995	1 856 288
Sugar	291 372	288 607	295 689	392 789
Provisions	117 966	137 134	163 327	205 280
Vegetables, fruits	1 171	8 026	20 970	12 088
Manufactured products	65 642	76 658	115 881	120 009
Raw cotton	0	0	60	93
Cotton fiber	10 760	14 594	18 570	8 547
Grain	107 766	183 169	221 069	300 918
Flour	408 689	450 252	752 555	717 781
Others	483 955	639 049	719 808	803 616
TOTAL	**3 873 309**	**5 043 163**	**7 102 184**	**7 989 374**

Source: Uzbekistan Temir Yollari

Figure 38 Rail Transit Traffic by Commodity (Tons)

COMMODITY	2005	2006	2007	2008
Coal	9 667	18 992	15 563	52 332
Cox	45 342	36 270	85 085	189 780
Oil products	2 031 825	2 244 233	2 189 287	1 862 362
Ore	9 954	14 264	33 699	27 060
Alumina	753 454	839 902	842 037	837 215
Ferrous metal	525 562	499 816	652 851	699 594
Machinery	40 348	32 492	54 637	101 976
Metal structures	10 195	19 929	15 925	36 516
Metal scrap	82 501	141 754	102 770	88 059
Agricultural machinery	16 454	5 363	21 624	20 341
Vehicles	64 741	86 867	123 511	162 592
Ferrous metal	387 195	422 788	434 870	415 275
Fertilizer	249 997	104 570	157 138	189 621
Building materials	619 064	400 572	404 275	496 121
Cement	48 533	18 090	42 578	138 697
Wood	426 856	565 119	729 303	799 447
Sugar	177 482	175 927	198 941	121 579
Provisions	322 203	319 805	373 321	514 127
Vegetables, fruits	70 893	93 301	175 659	135 921
Manufactured products	141 729	160 001	178 127	209 604
Raw cotton	186 290	162 336	134 468	107 638
Cotton fiber	180 472	153 922	139 487	98 399

Grain	370 436	459 210	743 318	1 293 013
Flour	509 220	630 288	751 556	1 182 190
Others	817 666	965 879	1 021 724	1 191 784
TOTAL	**8 098 079**	**8 571 690**	**9 621 754**	**10 971 243**

Source: Uzbekistan Temir Yollari

Of all railway border stations, Sary-Agach border station with Kazakhstan, near to Tashkent, is the most important with regard to transport volumes.

Figure 39 Tonnage by Commodity Crossing Sary-Agach Border Station during 2008 (Kazakhstan)

BORDER STATION	COMMODITY	EXPORT	IMPORT	TRANSIT
SARY-AGACH	Vehicles	81 364	26 098	7 777
	Alumina			5 555
	Grain	1 209	270 940	1 097 433
	Coal	17 026	3 411	29 072
	Cox	2 778	16 175	120
	Wood	525	1 591 923	297 907
	Metal scrap	469	140 792	20 780
	Machinery and equipment	5 443	43 402	46 553
	Metal structures	60	7 737	23 226
	Flour		624 475	886 597
	Oil products	441 366	501 639	225 461
	Vegetable and fruits	301 705	7 765	695
	Food products	63 574	143 860	109 642
	Industrial products	64 016	40 318	38 395
	Others	350 825	836 545	660 700
	Ore	322	152 438	8 297
	Agricultural machinery	398	12 533	438
	Sugar		102 068	3 926
	Building materials	158 402	659 794	168 792
	Fertilizer	384 619	72 769	130 389
	Cotton fiber	37 011		715
	Raw cotton	160 255	78	
	Non-ferrous metal	113 483	19 367	5 610
	Cement	471 455	4 765	68 999
	Ferrous metal	91 311	468 046	241 807
Sary-Agach TOTAL		**2 747 616**	**5 746 918**	**4 078 886**

Source: Uzbekistan Temir Yollari

Figure 40 Tonnage by Commodity Crossing Karakalpakia Border Station during 2008 (Kazakhstan)

BORDER STATION	COMMODITY	EXPORT	IMPORT	TRANSIT
KARAKALPAKIA	Vehicles	15 248	4 316	
	Alumina			625

	Grain	324	21 062	69 167
	Coal		60	
	Cox			1 429
	Wood	121	96 785	
	Metal scrap		1 594	930
	Machinery and equipment	389		900
	Metal structures	10	138	40
	Flour		26 066	16 557
	Oil products	125 601	3 332	31 209
	Vegetable and fruits	4 879	1 342	
	Food products	48 426	3 177	1 485
	Industrial products	10 587	982	
	Others	68 308	70 300	133 595
	Ore		269	
	Agricultural machinery		441	
	Sugar		275 853	
	Building materials	5 477	8 079	10
	Fertilizer	146 533	3 349	107
	Cotton fiber	498		
	Raw cotton	51 355		
	Non-ferrous metal	83	153	
	Cement	136 687	1 814	
	Ferrous metal	301	221 111	62 111
Karakalpakia TOTAL		**614 827**	**760 269**	**318 165**

Source: Uzbekistan Temir Yollari

Figure 41 Tonnage by Commodity Crossing Hodzhadavlet Border Station during 2008 (Turkmenistan)

BORDER STATION	COMMODITY	EXPORT	IMPORT	TRANSIT
HODZHADAVLET	Vehicles	1 103	624	
	Grain	743	566	
	Wood		9	
	Metal scrap		340	
	Machinery and equipment	700	167	
	Flour			2 152
	Oil products	46 378	5 495	
	Vegetable and fruits	3 776		
	Food products	2 766	5 351	68
	Industrial products	8 700	15 240	
	Others	30 338	81 577	
	Ore	60	4 910	
	Agricultural machinery	3 126	28	
	Sugar	50	30 718	
	Building materials	17 868	3 691	
	Fertilizer	151 439		
	Cotton fiber	463 676	90	
	Raw cotton	26 667		
	Non-ferrous metal	938	4 340	
	Cement	96 956	1 276	
	Ferrous metal	81 688	1 390	
Hodzhadavlet TOTAL		**936 972**	**143 926**	**2 220**

Source: Uzbekistan Temir Yollari

Figure 42 Tonnage by Commodity Crossing RZD 449 Border Station during 2008 (Turkmenistan)

BORDER STATION	COMMODITY	EXPORT	IMPORT	TRANSIT
RZD 449	Others	64	10	
	Fertilizer	8 620		
RZD 449 TOTAL		**8 684**	**10**	

Source: Uzbekistan Temir Yollari

Figure 43 Tonnage by Commodity Crossing Talimarjan Border Station during 2008 (Turkmenistan)

BORDER STATION	COMMODITY	EXPORT	IMPORT	TRANSIT
TALIMARJAN	Wood		110	
	Machinery and equipment	138		
	Food products		158	
	Others	18	2 529	
	Building materials	69	650	
	Fertilizer	6 818		
	Cotton fiber		4 071	
	Cement	1 941		
Talimarjan TOTAL		**8 984**	**7 518**	

Source: Uzbekistan Temir Yollari

Figure 44 Tonnage by Commodity Crossing Gazojak Border Station during 2008 (Turkmenistan)

BORDER STATION	COMMODITY	EXPORT	IMPORT	TRANSIT
GAZOJAK	Building materials	1 657		
Gazojak TOTAL		**1 657**		

Source: Uzbekistan Temir Yollari

Figure 45 Tonnage by Commodity Crossing Tahiatash Border Station during 2008 (Turkmenistan)

BORDER STATION	COMMODITY	EXPORT	IMPORT	TRANSIT
TAHIATASH	Industrial products	76		
	Others	3 576	610	
	Ferrous metal	140		
Tahiatash TOTAL		**3 792**	**610**	

Source: Uzbekistan Temir Yollari

Figure 46 Export Tonnage by Commodity Crossing Dostyk Border Station

STATION OF DESTINATION	BORDER STATION	2005	2006	2007	COMMODITY
DOSTYK	**SARY-AGACH**	0	56	0	Coal
		104 474	89 941	53 044	Oil products
		0	50	0	Ore
		50	1 230	0	Ferrous metal
		413	0	157	Machinery and equipment
		0	0	1 250	Non-ferrous metal
		104 081	51 223	2 961	Fertilizer
		600	77	0	Building materials
		58	0	0	Vegetable and fruits
		0	40	0	Wood
		0	183	0	Sugar
		0	0	120	Food products
		210	405	413	Industrial products
		39	59 818	67 926	Raw cotton
		84 450	126 249	49 492	Cotton fiber
		0	14	0	Flour
		50 754	34 794	39 665	Others
Dostyk TOTAL		**345 129**	**364 080**	**215 028**	

Source: Uzbekistan Temir Yollari

Figure 47 Import Tonnage by Commodity Crossing Dostyk Border Station

STATION OF DEPARTURE	BORDER STATION	2005	2006	2007	COMMODITY
DOSTYK	**SARY-AGACH**	0	0	148	Coal
		368	1 147	2 405	Oil products
		3 712	9 732	37 394	Ferrous metal
		1 271	10 509	14 534	Machinery and equipment
		24	1 410	1 306	Metal structure
		19	0	103	Metal scrap
		0	26	0	Agricultural machinery
		66	388	854	Vehicles
		375	1 479	3 212	Non-ferrous metal
		0	240		Fertilizer
		10 305	15 086	30 368	Building materials
		591	1 713	3 430	Cement
		5 878	17 137	35 951	Wood
		0	0	60	Sugar
		21 072	25 507	27 228	Food products
		0	0	191	Vegetable and fruits
		11 451	21 341	34 083	Industrial products
		1 262	8 773	6 119	Grain
		0	0	180	Flour
		0	84	0	Cotton fiber
		93 410	164 864	282 610	Others
	Sary-Agach TOTAL	**149 804**	**279 436**	**480 176**	
	KANIBADAM	0	0	24	Ferrous metal
		0	0	1	Cement

		0	0	10	Industrial products
		31	0	0	Food products
		166	206	13	Others
	Kanibadam TOTAL	**197**	**206**	**48**	
Dostyk TOTAL		**150 001**	**279 642**	**480 224**	

Source: Uzbekistan Temir Yollari

Figure 48 Transit Tonnage by Commodity Crossing Dostyk Border Station

STATION OF DEPARTURE / DESTINATION	BORDER STATION	2005	2006	2007	COMMODITY
DOSTYK	**SARY-AGACH**	11 124	61 306	144 083	Ferrous metal
		3 446	4 009	13 397	Machinery and equipment
		386	43	50	Metal scrap
		17 187	15 995	12 197	Food products
		11 572	28 872	15 465	Building materials
		120	900	3 692	Cement
		103 135	160 113	259 658	Others
		3 683	5 376	7 836	Non-ferrous metal
		34 028	45 847	38 238	Industrial products
		954	8 051	14 286	Grain
		0	120	78	Coal
		0	1 380	2 880	Cox
		42 470	66 440	47 324	Oil products
		6 668	5 940	8 769	Ore
		148	396	1 243	Metal structure
		82	136	232	Agricultural machinery
		157	1 454	1 541	Vehicles
		1 138	3 949	7 366	Wood
		0	0	1 371	Flour
		0	64	243	Fertilizer
		360	0	25	Vegetable and fruits
		0	60	0	Sugar
		0	3 888	541	Raw cotton
		8 993	9 943	7 942	Cotton fiber
Dostyk TOTAL		**245 651**	**424 282**	**588 457**	

Source: Uzbekistan Temir Yollari

Figure 49 Export Tonnage by Commodity Crossing Sarakhs Border Station

STATION OF DESTINATION	BORDER STATION	2005	2006	2007	2008	COMMODITY
SARAKHS	**HODZHADAVLET**	34 588	2 950	11 584	25 496	Oil products
		7 464	50 543	27 195	57 390	Ferrous metal
					60	Ore
					98	Machinery and equipment
		0	120	0	0	Agricultural machinery
		35	28	0	30	Vehicles

		9 891	12 597	2 625	0	Non-ferrous metal
		120 221	164 316	104 383	6 466	Fertilizer
		1 438	1 680	2 880	1 980	Building materials
		45	0	0	50	Sugar
		0	1 084	0	0	Cement
		2 182	1 515	1 324	776	Food products
		0	0	120	132	Vegetable and fruits
		884	554	118	85	Industrial products
		2 913	14 406	64 383	26 667	Raw cotton
		581 925	453 424	517 850	463 623	Cotton fiber
		51 494	80 914	85 239	384	Grain
		0	0	64	0	Flour
	Hodzhadavlet TOTAL	**813 080**	**784 131**	**817 765**	**583 237**	
	GAZODZHAK	53 168	43 111	7 658	15 741	Others
Sarakhs TOTAL		**866 248**	**827 242**	**825 423**	**598 978**	

Source: Uzbekistan Temir Yollari

Figure 50 Import Tonnage by Commodity Crossing Sarakhs Border Station

STATION OF DEPARTURE	2005	2006	2007	2008	COMMODITY
SARAKHS	1 150	179	672	1 073	Oil products
	14 670	1 800	3 624	4 772	Ore
	1 107	357	934	718	Ferrous metal
	11	23	95	203	Machinery and equipment
	12	60	6	598	Vehicles
	0	0	110	220	Metal scrap
	0	65	0	0	Metal structure
	0	13	70	0	Agricultural machinery
	15 606	1 768	8 155	3 392	Non-ferrous metal
	62	108	60	60	Fertilizer
	1 126	895	1 761	3 953	Building materials
	0	61	510	1 276	Cement
	35	28	213	9	Wood
	0	0	0	14 334	Sugar
	14 334	10 684	9 728	5 490	Food products
	0	334	57	0	Vegetable and fruits
	7 848	10 267	13 827	15 154	Industrial products
	523	356	494	90	Cotton fiber
	0	0	64	0	Flour
	0	134	177	629	Grain
	58 795	56 958	50 798	64 141	Others
Sarakhs TOTAL	**115 397**	**84 090**	**91 355**	**116 112**	

Source: Uzbekistan Temir Yollari

Figure 51 Transit Tonnage by Commodity Crossing Sarakhs Border Station

STATION OF DEPARTURE/DESTINATION	2005	2006	2007	2008	COMMODITY
SARAKHS	87 175	283 467	304 385	94 745	Oil products
	0	0	69	130	Coal
	68	309	632	876	Ore
	209 640	238 376	200 347	84 825	Ferrous metal
	1 813	2 390	1 431	2 588	Machinery and equipment
	2 299	2 763	3 215	2 710	Vehicles
	414	562	2 242	734	Metal scrap
	45 114	129 512	74 577	72 750	Metal structure
	39	126	887	422	Agricultural machinery
	5 604	20 731	22 305	59 837	Non-ferrous metal
	8 351	721	0	0	Fertilizer
	4 502	8 821	12 611	17 247	Building materials
	389	2 746	2 766	3 982	Cement
	1 472	1 068	1 223	845	Wood
	62	0	24 392	59 619	Sugar
	88 776	78 245	86 392	152 042	Food products
	1 582	5 558	1 462	2 250	Vegetable and fruits
	10 716	16 561	19 728	23 916	Industrial products
	23 292	18 962	17 103	18 779	Cotton fiber
	116	0	340	528	Raw cotton
	0	0	628	155	Flour
	26 691	56 960	102 583	67 175	Grain
	319 295	336 336	385 996	399 580	Others
Sarakhs TOTAL	**845 838**	**1 217 567**	**1 293 390**	**1 171 491**	

Source: Uzbekistan Temir Yollari

Figure 52 Uzbekistan Rail Traffic Tonnages with Iran

COMMODITY	EXPORT		IMPORT		TRANSIT	
	2006	2007	2006	2007	2006	2007
Coal	0	0	0	0	0	69
Cox	0	0	0	0	0	0
Oil products	2 631	7 719	179	672	283 467	304 385
Ore	0	0	1 800	3 624	309	632
Alumina	0	0	0	0	11 798	28 053
Ferrous metal	50 217	26 747	357	934	238 376	200 347
Machinery and equipment	28	83	23	95	2 390	1 431
Metal structure	126	512	65	0	562	2 242
Metal scrap	0	0	0	110	129 512	74 577
Agricultural machinery	0	0	13	70	126	887
Vehicles	0	0	60	6	2 763	3 215
Non-ferrous metal	12 612	2 579	1 768	8 155	20 731	22 305
Fertilizer	164 882	106 438	108	60	721	0
Building material	0	0	895	1 761	8 821	12 611
Cement	1 346	584	61	510	2 746	2 766
Wood	0	0	28	213	1 083	1 246

Sugar	0	0	0	0	0	24 392
Food products	1 342	522	10 684	9 728	78 245	86 392
Vegetables and fruits	58	180	334	57	5 558	1 462
Industrial products	2 605	4 217	10 267	13 827	16 561	19 728
Raw cotton	0	0	0	0	0	340
Cotton fiber	53 357	75 052	356	494	18 962	17 103
Grain	83 135	84 833	134	177	56 822	102 721
Flour	0	0	0	64	0	628
Others	29 606	1 770	56 958	50 798	336 336	385 996
TOTAL	**401 945**	**311 236**	**84 090**	**91 355**	**1 215 889**	**1 293 528**

Source: Uzbekistan Temir Yollari

Figure 53 Export Tonnages of Cotton Fibre by Rail Tons

COUNTRY	2005	2006	2007
Iran	582 250	455 104	533 543
China	58 421	135 158	66 541
Riga	111 831	54 247	37 548
Ukraine	22 523	23 369	33 842
Russia	16 754	34 475	23 832
Kazakhstan	8 424	4 558	24 843
Uzbekistan	9 457	19 241	8 231
Afghanistan	0	3 429	7 301
Turkey	4 258	2 663	3 495
Others	14 722	792	0
TOTAL	**828 640**	**733 036**	**739 176**

Source: Uzbekistan Temir Yollari

From Uzbekistan

1. To the direction with exit to Persian Gulf to the ports Bander – Abbas, Bander – Homeini (Iran), Karachi (Pakistan), Mersin, Istanbul, Hopa (Turkey) the following prevail:

- for export: cotton, textile, energy, construction cargos and rolled metal products in containers, on pallets, in single packages or in bags by rail or road transport;
- for import: grocery, domestic and technological cargos in containers in single packages by rail or road transport;

2. To the direction of China and South-East Asia through Chinese ports Lyan Jung Gang and Shanghai the following prevails:

- for export: cotton, textile, energy, construction, chemical cargoes in containers, on pallets, in single packages or in bags by rail or road transport;
- for import: grocery, domestic and technological cargoes in containers, on pallets, in single packages and in bags by rail or road transport;

3. To the direction of Kazakhstan, Russia and countries of European Community:

- for export: cotton, textile, agricultural, energy, construction cargoes and mineral fertilizers in containers, on pallets, in single packages and in bags by rail or road transport;
- for import: grocery, grain, domestic, raw materials and technological cargoes in containers and in single packages by rail or road transport;

Statistical Review of Turkmenistan.

Turkmenistan is at a very early stage of integrating itself into the world economy, and so the global financial crisis has not had a significant direct impact. The economy continued its strong double-digit growth in 2008 (10.5%), driven once more by production and exports of hydrocarbon products and public investment. Hydrocarbon products account for about 90% of total exports, while much public investment relates to the construction of public buildings and new industrial facilities, as well as to roads and railways. On the supply side, construction (mainly infrastructure and buildings) showed substantial growth.

Exports increased by 30.6%, totaling $11.9 billion. Natural gas accounts for 52%, petroleum products 24%, and crude oil 14% of total exports. Imports grew by 50.8%, to reach $5.7 billion; about 75% of imports were capital goods used for construction.

The outlook for the economy remains positive. The key drivers of growth will continue to be hydrocarbons and public investment. The Government has negotiated favorable offtake natural gas prices and volumes with the Russian Federation for 2009 and beyond. It forecasts growth to continue, at 10.0% in 2009 and 2010.

The Government aims to diversify the production base and export base, as well as to promote private sector development, by increasing the private sector share of GDP from 40% to 70%. It also aims to develop chemical, engineering, food, and construction materials. Major obstacles to development and diversification include administrative, institutional, and human resources constraints.

Transportation routes to Turkmenistan are limited due to the country's geographic location. One of the main entry points is the port of Turkmenbashy on the Caspian Sea, located 270 kilometers east of and across the Caspian Sea from Baku, Azerbaijan. Turkmenbashy is an important gateway to Central Asia and is an import and export center for a variety of products. The port has a cargo ferry terminal (there is a ferry service to and from Baku) and a port facility. Large volumes of commercial cargo are shipped by truck via Iran. There are several road border crossing points at the Iranian border at Gudriolum, Gaudan, Artyk and Serakhs and one rail crossing at Serakhs. Iran and Turkmenistan have different railroad gauges and cars have to be switched to a new gauge at the Serakhs rail station in Turkmenistan. Turkmenistan has a number of rail links with Uzbekistan in the north and north-east, but rail and road crossings at Turkmenabat city are the most heavily used. Trucks coming to and from Uzbekistan have to cross the Amu Darya River by pontoon bridge. There is a limited capability for cross-boundary deliveries by trucks with Kazakhstan via Bekdash in the north-west. Although, the road is in a very poor condition, there are plans to rehabilitate it.

Most transportation of cargo within the country is by truck. Turkmenbashy City,

Balkanabat, Mary City and to a lesser extent Ashgabat are the main destinations for heavy industrial equipment and supplies, while Ashgabat is the major destination for most retail, food and other consumer products.

Large scale reforms to improve infrastructure in the auto, railway, and air transportation sectors of Turkmenistan are underway. Since 1992, the volume of freight transportation in Turkmenistan has increased in all sectors, particularly by trucks. Calculated by weight, in 2004, 86% of all goods exported from Turkmenistan left by trucks, 10% via pipelines, and 3% by railway. Turkmenistan plans to increase the overall transportation of freight by 5.4 times by 2020.

Figure 54 Railway Traffic 2005 – 2008 (tonnages) in Turkmenistan

Type of traffic	2008	2007	2006	2005
local				
- tons	9 437 880	9 919 162	9 498 560	9 793 048
- ton km.	4 199 928	4 171 259	4 221 799	4 874 414
Export				
- tons	1 047 075	1 283 022	1 574 431	1 289 523
- ton km.	716 831	874 704	1 076 427	941 903
Import				
- tons	2 290 756	1 244 871	682 807	1 029 258
- ton km	721 807	491 513	317 293	445 081
Transit				
- tons	5 820 899	8 544 634	8 165 761	7 577 288
- ton km	3 563 623	4 526 791	3 771 866	3 408 602
Total				
- tons	18 596 610	20 991 689	19 921 559	19 689 117
- ton km	9 202 189	10 064 267	9 387 385	9 670 000

Source: Ministry of Railways of Turkmenistan

Figure 55 Export Tonnages moved by Rail

	2008	2007	2006	2005
Oil goods	645 813	994 108	1 207 465	982 519
Cereals and flour	--------	----------	----------	---------
Construction	--------	----------	----------	---------
Cement	--------	----------	----------	---------
Black metal	--------	----------	----------	---------
Chemicals	17 759	7 618	24 327	38 477
Cotton	36 878	57 362	44 895	28 238
Coke	137 660	129 862	175 250	124 375
Other	208 965	94 072	122 494	115 914

Source: Ministry of Railways of Turkmenistan

Figure 56 Import Tonnages Moved by rail

	2008	2007	2006	2005
Oil goods	13 511	8 735	5 346	12 717
Cereals and flour	471 497	174 754	22 411	6 526
Construction	18 350	1 923	4 051	412
Cement	123 881	9 078	9 059	209 221
Black metal	365 534	239 935	143 203	195 580
Chemicals	247 074	174 970	31 808	80 931
Cotton	----------	---------	---------	---------
Coke	----------	---------	---------	---------
Other	1 050 909	635 476	466 929	523 871

Source: Ministry of Railways of Turkmenistan

Figure 57 Transit Tonnages moved by Rail

	2008	2007	2006	2005
Oil goods	799 934	1 921 439	1 458 067	1 519 910
Cereals and flour	700 838	1 004 963	868 114	713 045
Construction	17 644	111 298	90 159	210 712
Cement	10 709	323 258	525 579	403 907
Black metal	338 756	582 909	598 429	519 985
Chemicals	16 184	318 721	472 906	333 612
Cotton	551 130	672 207	619 703	706 047
Coke	169 683	43 194	5 122	28 401
Other	3 216 021	3 566 645	3 527 682	3 141 669

Source: Ministry of Railways of Turkmenistan

Figure 58 Turkmenistan Foreign Trade 2006 – 2008 (kg)

Product	2006г. (kg)	2007г. (kg)	2008г. (kg)
Living animals, animal products	10738707	16836454	30413304
Phytogenic products	90841999	137519975	416042761
Phytogenic oils	15187009	19543173	19343766
Food products, alcohol and non alcohol beverages vinegar; tobacco and its substitutes	90940480	144676447	133100643
Mineral products	135197283	92433846	665742943
Chemical products	64895040	98818075	106205365
Polymer materials, plastics, rubber, rubber products	21268320	41891254	44071968
Leather, fur, production from them	7322245	13841704	8380634
Wood /wood production	19093485	32638114	36964265
Paper, polygraph production	8876973	10207422	21843220
Textiles	60914557	81737250	64952908
Shoes, hats	1935785	3594490	3788586
Stone, gypsum, cement, asbestos, isinglass stone	72652419	118859748	158491982
Jewelries	3311	9835	19000
Non jewelry materials	156579784	223329225	242156187
Computing techniques, audio video apparatus	50053107	87166757	95474223
Transport and its parts	14848924	6499901	32563607
Optics, photograph equipment, cinematographic, measuring, control, medical, surgery equipment; watches; musical instruments	864524	1280693	1210043
Furniture and household goods	9308379	16625988	24521268
Arts	10734	15010	588

Source: State Customs Service on Turkmenistan

Statistical review of Iran.

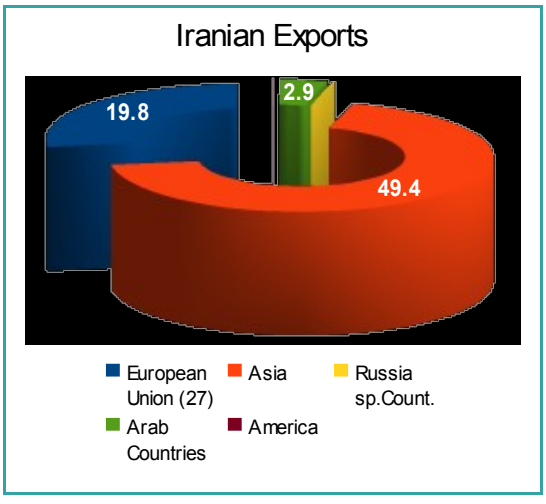
Figure 59 Iranian Merchandise Trade

MERCHANDISE TRADE	*Value*	*Annual percentage change*		
	2008	2000-2008	2007	2008
Merchandise *exports*, f.o.b. (million US$)	113 668	19	15	28
Merchandise *imports*, c.i.f. (million US$)	57 411	19	10	28
	2008 a			2008 a
Share in world total exports	0.71	**Share in world total imports**		0.35
Breakdown in economy's total exports		**Breakdown in economy's total imports**		
By main commodity group (ITS)		By main commodity group (ITS)		
Agricultural products	3.2	Agricultural products		13.7
Fuels and mining products	84.2	Fuels and mining products		9.7
Manufactures	9.9	Manufactures		70.5
By main destination		By main origin		
1. Japan	23.9	1. European Union (27)		9.0
2. Taipei, Chinese	22.5	2. China		6.0
3. European Union (27)	19.8	3. India		3.7
4. United Arab Emirates	2.9	4. Japan		2.6
5. Iraq	2.9	5. Malaysia		0.8
Unspecified destinations	0.3	Unspecified origins		74.8

Source: World Trade Organization 2010

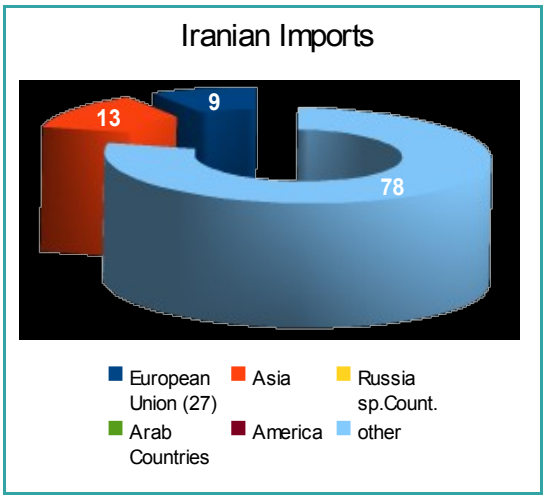
The country has experienced the trade deficit over the years. The major exportable commodities of the state are fuel, textiles and manufactures. The exports partners of the country are Japan, China, Italy, South Korea, Taiwan, Netherlands and Turkey. The major importable items of the country are food, fuel and energy and capital goods. The imports partners of the country are Germany, France, Italy, UAE, Russia and South Korea.

Figure 60 Iranian Exports



Source: WTO, author's analysis

Figure 61 Iranian Imports



Source: WTO, author's analysis

Statistical Review of Turkey.

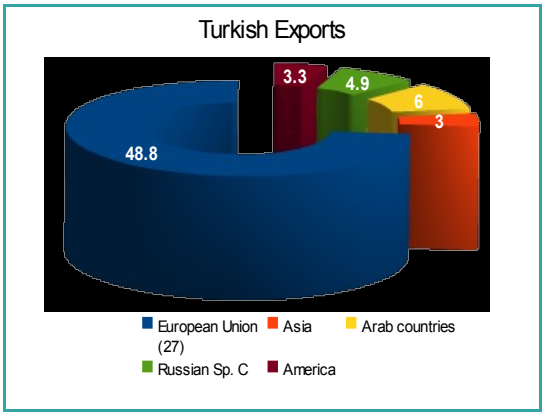
Figure 62 Turkey Merchandise Trade

MERCHANDISE TRADE	*Value*	*Annual percentage change*		
	2008	2000-2008	2007	2008
Merchandise *exports*, f.o.b. (million US$)	132 027	22	25	23
Merchandise *imports*, c.i.f. (million US$)	201 964	18	22	19
	2008			2008
Share in world total exports	0.82	**Share in world total imports**		1.22
Breakdown in economy's total exports		**Breakdown in economy's total imports**		
By main commodity group (ITS)		By main commodity group (ITS)		
Agricultural products	8.5	Agricultural products		6.5
Fuels and mining products	9.0	Fuels and mining products		31.2
Manufactures	78.6	Manufactures		58.4
By main destination		By main origin		
1. European Union (27)	48.8	1. European Union (27)		37.1
2. United Arab Emirates	6.0	2. Russian Federation		15.5
3. Russian Federation	4.9	3. China		7.8
4. United States	3.3	4. United States		5.9
5. Iraq	3.0	5. Iran, Islamic Rep. of		4.1

Source: World Trade Organization 2010

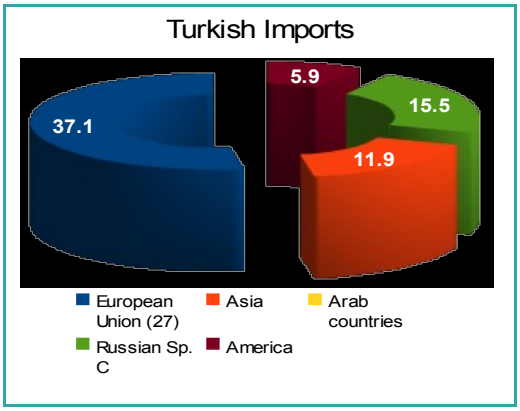
Turkey's major export products include clothes, electronics, auto mobiles and agricultural products. Other major products exported from Turkey include iron and steel, mineral fuels and oil, precious stones and tobacco. On the other hand, the major import commodities for Turkey include electrical equipment, mechanical appliances, optical instruments, iron and steel, and pharmaceutical products. Turkey's major import partners are the USA, Russia, Germany, Italy, France, Switzerland and the UK. Oil exports from Turkey in 2008 stood at 141,700 b/d, with oil imports at 783,800 b/d in the same period. The total exports amounted to $111 billion in 2009, which fell from its 2008 estimates of $140.7 billion. The total imports amounted to $134.2 billion, according to the 2009 estimates, which again fell from the 2008 estimates of $193.9 billion. Turkey has started to explore alternative markets to counter the effects of the financial crisis. Exports to countries in Africa and Central Asia have increased tremendously. Trade with the Organization of Islamic Countries (OIC) has jumped by more than 50% in 2008. FDI from the Middle East countries increased to almost $2 billion in 2008. Exports to Iraq increased by 75% in 1Q2009, and trade relations with Africa are expected to strengthen in 2010.

Figure 63 Turkish Exports



Source: WTO, author's analysis

Figure 64 Turkish Imports



Source: WTO, author's analysis

CHAPTER 3. Strategic evaluation of the two routes

Introduction

The Almaty Istanbul train is a rail service that started in 2002. Since then, much effort has been devoted to developing the service and transforming it into a weekly, efficient and a, to the cargo market, well-known rail service of Central Asia. However, the results of these efforts did not turn out as expected. The movement of cargo by this train and the actual number of containers being transported using the so called ECO CIM, are very limited. Analysis show only one or two containers per month being transported by this rail service. From this we can conclude that this rail service does not actually exist today. No blocks trains currently run the route Istanbul – Almaty, via Iran, Turkmenistan and Uzbekistan, on a regular basis and with a strict time schedule. The question we will try to answer in this chapter is why? Why does the block train Almaty – Istanbul not operate?

Indications show that large amounts of cargo are currently being shipped to Almaty, but the majority of this cargo comes via Chinese ports and the Chinese mainland. There is thus no shortage of interest from the market. In this chapter we will takeinto consideration all the statistical information in chapter two and other relevant facts to evaluate the Almaty-Istanbul route as well as a new route under development, Almaty-Bandar Abbas. We will then formulate a new strategy to ship cargo using these two routes

The Kazakhstan - Uzbekistan – Turkmenistan – Iran (Route 1) Container Train

Our analysis in chapter 2 illustrated the following:

•Data show that, over last years, the volumes of cargo transportation through Sary-Agach - Keles increased significantly. In 2008, the total amount of tonnage was 22,77 million which was an increase of 2,27 million tons (or 11 %) from 2007 (Transit 9310 tonnes in 2008, 4298 tonnes for the first 6 months of 2009).

•The share of transit transportation accounts for 55% of all freight flow volumes through the railway crossing Sary-Agach, 36% for export and 7% for import .

•The volume increase is directly related to the growing trade between Central Asian countries and Europe.

- •Customers (clients) and freight-forwarders importing cargo to Kazakhstan from East India and the United Arab Emirates choose routes which go through Chinese transit ports;
- •Transit times through the Chinese ports (such as Lianyungang, Xingang, Qingdao) and through Alashankou/Dostyk are practically identical, and usually less than through the Bandar Abbas/Sarakhs/Sary-Agach border crossings;
- •Basic delays such aschange of wheel sets, lack of cars, and traffic congestion at the border crossing with Iran;

•Freight rate is much cheaper in China than in Iran;

•Reliability of cargo, the awareness in the process of cargo following;

•Route Bandar Abbas/Saraks/Sary-Agach remains competitive in import transportation only, in a direction of the Western part of Kazakhstan, as well as in the transportation of dangerous cargoes, which is forbidden through the territory of China;

•The main countries that benefited from transit cargo through Sary-Agach in 2008 were: Uzbekistan (83% of the total), Tajikistan (10%), Kyrgyz Republic (5,3%), Iran (0,9%) and Turkmenistan (0,4%);

•Analysis of the transport of goods through the crossing Dostyk - Alashenkou over the past 10 years shows that the total volume of transported cargo increased almost 3 times.

•In 2008 the total volume increased by 4% and amounted to 12 612 tons, against 12 046 tons in 2007. Compared with the same period in 2008, cargo turnover at the Dostyk station for the first half of 2009 increased by 26,8%, or 1 617 tons, and amounted to 7 641 tones;

•From 2007 to 2008 the following are the annual growth rates of major commodities through Dostyk: mineral oil 73%, non-ferrous metals 38%, ore metal 59%, ferrous metals 38%, chemicals 17%, cotton 111%;

•The analysis of export and import of containers for the period from 2005 to 2008 shows that the container shipments through the border crossing of Dostyk increased 2,6 times. Import prevails in the total volume of container shipments – 25,5% in 2008;

•The main countries shipping transit goods following the results of 2008through Dostyk were: Uzbekistan, Kyrgyzstan, Tajikistan, Russia and Turkmenistan. The recipient countries were: Uzbekistan, Kyrgyzstan, Tajikistan, Russia, Turkmenistan, Afghanistan and Azerbaijan;

•The quotation obtained for transporting a 20-foot container from Shanghai to Almaty via Drushba/Alashankou was US$ 1,522, including port charges of approximately US$ 180[10].

Figure 65 Distances of railway routes between Central Asia and major seaports

From	Routing	Distance (km)
Almaty	Drushba-Shanghai (Pacific)	**5.370**
	Vladivostok (Pacific)	7.850
	Novorossiysk (Black Sea)	4.630
	Aktau-Baku-Poti (Black Sea)	4.600
	Riga (Baltic Sea)	5.350
	Bandar Abbas (Persian Gulf)	**3.770**
	Mersin (Mediterranean Sea)	5.421

10 UNESCAP report for block trains

Source: UNESCAP

Strategic Analysis of the Almaty - Bandar Abbas rail service

Our analysis will be based on the following strategic management tools:

•PESTEL Framework: analysis of Political – Economic – Social/Cultural – Technological – Environmental – Legislative factors;

•FIVE FORCES Framework: threat of new entrants, power of suppliers, bargaining power of customers, threat of substitutes, bargaining power of competitors;

•CRITICAL SUCCESS FACTORS: branding and reputation, IT Integration, Supplier Management,

•SWOT ANALYSIS: strengths, weaknesses, opportunities, threats.

PESTEL Framework

Political factors : The performance of such a rail service is highly influenced by the political and legislative conditions of the countries involved. As examined in the country profiles, these countries are in a development phase were the restoration or reconstruction of road and railroad infrastructure are the main items on their development agenda. Following efforts by the ECO Secretariat, political willingness has been secured. There is widespread recognition of the fact that transportation infrastructure and services are integral to economic development.

Economic factors: Economic factors are of concern to rail services because they are likely to influence demand, costs, prices and profits. From our analysis we can see that the cargo market considers the Almaty – Bandar Abbas route inefficient and ineffective. Inefficient, because it is more expensive compared to other routes, i.e. Shanghai – Urumchi – Dostyk – Almaty. Ineffective, because there is no rail service with a reliable time schedule, where stop-overs have been eliminated crossing borders free of endless waiting times.

Social / Cultural factors: We must not underestimate the social and cultural factors as they can be the deciding factor for markets. As part of the Soviet Union, the countries of Central Asia were in a common political "closed" system for many years. Socially and culturally it is difficult for these countries to trade elsewhere. Our analysis shows that cargo increased dramatically in the last years, especially at the border crossing of Dostyk. The main exporters / importers are Uzbekistan, Turkmenistan, Tajikistan and Kyrgyzstan. Even though Bandar Abbas port is located at half the distance of Shanghai port, these countries' forwarders and traders prefer to transport their cargo via Kazakhstan to Shanghai . The reasons are not only economical but also social and cultural.

Technological factors: The lack of technology is an issue in this countries. Technology in transportation is mainly used to optimize customer service, according to customer request and to operate the service. Both customer service and transport operation lack

technological development in these countries. Web based applications for track and trace of orders, satellite / telematics systems for the evaluation and optimization of transport services operations, GIS and GPS systems are some of the applications that could really help the efficiency of a transportation service and bring a real competitive advantage.

Environmental factors: The environmental factors do not deal exclusively with environment issues but mainly with the responsibility to society. As analysed, a new transportation service, and particularly rail which is considered environmental friendly, is a real investment in development and shows responsibility toward society. The specific rail service Almaty – Bandar Abbas will not only effectively connect the four countries, but also facilitate the movement of cargo in the most cheap and efficient way, and thereby facilitate development of the societies and local economies.

Legislative factors: Rail service operation and cooperation among state rail organizations that have different internal regulations are legislative factors that influence the smooth operation of the train. The customs procedures and the national customs regulations are other legislative factors that can directly influence operations. By participating in international and regional organizations and being part of international or regional regimes and conventions, there countries can first of all ensure the existence of the service and afterwards smooth operation of the service.

FIVE FORCES Framework

Threat of new entrants: We can say that in our case, there is no threat of "new entrants" as it is almost impossible for the countries to develop such services by their themselves, without the cooperation of the other three. On the other hand, what *could* happen is that forwarders see business opportunities in the existence of cargo and start operations by themselves. This is called the threat of substitution. Such a scenario would create big issues because the vendors of rail services to these forwarders would be the state rail organizations and the idea of developing a neutral, efficient rail service for the whole market would be under risk.

Bargaining power of suppliers: In our case, the suppliers are also the sellers, or operators. The most important issue here is for the state rail organizations to understand which factors can be competitive advantages for this rail service and re-adjust their policies accordingly. This, of course, is the main task of the ECO Secretariat, but it should also be of major concern to the state rail organizations because the service and the profits from the services – tangible and intangible ones – belong to them. The ECO Secretariat is just a facilitator.

Bargaining power of Customers: Porter theorized that the more products that become standardized or undifferentiated, the lower the switching cost, and hence, more power is

yielded to buyers [11]. This means that in our case, we should create a service – product that will have its packaging and be as is. No changes, no surprises for the customers. What is says it is, is what it actually is! Therefore, we should create a reliable time schedule, a competitive, and transparent costs tariff structure. We should be market-oriented and customer service-oriented. The market and the customers will then adopt our service and this route will become the most important one for imports – exports and transit in Central Asia.

Bargaining power of Competitors: Who are the competitors of this rail service? (A) the rail transport from Almaty to Shanghai port;(b) the Shanghai port it self with its worldwide connections and competitive price / time compared to Bandar Abbas port; and (c) the road transport from Almaty to Bandar Abbas. To compete our competitors, we must first formulate and standardize our product – price, time, service wise – and then become really competitive by improving it, through technological solutions; expanding it, through new connections by truck or by ship; and unifying it through common regulations and working norms that minimize times and make the service more efficient.

CRITICAL SUCCESS FACTORS

Branding and Reputation: The next step, after having formulated and standardized our product, is to develop our branding strategy. Branding is not promotion and marketing. Branding is to give a characteristic and a self-explanatory name to the product. This is a very difficult task because social and cultural characteristics should be taken into account as well as the target market. In other words, if this is a rail service that should be sold to forwarders in Western Europe then an wholly Asian brand would perhaps not be the best solution, etc.

IT Integration: We mentioned earlier the importance of technology for customer service and the operations of the rail service. In subsequent steps, integrating the IT systems of state rail organizations would be an excellent improvement. This would result in the automatic exchange of information on rail services among the organizations. In addition, it would be an excellent step forward to improve the corridor management mechanism.

Supplier Management: As suggested in the Corridor Management Mechanism chapter, state rail organizations should participate in these new rail services as shareholders. The management of the service would be financed by the profits and the rail organizations would also benefit from the profits of these new entities.

11 Porter M. (1980), Strategic Management principles (PESTEL Framework, Five forces framework, Critical Success Factors, SWOT Analysis)

SWOT ANALYSIS

Strengths	Weaknesses
•New rail service •Consensus of the participating state rail organizations •Non-existence of a competitor on the same route •Existence of a facilitator – ECO Secretariat – that encourages urgent implementation of the service •There is cargo that could use this route in increasing volumes •There are no impervious cultural/ social disputes or difficulties in the region •There is a port / gate to the rest of the world – a short distance from the service •Many economic benefits for the countries involved	•Different working regimes •Poor infrastructure •Need for great effort to ensure a compromise on tariffs and time schedules •New corridor management mechanism which differs gratly from the usual way of working and of the region's culture •Many economic interests in the region that would not let the rail service operate or attract cargo •The service's future depends on the competitiveness of Bandar Abbas port, time / cost wise, compared to other ports, mainly Shanghai
Opportunities	**Threats**
•To create a more competitive and reliable rail service •To concentrate all the cargo of this area on this service •To create a new, leading and famous corridor for all trade in Central Asia •To transform the disadvantage of eight countries of Central Asia, being landlocked, to an advantage of having reliable, efficient and effective routes that connect them with the rest of the world •To create a case study and a benchmark for the new Corridor Management Mechanism that is being promoted for the area •To create a consortium from the state rail organisations of the area that will operate under the same efficient mechanism, exchange information with state of the art technologies and formulate a network of reliable rail services for Asia and Europe •To make Central Asia the producer of Europe and bring economic development and prosperity to these countries	•The NVOCCs that operate in Shanghai port and have many economic interests in continuing operations in the region could make Bandar Abbas port even more expensive and therefore "kill" this rail service •The rail service connecting Almaty with Shanghai port to be more competitive than our service could ever be, and thus no re-directing of cargo •The cultural and social factors might prove to be so strong as to never let cargo markets really use the service •The consensus of the state rail organisations on the realization of the service would not be practically implementable with no agreement on better and more competitive tariffs •The new corridor management mechanism would not be adopted in practice by the state rail organizations and the service will stay without management

The Kazakhstan - Uzbekistan – Turkmenistan – Iran – Turkey (Route 2) Container Train

The 1st (Almaty, 2000), 2nd (Almaty, 2001), and 3rd (Van, 2001) meetings of the SWG considered various technical and operational aspects of organizing demonstration runs of container and passenger trains.

The 7th Railway Authorities Meeting (Dushanbe, 2002), and the 1st (Istanbul, 2003) and 2nd

(Tehran, 2004) meetings of the Steering Committee took decisions aimed at achieving the speed of 1000 km/day for the container train; reducing the idling time, simplifying customs procedures, ensuring a swift change of locomotives, and enhancing the capacity for bogy changes at border crossings.

The 2nd Meeting of the Working Group on Trans-Asian Railway Mainline (Astana, 2007) finalized the timetable of the container train and agreed that the issue of tariffs should be settled by a committee consisting of the five-countries the train passes through.

The information collected for this specific block train is illustrated analytically in chapter 2, but included below is also some generic information:

- The major countries exporting goods through the borders Ozinki were, according to the results of 2008: Russia 41,5%, Belarus 9,3%, Ukraine 17%, Poland 7,6% Lithuania 6,7%, and Turkey 1%.

- Cargo tonnages through the Aksarajskaya (towards Novorossiysk port) Russian railway border crossing points 2,07 Imports and 3,24 transit.

- The Istanbul-Almaty train is still running once a week in one direction and, up to now, 146 trains with 968 containers (on 938 wagons) have been dispatched from Istanbul to Central Asia. Furthermore, 59 trains with 595 containers (on 547 wagons) have been dispatched from Istanbul to Turkmenistan by another regular block train operated as of 26 December 2003[12].

Figure 66 Transit times for containerized shipments transported by rail

Routing	Transit Time
Ports in China-Alashankou/Drushba-Tashkent (container block trains carrying Daewoo shipments)	9 days
Ports in China-Alashankou/Drushba-Almaty (regular railway transport)	15 – 23 days (12 – 18 days to China border, 2-3 days waiting time at the border)
Novorossiysk-Almaty (single container shipment)	14 days
Kapikule (Turkey)-Varna (Bulgaria)-*Ferry*-Ilichevsk (Russian Federation)-Kazakhstan-Tashkent/Uzbekistan (single covered CIS wagon or 5-6 covered CIS wagons)	30 – 35 days (single wagon) 20 – 25 days (5-6 wagons)
Tashkent/Uzbekistan-Turkmenistan-Islamic Republic of Iran-Istanbul/Turkey	Approximately 20 days
European country-Almaty/Kazakhstan	30 – 35 days
Brest/Poland-Belarus-Russian Federation-Kazakhstan	

12Working Party on Rail Transport , ECE, 17 November 2006 , Organization of demonstration trains on Euro-Asian transport linkages, Transmitted by the Government of Turkey

border	15 – 16 days (+/- 5days)

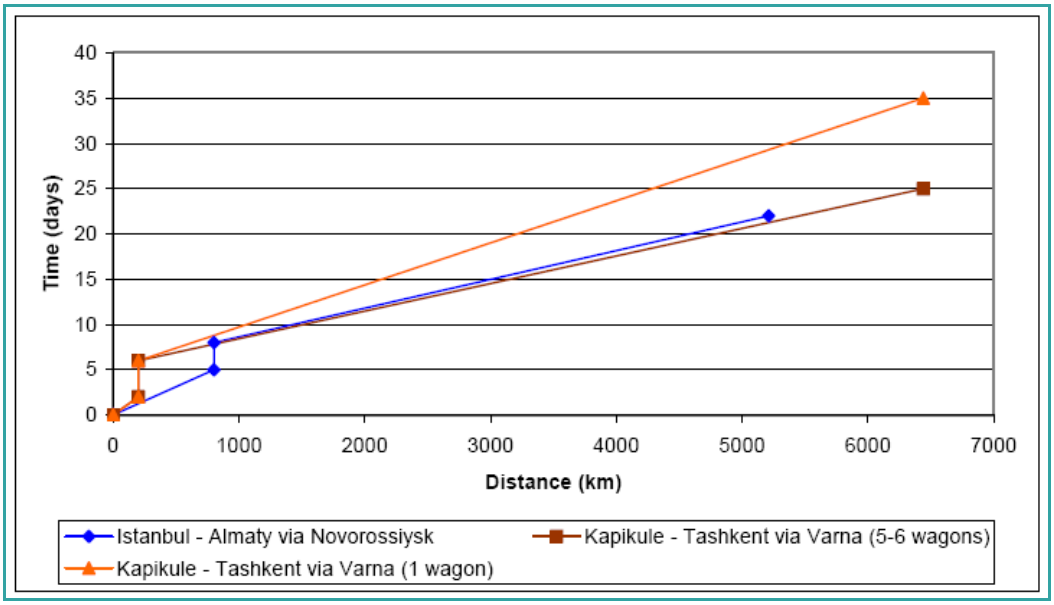
Source: Data collected by ESCAP staff.

Figure 67 Comparison of distances and times for Turkey – Central Asia railway route via Novorossiysk and via Varna

Via Novorossiysk	Mode	Distance (km)	Cum. distance (km)	Time (days)	Cum. time (days)
Istanbul		0	0	0	0
Istanbul- Novorossiysk (Russian Federation)	ferry	800	800	5	5
Novorossiysk			800	3	8
Novorossisyk – Volgograd – Astrakhan (Kazakhstan)	rail	1385	2185	14	22
Astrakhan – Almaty	rail	3025	5210		
Via Varna		**Distance (km)**	**Cum. distance (km)**	**Time (days) - 5-6 wagons**	**Time (days) - 1 wagon**
Kapikule (Turkey)		0	0	0	0
Kapikule-Varna (Bulgaria)	rail	200	200		
Varna	ferry		200		
Varna – Iyichevsk (Ukraine)		400	600		
Iyichevsk – Almaty (via Russian Federation)	rail	3580	4180		
Almaty – Tashkent	rail	2260	6440	20-25	30-35

Source: Data collected by ESCAP staff.

Figure 68 Estimated cumulative transit time required for the import of containerized cargo by rail from Istanbul to Almaty via Novorossiysk and via Varna



Source: Data collected by ESCAP staff.

Figure 69 Comparison of costs between Turkey and Kazakhstan/Uzbekistan, by ferry/rail and road

Route	Modes	Distance (km)	Cost (US$)
Istanbul – Novorossiysk – Volgograd – Astrakhan – Almaty	Ferry/rail	5 210	1 435 - 2 000 (20 foot container) 2 385 (40 foot container)
Kapikule – Varna – Iyichevsk (Ukraine) – Russian Federation – Kazakhstan – Tashkent (Uzbekistan)	Rail / ferry / rail	6 440	7 500 – 8 000 (per wagon, commodity based tariff)
Mersin – Bazargan (Is. Rep. of Iran) – Tehran – Sarakhs (Turkmenistan) – Farab – Alat (Uzbekistan) – Tashkent	Road	4 540	4 000 (TEU)

Source: Data collected by ESCAP staff.

“Turkey and Russia are planning to build a logistics center in Krasnodar, located 1,500 kilometers south of Moscow. Along with bilateral trade, the center will provide transportation, customs and storage services to third countries. 'Turkey is aiming to become a logistics leader in the Black Sea and Caucasus regions. A logistics center in southern Russia will both contribute to growing bilateral trade between Turkey and Russia and

become a base for Turkish transporters willing to be important actors in the region. Krasnodar is located 1,500 kilometers south of Moscow and is close to the Black Sea ports of Novorossiysk, Temruk, Taman, Kavkaz, Gelendzhik and Tuapse.Turkey, which seeks to export to Russia and other countries in the Black Sea and Caucasus region more efficiently, began feasibility studies in 2008[13]."

Strategic Analysis of the Almaty – Istanbul rail service

Our analysis will be based on the following strategic management tools:

•PESTEL Framework: Analysis of Political – Economic – Social/Cultural – Technological – Environmental – Legislative factors;

•FIVE FORCES Framework: Threat of new entrants, power of suppliers, bargaining power of customers, threat of substitutes, bargaining power of competitors;

•CRITICAL SUCCESS FACTORS: Branding and reputation, IT integration, Supplier Management;

•SWOT ANALYSIS: Strengths, weaknesses, opportunities, threats.

PESTEL Framework

Political factors : The conditions that apply to for the Almaty – Bandar Abbas rail service also apply to the Almaty – Istanbul service; the performance of such a rail service is highly influenced by the political and legislative conditions of the countries involved. Following efforts by the ECO Secretariat, political willingness has been secured. There is widespread recognition of the fact that transportation infrastructure and services are integral to economic development. The restoration or reconstruction of road and railroad infrastructure are main objectives these Governments.

Economic factors: Our analysis shows that the cargo market considers the Istanbul – Almaty route, via the Russian port Novorossiysk, a more efficient rail transport solution. According to UNESCAP analysis this route costs $2000 pr 20" and takes 22 days for the isolated containers.

Social / Cultural factors: In this case the social and cultural factors do not seem to influence much the choices of the cargo market. hTe Turkish forwarders, for instance, find the route via Novorossiysk port more efficient than the one via Iran and Turkmenistan.

Technological factors: The lack of technology is an issue in these countries. Technology in transportation is mainly used to optimize customer service, according to customer request, and to operate the service. Both customer service and transport operation lack technological development in these countries. Web based applications for track and trace of orders, satellite / telematics systems for the evaluation and optimization of transport

13 Hurriyet , Turkish Newspaper, 12 January, 2010

services operations, GIS and GPS systems are some of the applications that could really help the efficiency of a transportation service and bring a real competitive advantage.

Environmental factors: The environmental factors do not deal exclusively with the environment issues but mainly with the responsibility towards society. As analysed, a new transportation service, and particularly rail which is considered environmental friendly, is a real investment in development and shows responsibility towards society. The specific rail service Almaty – Istanbul will not only effectively connect the five countries, but also facilitate the movement of cargo in the most cheap and efficient way, and thereby facilitate development of the societies and local economies.

Legislative factors: Rail service operation and cooperation among state rail organizations that have different internal regulations are legislative factors that influence the smooth operation of the train. The customs procedures and the national customs regulations are other legislative factors that can directly influence operations. The application of the common CIM / SMGS is the challenge for this rail service but also for the rail organizations. By participating in international and regional organizations and being part of international or regional regimes and conventions, there countries can first of all ensure the existence of the service and afterwards smooth operation of the service.

FIVE FORCES Framework

Threat of new entrants: The threat of new entrants exist in this case because countries appear to cooperate to establish a more efficient and effective route by connecting the same points of origin and destination: Almaty / Istanbul. The Turkey – Russian Federation - Kazakhstan route connects Almaty with Istanbul more efficiently through inter modal transport

Bargaining power of suppliers: In our case the suppliers are also the sellers/operators. The most important issue here is for the state rail organizations to understand which factors can be competitive advantages for this rail service and re-adjust their policies to satisfy these factors. This, of course, is the main task of the ECO Secretariat but it should also be one of major concern to the state rail organizations because the service and the profits from the services – tangible and intangible ones – belong to them. The ECO Secretariat is just a facilitator.

Bargaining power of customers: Porter theorized that the more products that become standardized or undifferentiated, the lower the switching cost, and hence, more power is yielded to buyers [14]. This means that in our case we should create a service – product that will have a packaging and be as is. No changes, no surprises for the customers. What is says

14 Porter M. (1980), Strategic Management principles (PESTEL Framework, Five forces framework, Critical Success Factors, SWOT Analysis)

that it is, is what it actually is! Therefore, we should create a reliable time schedule, a competitive, transparant costs tariff structure, we should be market-oriented and customer-service oriented. The market and the customers will then adopt our service and this route will become one of the most important routes for imports – exports and transit of Central Asia.

Bargaining power of competitors: Who are the competitors of this rail service? (A) the inter modal transport from Almaty to Istanbul and (b) the road transport from Almaty to Bandar Abbas. To bargain with our competitors we should first formulate and standardize our product – price, time, service wise – and then become competitive by improving it, through technological solutions, expanding it, through new connections by truck or by ship, and unifying it, through common regulations and working norms that minimize times and make the service more efficient.

CRITICAL SUCCESS FACTORS

Branding and Reputation: The next step after having formulated and standardized our product would be the development of our branding strategy. Branding is not promotion and marketing. Branding is to give a a characteristic and a self-explanatory name to a product. This is a very difficult task because social and cultural characteristics should be taken into account and so should the target market In other words, if this is a rail service that should be sold to forwarders in Western Europe then a wholly Asian brand would perhaps not be the best solution, etc.

IT Integration: We mentioned earlier the importance of technology for the customer service and the operations of the rail service. In subsequent steps, integrating the IT systems of the state rail organizations would be an excellent improvement. This would result in the automatic exchange of information on the rail services among the organizations. In addition, it would be an excellent step forward in the improvement of the corridor management mechanism.

Supplier Management: As suggested in the Corridor Management Mechanism chapter, the state rail organizations should participate in these new rail services as shareholders. The management of the service would be financed by the profits of the service and the rail organizations would also benefited rom the profits of these new entities.

SWOT ANALYSIS

Strengths	Weaknesses
•Consensus among the five state rail organisations that will support the services and its operations •Commitment from the five state rail organizations that will support the operations of the new corridor management mechanism •The existence of a very efficient facilitator, ECO Secretariat, that supports and helps all the negotiations •A service that has been tested in the market for eight years, therefore we know all its advantages and disadvantages and we can deliver a really efficient and effective rail service •The model of the NEUTRAL operator is a very strong advantage of the service and should be promoted as such •The service is a real connection between Asia and Europe and we should expand and connect it with other transport means to create more competitive advantages	•It is a rail service that exists since 2002 and the cargo market has not "accepted it" or used it according to expectations •The cargo that exists today – and enough cargo exists to at least justify the weekly operations of a block train – is currently being sent through alternative routes •A new tariffs structure is needed(more competitive) and it is very difficult to get consensus among the rail organizations for this •It is a service that is being provided by five national rail organizations and a central management is needed, which does not exist today •The new proposed corridor management mechanism has not been applied before therefore there are no other examples to follow •It is very difficult or even impossible to determine the real costs of the service for the rail organizations and this will create issues in the application of the new corridor management mechanism
Opportunities	**Threats**
•The service can have a second opportunity only if it is really competitive and it has a strong management structure that can lead the efforts •The re-direction of cargo to our route needs: •strong commitment and effort, •very competitive NEW tariff structure, •an efficient and reliable time schedule, •value added services as IT services, customer service track and trace etc., •strong management and operations team that will convince the clients of the effectiveness of the new service, •continuous client approach and selling of the service •The service should be expanded to feed the train with more cargo from other "sources" and not only from Turkey or Kazakhstan	•The management will not be strong and efficient enough to change the climate for the service •The rail organizations involved will not decide to formulate a central management for the service •The cargo market will not believe in the service as it has now been eight (8) years since it started •The rail organizations will not agree on a more efficient and new tariff structure •Not enough cargo to support weekly services •The service will not be expanded to give more options to the clients

CHAPTER 4. Time Schedules Review and Analysis

Introduction

The following information has been collected from the official web site of the Turkish Railways (TCDD):

"Transportation Type

- *It is possible to load the block container train in Marsandiz station (Ankara) and add container wagons to the train formation to be loaded in Alsancak (Izmir) and Mersin .*
- *Due to different gauges, the containers are transferred in Sarakhs (Iran/Turkmenistan). No bogie changes are done.*
- *In the loadings of 40 feet containers, maximum weight of the container cannot exceed 40 gross tones.*
- *Between Haydarpasa and Sarakhs (Iran); CIM consignment note and between Sarakhs and Almaty; SMGS consignment note are used for acceptance and transport of the containers.*
- *At least 2 pieces of 40 feet containers or 2 X 20 feet containers are loaded to a wagon.*
- *There are no containers that belong to TCDD, so the containers should be provided by the consigners.*
- *The transportation period is planned to be 12 days (for Haydarpasa - Almaty)*

MODE of PAYMENT

For the containers loaded with export goods outgoing from our country and for the combined transit transportation outgoing from our country, the freightage and additional expenses for Turkish corridor and Iranian corridor up to Sarakhs are collected from the consigner at the departure station.

The costs for the transport between Sarakhs and the arrival point will be paid at the arrival station by the receiver or by freight forwarding companies that have an agreement with one of the state railways.

For the block containers coming to our country, the costs fro the section between the departure station and Kapiköy border will be paid by the consigner at the departure or by freight forwarding companies, which have agreements with all of the state railways, to the railways administration concerned.

The costs for the section between Kapiköy border and arrival point will be paid by the receiver at the arrival station.

İstanbul-Almaty started its first journey on 20 January 2002

Railway distance between İstanbul-Almaty : 6208 km (including Van Lake)"

Almaty - Istanbul time schedule review and analysis

KAZAKHSTAN (956km)								
ALMATY ISTANBUL					ISTANBUL - ALMATY			
travelling time	arrival	stopover	departure	stations	arrival	stopover	departure	travelling time
			13:38	Almaty		81		00:00
04:21	17:59	39	18:38	Otar		37		00:00
03:16	21:54	34	22:28	Shu		36		00:00
04:35	03:03	40	03:43	Taraz		40		05:04
02:21	06:04	42	06:46	Tulkubas	17:56	60	18:56	06:13
03:27	10:13	47	11:00	Arys	11:10	33	11:43	02:31
02:26	13:26	180	16:26	Sary Agash	05:39	180	08:39	
20:26		382				467		13:48
26 hours & 48 min					??			

UZBEKISTAN (732km)								
ALMATY ISTANBUL					ISTANBUL - ALMATY			
travelling time	arrival	stopover	departure	stations	arrival	stopover	departure	travelling time
00:29	16:55	180	19:55	Sary Agash	08:12	180	11:12	01:18
01:20	21:15	60	22:15	Uzbekistan	05:54	60	06:54	02:32
02:12	00:27	95	02:02	Havast	01:17	124	03:22	06:35
05:39	07:41	139	10:00	Marokand	16:20	142	18:42	06:01
06:10	16:10	98	17:48	Bukhara	08:26	113	10:19	01:51
01:57	19:45	175	22:40	Khodzhadavlet	04:50	105	06:35	00:30
00:25	23:05	180	02:15	Farap	01:20	180	04:20	08:50
18:12		927				904		27:37
33 hours & 39min					42 hours & 41 min			

TURKMENISTAN (449km)								
ALMATY ISTANBUL					ISTANBUL - ALMATY			
travelling time	arrival	stopover	departure	stations	arrival	stopover	departure	travelling time
13:55	16:10	180	19:10	Farap	13:30	180	16:30	00:40
00:40	19:50	90	21:20	Turkmenabat	11:00	110	12:50	18:30
05:55	03:15	90	04:45	Mary	02:30	90	04:00	13:40
06:15	11:00	720	23:00	Sarakhs	08:00	720	20:00	04:00
26:45		1080				1100		36:50
44 hours & 45 min					55 hrs & 10 min			

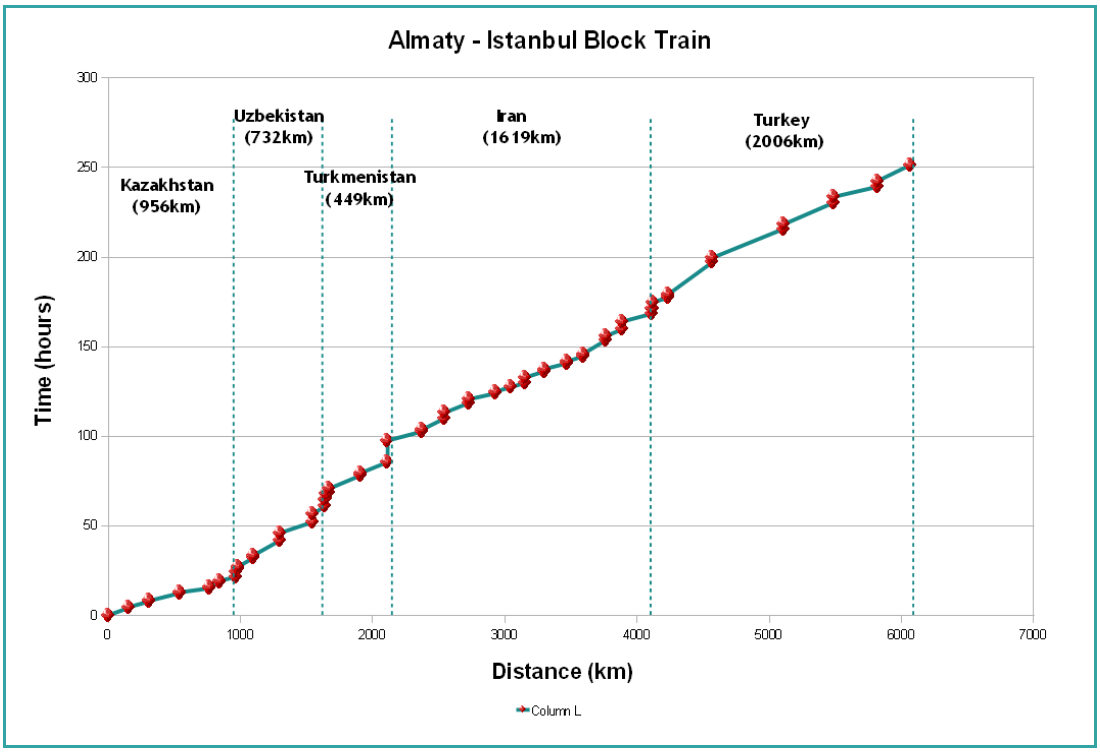
IRAN (1619km)								
ALMATY ISTANBUL					ISTANBUL - ALMATY			
travelling time	arrival	stopover	departure	stations	arrival	stopover	departure	travelling time
			23:00	Sarakhs				
03:00	02:00	60	03:00	Motahari	05:15	30	05:45	17:30
04:45	07:45	75	09:00	Neghab	23:15	135	01:30	10:00
05:45	14:45	125	16:50	Shahrood	11:30	105	13:15	15:15
03:30	20:20	60	21:20	Semnan	04:30	90	06:00	20:00
00:00	00:00	0	00:00	Garmsar	02:00	30	02:30	20:00
05:20	02:40	180	05:40	Aprin	22:30	90	00:00	17:00
03:40	09:20	90	10:50	Qazvin	17:00	120	19:00	17:00
03:20	14:10	60	15:10	Zanjan	12:00	45	12:45	18:15
03:00	18:10	90	19:40	Mianeh	07:00	120	09:00	06:00
05:50	01:30	150	04:40	Marageh	00:00	60	01:00	02:30
04:00	08:40	150	11:10	Tabriz	19:30	120	21:30	04:30
04:30	15:40			Razi			15:00	146:?/?
		1040				945		
64 hours								

TURKEY (2006km)								
ALMATY ISTANBUL					ISTANBUL - ALMATY			
travelling time	arrival	stopover	departure	stations	arrival	stopover	departure	travelling time
			03:05	Razi	11:32			
00:14	03:19	221	07:00	Kapikoy	09:18	120	11:18	18:17
02:41	09:41	39	10:20	Van	05:35	29	06:05	01:09
00:30	10:50	80	12:10	Tatvan	07:14	21	07:35	22:27
18:00	06:10	165	06:55	Malatya	06:02	203	09:25	02:50
16:15	23:10	176	02:10	Kayseri	12:15	224	10:00	10:42
12:01	14:11	199	17:30	Ankara	20:42	173	23:35	12:08
05:56	23:26	194	02:40	Eskisehir	11:43	142	14:05	09:55
09:05	11:45			Haydarpasa	03:55			
		1074				912		77:28
82 hours & 36 min					92 hours & 40 min			

The total time for both directions is as follows:

Route	Total time
Istanbul-Almaty Almaty - Istanbul	251 hours & 48 min (**10 days, 11 hours, 48 min**)

Figure 70 Almaty – Istanbul route Time distance plot



Source: Author's analysis

Regards the route Almaty Istanbul we can do the following observations:

- too many stopovers, **37 stopovers** with total idle time of the train 4.503 minutes (!) or 75 hours or **3 days and 3 hours** !! the train was idle during its trip. This is a long time for a block train to stay idle and the elimination of these three days could be a very strong competitive advantage to our rail service,
- the speed of the train (km/hr) was as follows:
  - Kazakhstan: 36 km/hr
  - Uzbekistan: 22 km/hr
  - Turkmenistan: 10 km/hr
  - Iran: 25,76 km /hr
  - Turkey: 24,35 km /hr
  - The average speed of the train is 23 km / hr which is considered a middle

to low speed for a block train.

Almaty - Bandar Abbas time schedule review and analysis

IRAN								
Bandar Abbas - Almaty					Almaty - Bandar Abbas			
travelling time	arrival	stopover	departure	stations	arrival	stopover	departure	travelling time
			19:45	Bandar Abbas	22:10			10:20
12:30	08:15	120	10:15	Sirjan	10:20	90	11:50	09:30
07:30	17:45	20	18:05	Mobarakeh	00:30	20	00:50	08:30
09:25	03:30	90	05:00	Tabas	14:30	90	16:00	07:30
08:30	13:30	90	15:00	Torbat Heydarich	05:30	90	07:00	10:00
12:45	03:45			Sarakhs			19:30	
50:40		320				290		45:50
56 hours					50 hours & 40 minutes			

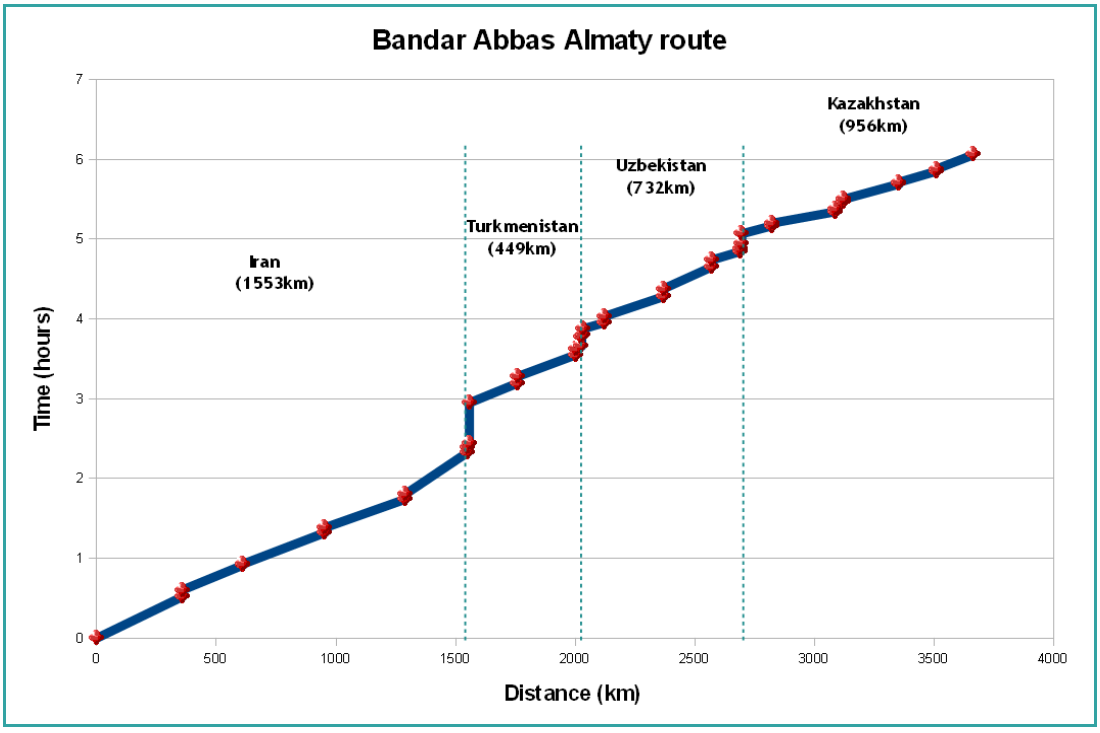
TURKMENISTAN								
Bandar Abbas - Almaty					Almaty - Bandar Abbas			
travelling time	arrival	stopover	departure	stations	arrival	stopover	departure	travelling time
		80	07:05	Sarakhs	20:10	80		
01:10	08:15	735	20:30	Sarakhs Turk	07:00	720	19:00	01:10
06:00	02:30	120	04:30	Mary	23:00	90	00:30	06:30
06:30	11:00	110	12:50	Turkmenabat	14:10	110	16:00	07:00
00:40	13:30	180	16:30	Farap	10:30	180	13:30	00:40
14:20		1225				1180		15:20
33 hours 45 minutes					35 hours & 10 minutes			

UZBEKISTAN								
Bandar Abbas - Almaty					Almaty - Bandar Abbas			
travelling time	arrival	stopover	departure	**stations**	arrival	stopover	departure	travelling time
			16:30	Farap			13:30	01:57
00:30	17:00	105	18:45	Khodzhadavlet	15:27	175	18:22	06:10
01:51	20:36	113	22:29	Bukhara	00:32	98	02:10	05:39
06:01	04:30	142	06:52	Marokand	07:49	139	10:08	02:12
06:35	13:27	124	15:29	Havast	12:20	95	13:55	01:20
02:32	18:01	60	19:01	Uzbekista	15:15	60	16:15	07:45

				n				
01:18	20:19	180	23:19	Sary Agash				00:00
		724						
33 hours & 39 minutes					42 hours & 41 minutes			

KAZAKHSTAN								
Bandar Abbas-Almaty					Almaty - Bandar Abbas			
travelling time	arrival	stopover	departure	stations	arrival	stopover	departure	travelling time
			13:38	Almaty		81		00:00
04:21	17:59	39	18:38	Otar		37		00:00
03:16	21:54	34	22:28	Shu		36		00:00
04:35	03:03	40	03:43	Taraz		40		05:04
02:21	06:04	42	06:46	Tulkubas	17:56	60	18:56	06:13
03:27	10:13	47	11:00	Arys	11:10	33	11:43	02:31
02:26	13:26	180	16:26	Sary Agash	05:39	180	08:39	
20:26		382				467		13:48
26 hours & 48 minutes								

Figure 71 Bandar Abbas - Almaty route time distance plot



Source: author's analysis

Regards the route Almaty Istanbul we can do the following observations:

- too many stopovers, **22 stopovers** with total idle time of the train 2.651 minutes or 44 hours and 11 minutes or **1 days and 22 hours and 11 minutes** the train was idle during its trip. We strongly believe that there is still room for improvement.
- the speed of the train (km/hr) was as follows:
    - Kazakhstan: 36 km/hr
    - Uzbekistan: 22 km/hr
    - Turkmenistan: 10 km/hr
    - Iran: 27,7 km /hr
    - The average speed of the train is 24 km / hr which is considered a middle to low speed for a block train.

The total time for both directions is as follows:

Route	Total time
Bandar Abbas - Almaty	145 hours & 24 minutes (**6 days, 1hours & 24 minutes**)??
Almaty - Bandar Abbas	

CHAPTER 5 Tariffs Review .

Tariff structure for the Bandar Abbas – Almaty route

The proposed tariffs as have been presented by the state rail organizations are the following:

Figure 72 Tariffs structure for Bandar Abbas - Almaty (vv) route - full containers

States	20''			40''		
	per km	km	per cntr	per km	km	per cntr
Bandar Abbas - Almaty						
Iran	$0,43	1619	$696,2	$0,62	1619	$1003,7
Turkmenistan	$1,54	449	$692	$2,79	449	$1252,71
Uzbekistan	$0,64	732	$468,5	$1,4	732	$1024,8
Kazakhstan	$0,47	956	$449,3	$0,75	956	$717
TOTAL			**$2306**	**TOTAL**		**$3998,21**
Almaty - Bandar Abbas						
Kazakhstan	$0,47	956	$449,3	$0,75	956	$717
Uzbekistan	$0,64	732	$468,5	$1,40	732	$1024,8
Turkmenistan	$1,54	449	$692	$2,79	449	$1252,71
Iran	$0,47	1619	$760,9	$0,69	1619	$1117,11
TOTAL			**$2371**	**TOTAL**		**$4111,62**

Source: Author's analysis

Figure 73 Tariffs structure for Bandar Abbas - Almaty (vv) route - empty containers

States	20''			40''		
	per km	km	per cntr	per km	km	per cntr
Bandar Abbas - Almaty						
Iran	$0,215	1619	$348	$0,31	1619	$502
Turkmenistan	$	449	$	$	449	$
Uzbekistan	$0,38	732	$278	$0,67	732	$490
Kazakhstan	$0,31	956	$296	$0,48	956	$459
TOTAL			**$**	**TOTAL**		**$**
Almaty - Bandar Abbas						
Kazakhstan	$0,31	956	$296	$0,48	956	$459
Uzbekistan	0,38$	732	$278	$0,67	732	$490
Turkmenistan	$	449	$	$	449	$
Iran	$0,235	1619	$380	$0,345	1619	$559
TOTAL			**$**	**TOTAL**		**$**

Source: Author's analysis

Lake Van Ferry Transport:

For Loaded Containers:	10,00 EURO per net-tonnes, minimum charge will be based on 10 tonnes per wagon.
For empty Containers:	10,00 EURO per net-tonnes, minimum charge will be based on 5 tonnes per wagon.

Customs Formality Charges:

Export Per Wagon:	10,00 EURO/wagon
Import Per Wagon:	7,00 EURO/wagon

Container Handling Charge:

For Loaded Containers: 25,00 EURO/Container
For Empty Containers: 5,00 EURO/Container

Comparison study with Intermodal transport

1st Intermodal Scenario

from Bandar Abbas (Iran - Origin) to Almaty (Kazakhstan - Destination)

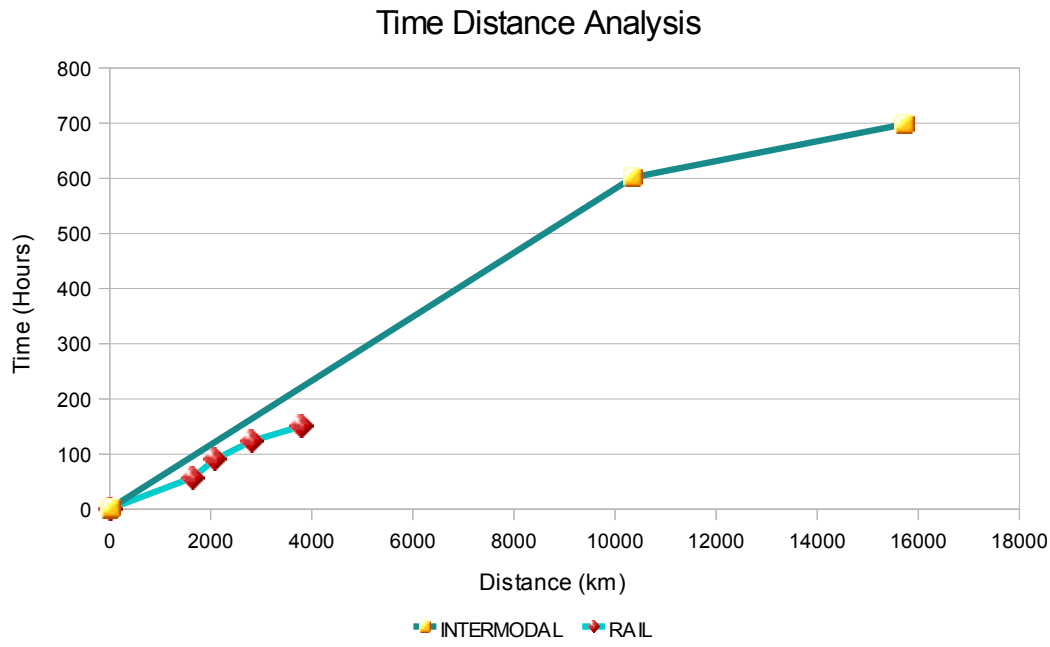
Maritime Transport		Rail Transport	
A Truck cost	D THC / Port costs	A Truck cost	D Unloading / other costs
B THC / Port costs	E Truck cost	B Loading / other costs	E Truck cost
C Maritime cost		C Rail cost	

MARITIME TRANSPORT: Bandar Abbas port - Almaty (via Qingdao port)			
Route	**km**	**Cost($)**	**Time(hr)**
Bandar Abbas – Bandar Abbas port by road	20	$150	2 hrs
Bandar Abbas port THC costs	-	$150	-
Bandar Abbas port other costs	-	$150	-
Bandar Abbas port – Qingdao port by sea	10336 km (5581nm)	$1550	25 days
Qingdao port THC costs	-	$220	-
Qingdao port other costs	-	$220	-
Qingdao port – Almaty by road	5370	$2650	4days
Total maritime transport	10336km	$1550	600hrs
Total road transport	5390km	$3540	98 hrs
TOTAL	**15726**	**$5090**	**698 hrs**

RAIL TRANSPORT: Bandar Abbas - Almaty			
Route	**km**	**Cost($)**	**Time(hr)**
Bandar Abbas – Bandar Abbas rail station by road	20	$150	1 hr
Bandar Abbas rail station loading cost	-	$30	-
Bandar Abbas rail station other costs	-	$30	-
Iran by rail	1619	$1003,7	56hrs
Turkmenistan by rail	449	$1252,71	33,45hrs
Uzbekistan by rail	732	$1024,8	33,39hrs
Kazakhstan by rail	956	$717	26,48hrs
Almaty rail station unloading cost	-	$30	-
Almaty rail station other costs	-	$45	-
Almaty rail station – Almaty by road	20	$150	1 hr
Total rail transport	3756	$4133,21	150hrs 12min
Total road transport	40	$300	2h
TOTAL	**3796**	**4433,21$**	**153hrs**

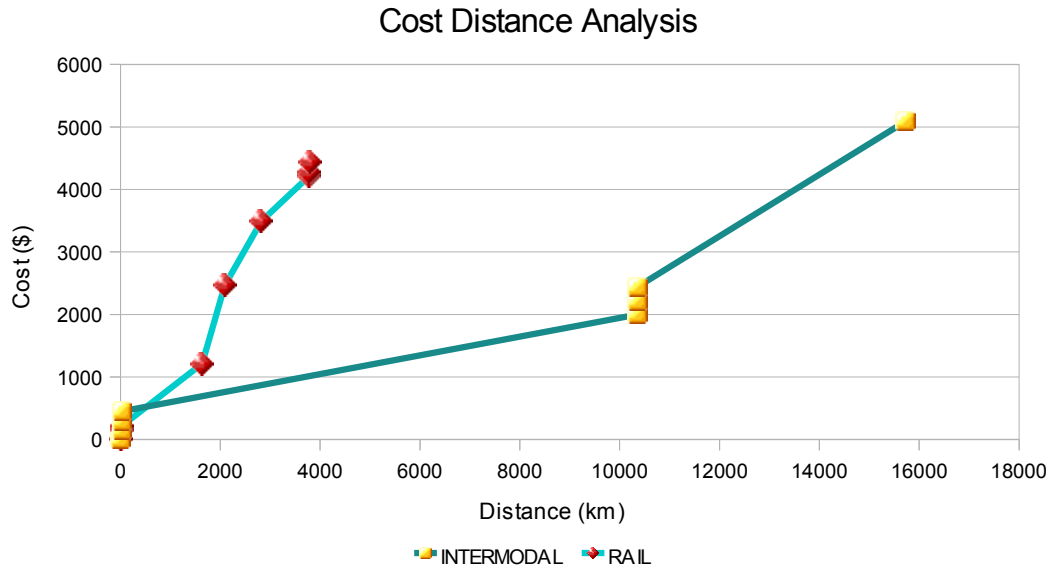
(b) Comparison study by using the Cost/Time, distance methodology

Time – Distance Plot



The difference in time between the two transport options is really large. The intermodal option needs 698 hours to reach Almaty and the rail needs 153 hours; But we actually did this comparison study as to show how close the two options are concerning cost: a difference of $656 for 12.000 kilometers is not much and can be really eliminated with better negotiations.

Cost – Distance Plot



2nd Intermodal Scenario

From Bandar Abbas (Iran - Origin) to Almaty (Kazakhstan- Destination)]

Maritime Transport		Rail Transport	
A Truck cost	D THC / Port costs	A Truck cost	D Unloading / other costs
B THC / Port costs	E Truck cost	B Loading / other costs	E Truck cost
C Maritime cost		C Rail cost	

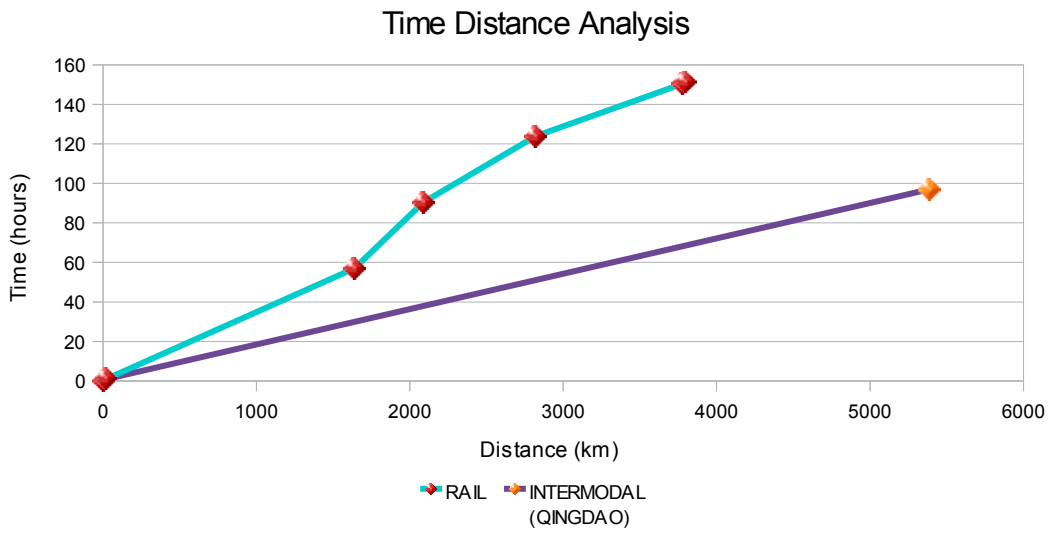
INTERMODAL TRANSPORT: Qingdao port - Almaty			
Route	**km**	**Cost($)**	**Time(hr)**
Qingdao port other costs	20	$150	1hr
Qingdao port – Almaty by road	5370	$2650	4 days
TOTAL	**5390**	**$2800**	**97 hrs**

RAIL TRANSPORT: Bandar Abbas - Almaty			
Route	**km**	**Cost($)**	**Time(hr)**
Bandar Abbas – Bandar Abbas rail station by road	20	$150	1 hr
Bandar Abbas rail station loading cost	-	$30	-
Bandar Abbas rail station other costs	-	$30	-

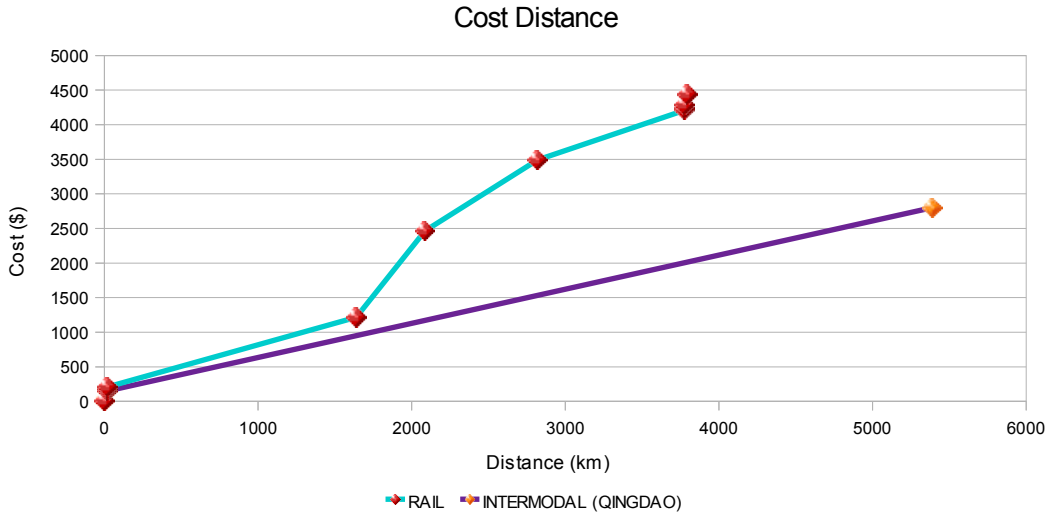
Iran by rail	1619	$1003,7	56hrs
Turkmenistan by rail	449	$1252,71	33,45hrs
Uzbekistan by rail	732	$1024,8	33,39hrs
Kazakhstan by rail	956	$717	26,48hrs
Almaty rail station unloading cost	-	$30	-
Almaty rail station other costs	-	$45	-
Almaty rail station – Almaty by road	20	$150	1 hr
Total rail transport	3756	$4133,21	150hrs 12min
Total road transport	40	$300	2h
TOTAL	**3796**	**4433,21$**	**153hrs**

(b) Comparison study by using the Cost/Time, distance methodology

Time – Distance Plot



Cost – Distance Plot



Comparison study with Road transport

From Bandar Abbas (Iran - Origin) to Almaty (Kazakhstan- Destination)]

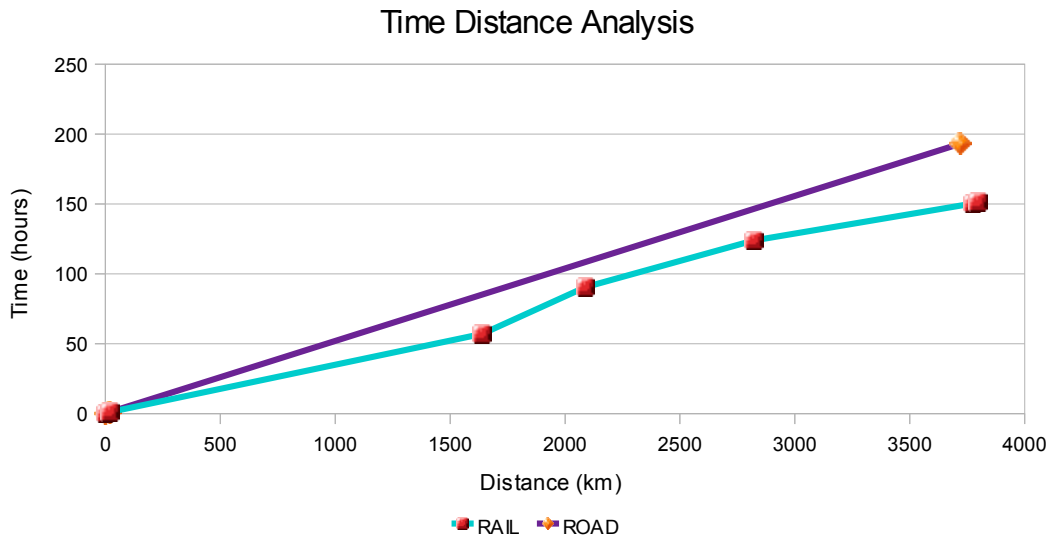
Maritime Transport		Rail Transport	
A Truck cost	D THC / Port costs	A Truck cost	D Unloading / other costs
B THC / Port costs	E Truck cost	B Loading / other costs	E Truck cost
C Maritime cost		C Rail cost	

ROAD TRANSPORT: Bandar Abbas port - Almaty			
Route	**km**	**Cost($)**	**Time(hr)**
Bandar Abbas port other costs	20	$150	1hr
Bandar Abbas port – Almaty by road	3700	$3800	8 days
TOTAL	**3720**	**$3950**	**193 hrs**

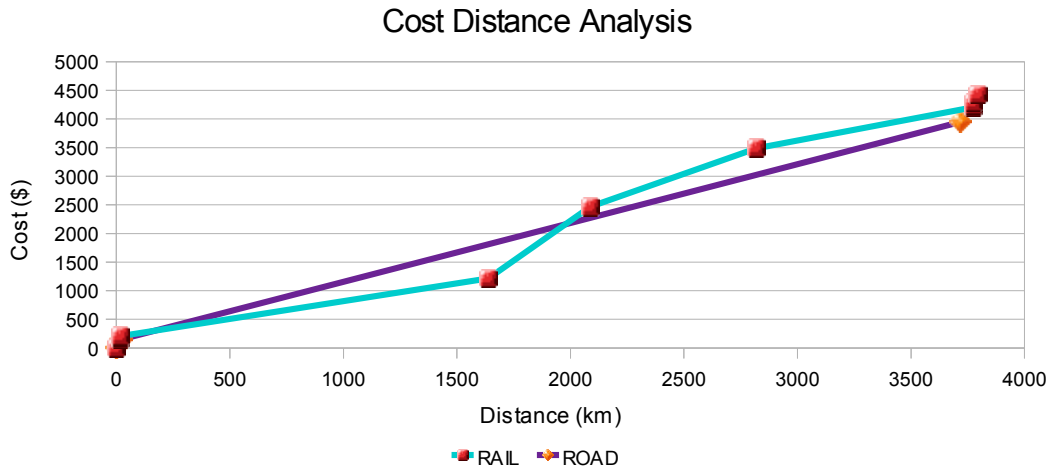
RAIL TRANSPORT: Bandar Abbas - Almaty			
Route	**km**	**Cost($)**	**Time(hr)**
Bandar Abbas – Bandar Abbas rail station by road	20	$150	1 hr
Bandar Abbas rail station loading cost	-	$30	-
Bandar Abbas rail station other costs	-	$30	-
Iran by rail	1619	$1003,7	56hrs
Turkmenistan by rail	449	$1252,71	33,45hrs
Uzbekistan by rail	732	$1024,8	33,39hrs
Kazakhstan by rail	956	$717	26,48hrs
Almaty rail station unloading cost	-	$30	-
Almaty rail station other costs	-	$45	-
Almaty rail station – Almaty by road	20	$150	1 hr
Total rail transport	3756	$4133,21	150hrs 12min
Total road transport	40	$300	2h
TOTAL	**3796**	**4433,21$**	**153hrs**

(b) Comparison study by using the Cost/Time, distance methodology

Time – Distance Plot



Cost – Distance Plot



Tariff structure for the Almaty – Istanbul route

The proposed tariffs as have been presented by the state rail organizations are the following:

Figure 74 Tariffs structure for Almaty - Istanbul (vv) route - full containers

States	20''			40''		
	per km	km	per cntr	per km	km	per cntr
	Almaty - Istanbul / Istanbul - Almaty					
Turkey	$0,31	2006	$621,86	$0,41	2006	$822,46
Iran	$0,23	2014	$463,22	$0,38	2014	$765,32
Turkmenistan	$1,54	449	$691,46	$2,79	449	$1252,71
Uzbekistan	$0,64	732	$468,48	$1,40	732	$1024,8
Kazakhstan	$0,47	956	$449,32	$0,75	956	$717
TOTAL			$2694,34	TOTAL		$4582,29

Source: Author's analysis

Figure 75 Tariffs structure for Almaty - Istanbul (vv) route - empty containers

States	20''			40''		
	per km	km	per cntr	per km	km	per cntr
	Almaty - Istanbul / Istanbul - Almaty					
Turkey	$0,23	2006	$461,38	$0,29	2006	$581,74
Iran	$0,11	2014	$221,54	$0,19	2014	$382,66
Turkmenistan	$	449	$	$	449	$
Uzbekistan	$0,38	732	$278,16	$0,67	732	$490,44
Kazakhstan	$0,31	956	$296,36	$0,48	956	$458,88
TOTAL			$	TOTAL		$

Source: Author's analysis

Comparison study with Intermodal transport

1st Scenario

From Almaty (Kazakhstan - Origin) to Istanbul (Turkey - Destination)]

Maritime Transport		Rail Transport	
A Truck cost	D THC / Port costs	A Truck cost	D Unloading / other costs
B THC / Port costs	E Truck cost	B Loading / other costs	E Truck cost
C Maritime cost		C Rail cost	

MARITIME TRANSPORT: Almaty (via Bandar Abbas port) - Istanbul (via Istanbul port)

Route	km	Cost($)	Time(hr)
Almaty – Bandar Abbas port by road	2873	$2300	71 hrs
Bandar Abbas port THC costs	-	$150	-
Bandar Abbas port other costs	-	$150	-

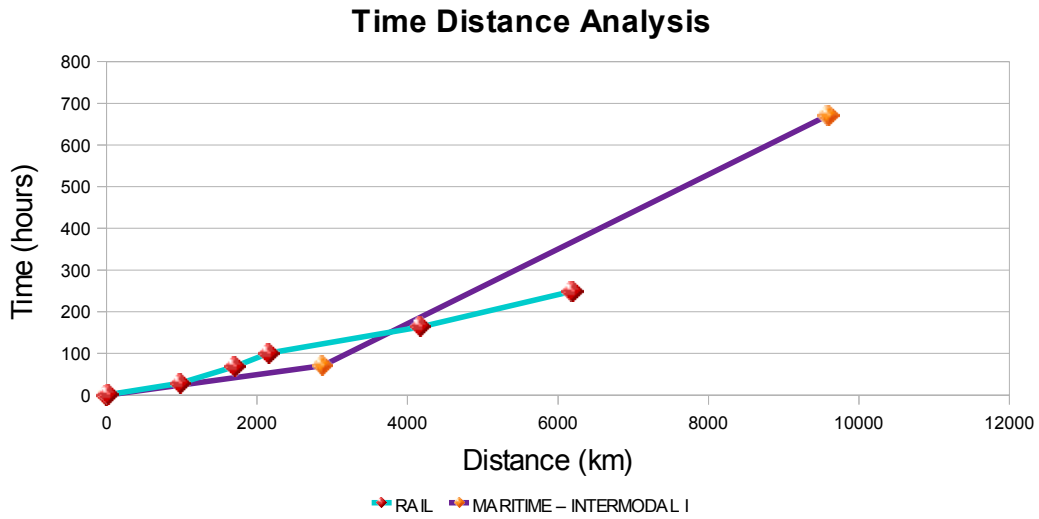
Bandar Abbas port – Istanbul port by sea	6711	$1650	25 days
Istanbul port THC costs	-	$220	-
Istanbul port other costs	-	$220	-
Istanbul port – Istanbul by road	20	$300	1 hr
Total maritime transport	6711	2370	600hrs
Total road transport	2893	2600	72 hrs
TOTAL	**9604**	**$4970**	**672 hrs**

RAIL TRANSPORT: Almaty – Istanbul

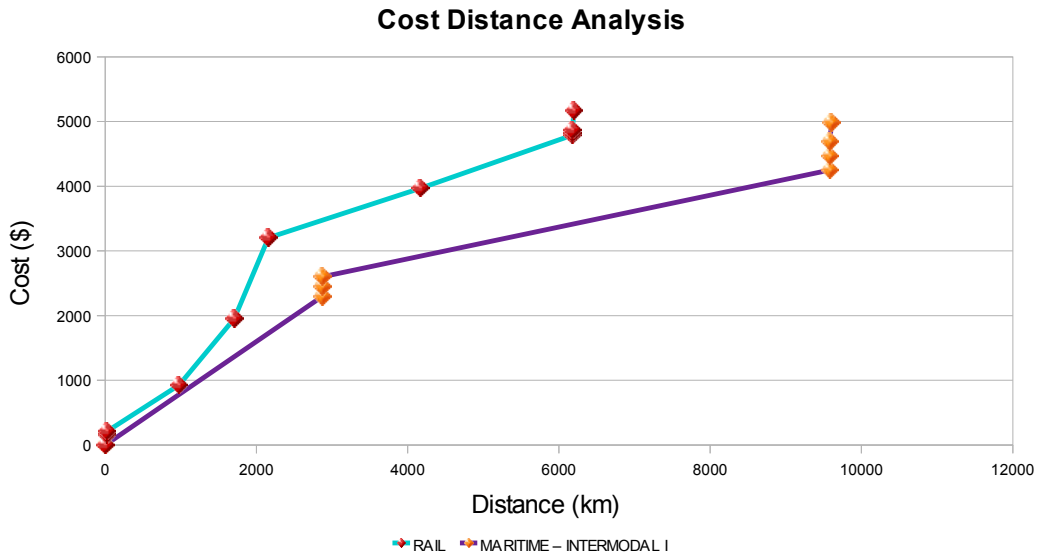
Route	km	Cost($)	Time(hr)
Almaty – Almaty rail station by road	20	$150	1 hr
Almaty rail station loading cost	-	$30	-
Almaty rail station other costs	-	$30	-
Kazakhstan by rail	956	$717	27hrs 56min
Uzbekistan by rail	732	$1024,8	40hrs18min
Turkmenistan by rail	449	$1252,71	32hrs15min
Iran by rail	2014	$765,32	63 hrs
Turkey by rail	2006	$822,46	85 hrs
Istanbul rail station unloading cost	-	$30	-
Istanbul rail station other costs	-	$45	-
Istanbul rail station – Istanbul by road	20	$300	1 hr
Total rail transport	6157	$4717,29	248hrs29min
Total road transport	40	$450	2h
TOTAL	**6197**	**$5167,29**	**250 hrs 29min**

(b) Comparison study by using the Cost/Time, distance methodology

Time – Distance Plot



Cost – Distance Plot



2nd Intermodal Scenario

From Almaty (Kazakhstan - Origin) to Istanbul (Turkey - Destination)]

Maritime Transport		Rail Transport	
(A) Truck cost	(D) THC / Port costs	(A) Truck cost	(D) Unloading / other costs
(B) THC / Port costs	(E) Truck cost	(B) Loading / other costs	(E) Truck cost
(C) Maritime cost		(C) Rail cost	

MARITIME TRANSPORT: Istanbul (via Novorossiysk port) - Almaty

Route	km	Cost($)	Time(hr)
Istanbul - Istanbul port by road	20	$200	2 hrs
Istanbul port THC costs	-	$150	-
Istanbul port other costs	-	$150	-
Istanbul port - Novorossiysk port by sea	837km (452nm)	$1000	8 days
Novorossiysk port THC costs	-	$150	-

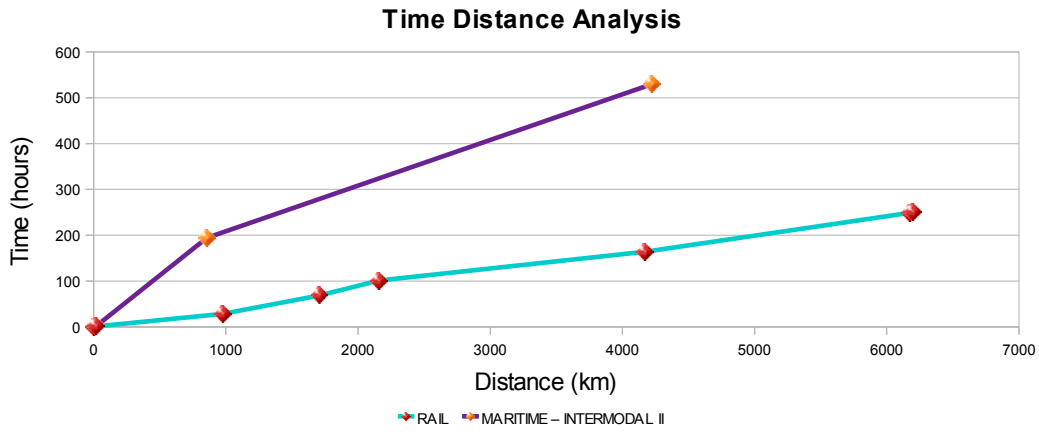
Novorossiysk port other costs	-	$150	-
Novorossiysk port – Almaty by rail	3370	$2527,5	14 days
Total maritime transport	837	$1600	192 hrs
Total Intermodal transport	3390	$2727,5	338 hrs
TOTAL	**4227**	**4327$**	**hrs**

RAIL TRANSPORT: Almaty – Istanbul

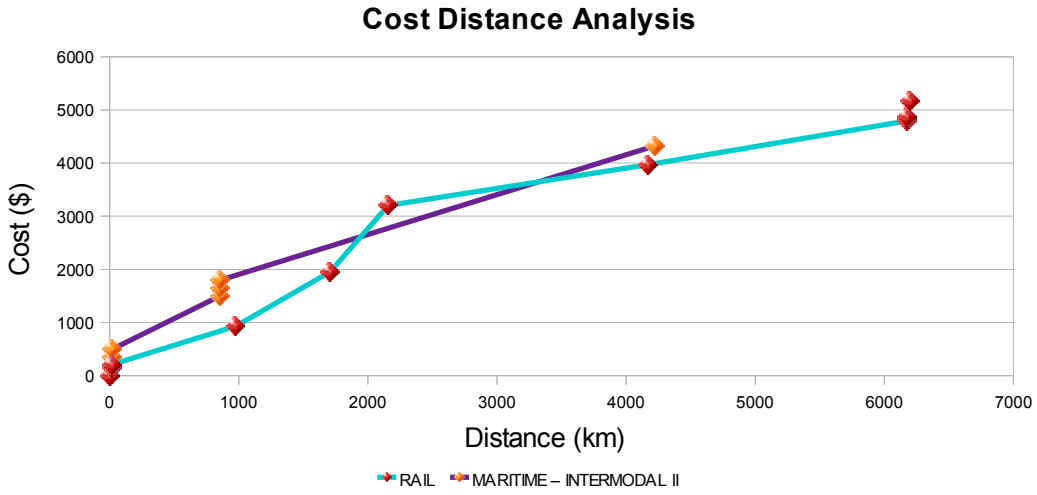
Route	km	Cost($)	Time(hr)
Almaty – Almaty rail station by road	20	$150	1 hr
Almaty rail station loading cost	-	$30	-
Almaty rail station other costs	-	$30	-
Kazakhstan by rail	956	$717	27hrs 56min
Uzbekistan by rail	732	$1024,8	40hrs18min
Turkmenistan by rail	449	$1252,71	32hrs15min
Iran by rail	2014	$765,32	63 hrs
Turkey by rail	2006	$822,46	85 hrs
Istanbul rail station unloading cost	-	$30	-
Istanbul rail station other costs	-	$45	-
Istanbul rail station – Istanbul by road	20	$300	1 hr
Total rail transport	6157	$4717,29	248hrs29min
Total road transport	40	$450	2h
TOTAL	**6197**	**$5167,29**	**250 hrs 29min**

(b) Comparison study by using the Cost/Time, distance methodology

Time – Distance Plot



Cost – Distance Plot



CHAPTER 6. Customs Issues Analysis

Introduction -

The railway networks of the CIS countries and China, Islamic Republic of Iran and Turkey provide rail transport linkages for Central Asia and Caucasus. These networks are identified regionally through a number of agreements and intergovernmental programmes, which include:

- Multilateral agreements under the auspices of ECE, such as the European Agreement on Main International Railway Lines (AGC) and AGTC;
- Trans-Asian Railway (TAR) routes identified by ESCAP;
- Transport Corridor Europe-Caucasus-Asia (TRACECA) routes; and
- Railway routes for container and passenger trains promoted by the ECO.

In addition, the framework of legal instruments regulating rail transport in Central Asian republics consists of national regulations and a number of important conventions, such as the 1972 Customs Convention on Containers and two conventions specific to railways:

- The Agreement on International Rail Freight Communications (SMGS), which has 24 member countries, including countries in CIS, China and Islamic Republic of Iran, and is managed by OSJD; and
- The Uniform Rules Concerning the Contract for International Carriage of Goods by Rail (CIM), formulated by the Convention Concerning International Carriage by Rail (COTIF) and managed by the International Organization for International Carriage by Rail (OTIF).

National regulations concerning rail transport usually define the status of the national railway organization and its functions concerning infrastructure, including track, rolling stock and train operations. Historically, railway organizations in Central Asia had a monopoly on infrastructure and operations, inherited from the former Soviet Union, but recent policy changes in some countries has lead to greater private sector participation. For example, Kazakhstan recently introduced legislation permitting private rail freight operators, and private entities have emerged in that country operating their own rolling stock. However, difficulties have been reported, as the current regulations under SMGS do not cover the freight forwarding business sufficiently.

The railway organizations that are members of OSJD work under different legal, economic and technical conditions. The main difference is in the application of different systems of transport laws (SMGS, on the one hand, and COTIF, on the other) and the existence of different gauges (mainly 1,435 mm and 1,520 mm), to which the various standards and technical provisions are connected.

Common CIM SMGS project – application processes analysis

The implementation of the CIM/SMGS procedures is the responsibility of different rail goods transport companies. The CIM/SMGS consignment note simplifies and accelerates rail cargo transport on the West-East and East-West axis. It is known as a bank and customs document. Its instructions are included in the CIM/SMGS Consignment Note Guide. Currently, customers are not constrained to use the new document, the classic re-dispatching option being still valid for them.

The CIM consignment note defines standardised contractual specifications for international rail freight transport, while the SMGS consignment note includes the Contract of International Transport of Goods by Rail. Both transport contracts can be attached to a single A4 sheet, thus eliminating additional costs for activities which don't provide added value, as well as errors by eliminating the transcription of consignment notes when traffic is re-dispatched. Consignment notes also elevate the level of legal security for all traffic participants.

The advantages also include a shorter transit period by reducing the time spent with filling in the CIM/SMGS interfaces. Also, the authorities acknowledge the bill for carried goods attached to the consignment note as customs paper, if a credit letter is also attached. A software product is available to complete and imprint the consignment note and to deliver the data it includes. CIT and SMGS members benefit of discount when buying the software. The discount is also available for their customers.
The Guide implementation stage was made public on the 1st of July and includes the CIM/SMGS consignment note model and dispositions concerning its application. This consignment note is an alternative to the classic transport system which implies the transcription of the SMGS consignment note to a CIM consignment note or the CIM consignment note to a SMGS consignment note to the re-dispatching place. "<<The legal interoperability CIM/SMGS >>project is tasked with eliminateing all barriers that we are responsible for. The first phase included the elaboration of a CIM/SMGS consignment note and I can say that this first phase of the project was a success"[15].

The CIM/SMGS Consignment Note Guide addresses to the CIT members and their customers, as well as to the SMGS participants, consigners and their consignees and apply to consignments subject to the CIM Uniform Rules on the one hand and to the SMGS uniform rules delivered together with a CIM/SMGS consignment note on the other hand. This Guide also applies to the goods carried by CIM consigners and SMGS railways and which remain at the re-dispatching location under the supervision of a CIM consigner or a SMGS railway. Under the CIM scope of application, the Guide dispositions apply only in those situations when they are included on the contractual terms and conditions that are mandatory for

15 interview for CIT Rail.org, Thomas Leimgruber, Secretary General CIT.

customers and in the collaboration contracts signed between carriers. Under the SMGS scope of application, the dispositions of the present Guide apply only on the traffic routes previously established by SMGS participants who apply the present Guide. "*The long term objective is a single legislative framework for transports from the Atlantic to the Pacific. A single standard legislative framework can contribute to a significant additional cut of transport costs and acceleration of traffic flows*", Leimgruber pointed out.

Figure 77 illustrates a specimen consignment note. It consists of six numbered sheets in A4 format (figure 76):

Figure 76 Analysis of 6 numbered sheets of the CIM/SMGS

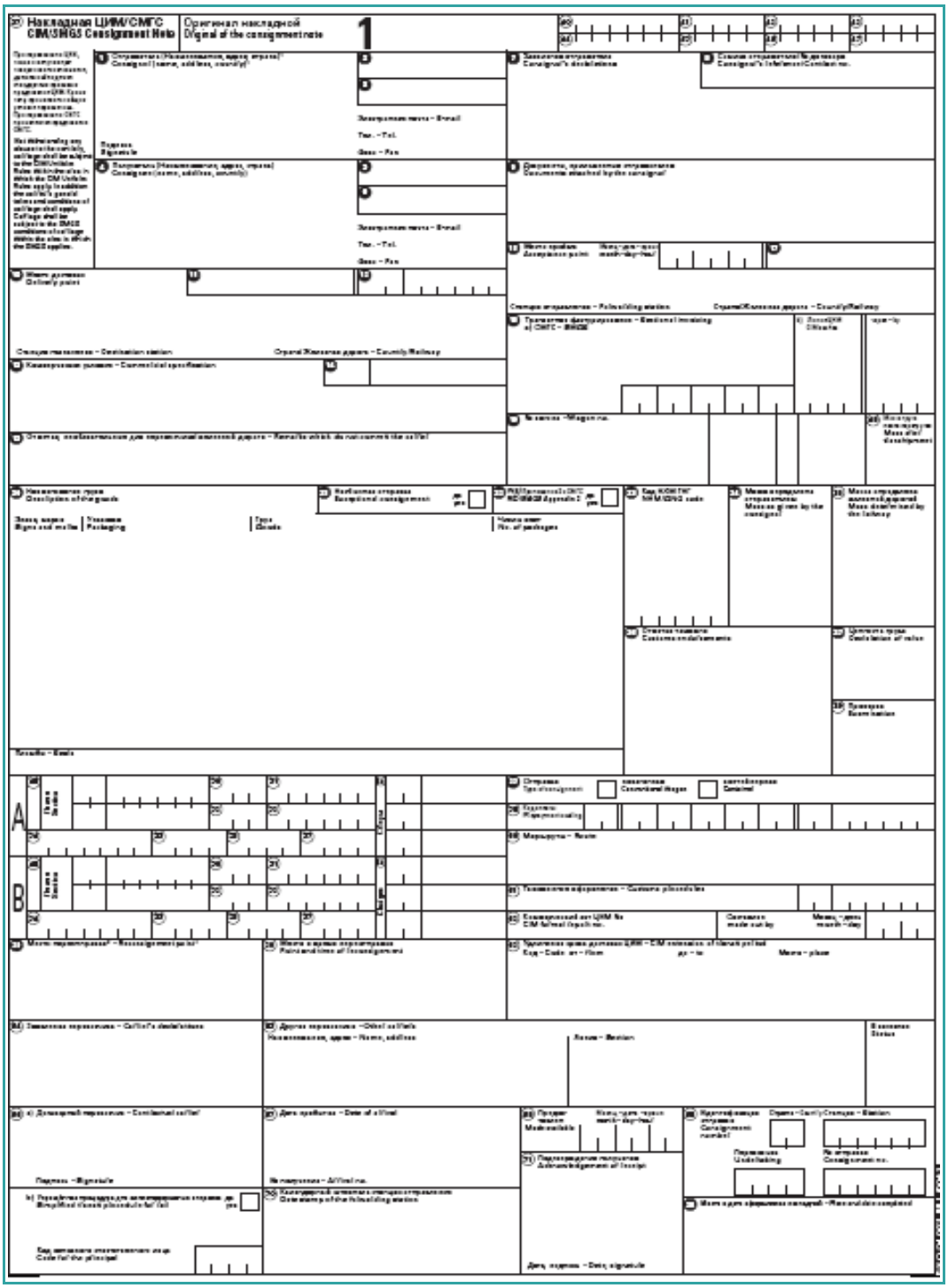
Sheet		Retention of the sheet
No	**Description**	
1	Original of the consignment note	Consignee
2	Invoice	CIM carrier at the destination or SMGS destination railway
CIM 5 SMGS 3	Duplicate of the consignment note	Consignor
4	Delivery note	CIM → SMGS traffic: destination railway SMGS → CIM traffic: not used
CIM 3 SMGS 5	Arrival note/Customs	CIM → SMGS traffic: consignee/customs SMGS → CIM traffic: destination carrier/customs
6	Duplicate invoice	CIM → SMGS traffic: forwarding carrier SMGS → CIM traffic: not used

Source: CIT

Where consignments come from states that apply the SMGS, the consignor is to make out additional copies of the invoice, two copies are to be made out for the SMGS forwarding railway and one copy for each participating SMGS transit railway. A specimen of the additional invoice is illustrated in figure 78.

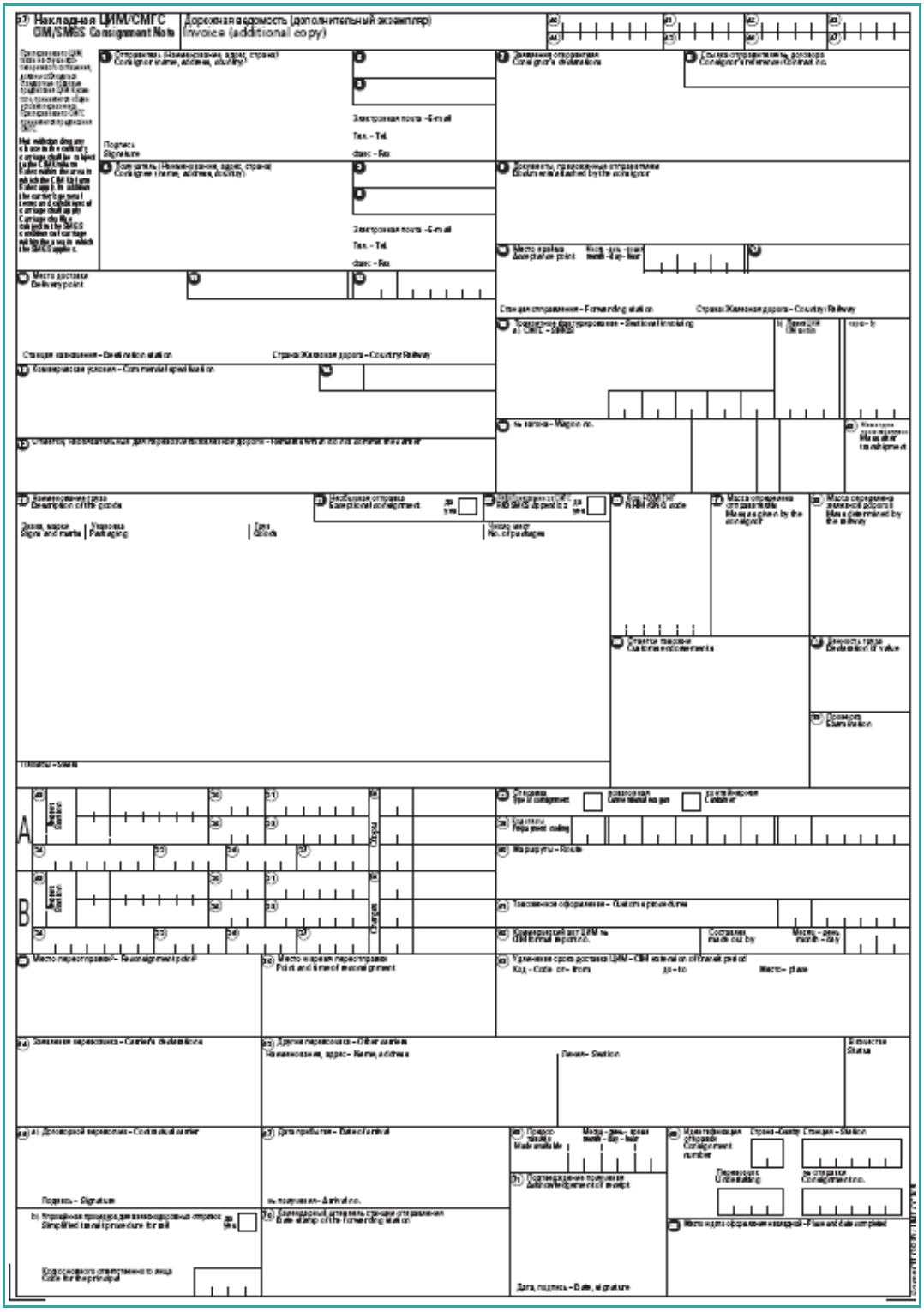
Where consignments come from states that apply the CIM Uniform Rules, these additional copies of the invoice are to be supplied by the SMGS railway at the transhipment/gauge change point in the form of photocopies of the invoice which are to be authenticated by the date stamp.

Figure 77 CIM / SMGS Consignment Note



Source: CIT

Figure 78 Additional invoice for SMGS



Source: CIT

Block trains, groups of wagons and groups of containers consigned with a single CIM/SMGS consignment note.

Block trains, groups of wagons and groups of containers may be consigned with a single CIM/SMGS consignment note and a CIM/SMGS wagon list/container list provided there has been prior agreement between the consignor and the carriers taking part and provided the following conditions are satisfied:

- same consignor and consignee,
- same acceptance point/forwarding station,
- same delivery point/destination station,
- same commodity (unless agreed otherwise).

Analysis of Customs issues

The 2nd meeting of the en route countries concerning the Almaty Istanbul and Almaty Bandar Abbas routes that took place in Tehran the 21st of June 2010 decided that all the enroute countries of the Almaty Bandar Abbas route are members of OSJD and therefore the OSJD rules and regulations will be applicable.

Application of the Common CIM/SMGS regulations on Istanbul-Almaty route.

At the same meeting the delegation of Turkey stated that they are not ready to apply the common CIM/SMGS Consignment Note due to the existing legal considerations in Turkey.

The delegation of Kazakhstan stated that they are in contact with OSJD and other relevant international institutions to examine the utilization of the above mentioned Common Consignment Note.

The Meeting decided that the Secretariat will keep contact with OTIF, CIT, OSJD and the Member States to consider actualizing the application of the Common Consignment Note in the region.

CHAPTER 7. Corridor Management Mechanism for a network of block trains in Central Asia

Corridor management mechanisms: Introduction

The UNECE's Inland Transport Committee defines an international transport corridor as part of a national or international transport system which maintains considerable international cargo and passenger transportation between certain geographic regions and includes the rolling-stock and immovable structures of all modes of transport working on the respective route, and all technological, organisational and legal conditions for such transportation.

From an economic perspective, the function of a corridor is to promote both internal and external trade by providing more efficient transport and logistics services. The primary reason for designating these routes as part of a corridor is to focus attention on improving not only the routes but also the quality of the transport and other logistic services in the corridor. This quality is measured in terms of the transit time, and cost for shipment of goods along the corridor, the reliability of the services in terms of transit time and the flexibility provided in terms of diversity of services offered on multimodal routes.
The formal designation of a specific set of routes as a corridor is generally part of a government endeavour to focus its efforts on improving the quality of transport services to these routes.

While it is important to separate the concepts of economic corridors and transport corridors, the fact is that most transport corridors are developed to support regional economic growth. They provide transport and other logistics services that promote trade among the cities and countries along the corridor, e.g. the corridors connecting the countries of the Greater Mekong Subregion. The significant relationship between transport and economic corridors has least-developed countries in Eastern and Southern Africa to incorporate the development of corridors into Spatial Development Initiatives (SDI).

Foreign trade corridors are used to transport the imports and exports of a country. As such, they have an endpoint at either a border crossing or international gateway. The

Source: World Bank

corridors are determined by a combination of the market the location that determine where production of exports and consumption of imports are concentrated and by national legislation that stipulates the locations where foreign trade may enter and exit the country. Transit trade corridors are used to transport the cargo of other countries. They are bounded by a border crossing at one end and an international gateway or border crossing at the other. While these routes are determined by national legislation, this legislation governing movement of transit goods is often coordinated with adjoining countries through

bilateral agreements or, in a few cases, regional agreements. These agreements stipulate the procedures to be followed at the end points.

Two additional parameters should be considered in evaluating corridor performance, reliability and flexibility. Because of increasing attention to the timeliness of shipments and the importance of order fulfilment as a component of competitive advantage, it is necessary to consider not only the average time and cost for movement through a corridor but also the reliability in meeting delivery times. reliability refers to the variation in transit time for a specific form of shipment and origin-destination pair. This variation is due to a combination of controllable factors, such as condition and availability of equipment, coordination of sequential activities, and labour productivity and uncontrollable environmental factors such as fluctuations in demand, level of background traffic and weather conditions. The greater the variation, the harder it is to predict actual transit time and therefore to coordinate sequential activities in the supply chain. Shippers and consignees accommodate this uncertainty by adding slack time to their planned delivery times. This increases the average order cycle time. An improvement in the quality of a transport service that reduces the variation of transit time, allows shippers/consignees to reduce their slack time and thus the average order cycle. It also reduces the likelihood of bunching of arrivals and departures and of the associated delays.

Mechanisms to improve corridor performance.

The mechanisms available to the public sector include capital investment, new legislation and regulatory reform. Capital investment was the key component of the strategy for developing the Pan- American Highway, but its performance suffered from lack of attention given to the regulatory reform and legislation to facilitate cross-border movements. The Northern and Central Corridors in East Africa initially relied on investment but have since focused on legislation and regulatory reform to facilitate the movement of goods on the road and rail infrastructure. The EU relied on legislation to implement strategies for development of the trans-European transport network.

The basic strategies of the EU are worth noting:

- Insure interoperability though harmonization of technical standards for infrastructure and rules applied to transport service providers;
- Improve interconnections of national networks that have been designed primarily to meet domestic needs, and
- Increase market access for transport services provided by one member state in other member states.

Responsibility for investment in infrastructure was assigned to individual governments. The private sector was given responsibility for improving the management of transport and

other logistics services.

Figure 79. Mechanisms to improve corridors performance

Strategy	Mechanisms	Areas Affected	Impacts Affecting	
			Costs	Time
Increase and Improve Interconnections	Establish New Transfer Points Add Facilities Simplify Procedures and Documentation Standardize Documentation Consolidate CIQS Inspections Relocate Inspection Inland or at Marshalling Yards (for rail) Provide New Logistic Services Monitor Performance	Border Crossings And Gateways	Shorten Door-to-Door Routes Reduce Door-to-Door Delays Reduce Administration Reduce Processing Time Increase Transparency Simplify Handling of Vehicles and Cargo Value added Reduce Delays	
Establish Interoperability	Harmonize Technical Standards and Rules for Operators Simplify Allocation of Liabilities Standardize Certification	Transport Services	Increase Cross-border Competition And Provide Economies of scale Reduce Equipment Exchange "	Reduce Equipment Exchange " "
Increase Market Access	Allow Cross-border Movements Eliminate Cabotage Deregulate Pricing Commercialize Public Services Regulate Anti-competitive Behavior	Transport Services Border Crossings And Gateways	Reduce Equipment Exchange and cargo handling Improve Variety and Quality of Services Increase Availability of Services Introduce Competitive Pricing and Variety of Services "	
Increase Route Capacity	Capital Investment (New, Expansion, Rehabilitation) Operational Changes	Transport Services	Improve Equipment Utilization and Reduce O&M	Increase Operating Speed and Reduce Congestion

Source: World Bank

Source: World Bank

Corridor Management Mechanism: the new approach.

The mechanisms concerning corridor management are focused on improvement in service reliability, increase in track capacity, reduction in journey times and decrease in rail infrastructure manager costs. All these issues are very important to be evaluated and promoted for the benefit of the countries participated to the corridor. In addition, this specific corridor, Islamabad – Tehran – Istanbul will operate a container service which means that the countries participating to this corridor should cooperate really very closely and run these trains. Rightfully, the following questions arise:

☑Which country, and therefore Rail Organization will be responsible for the daily operations of the train?

☑Which rail organisation will answer the calls of the clients?

☑Which rail organisation will sell the service?

☑Which rail organisation will issue invoices to the clients and collect the money?

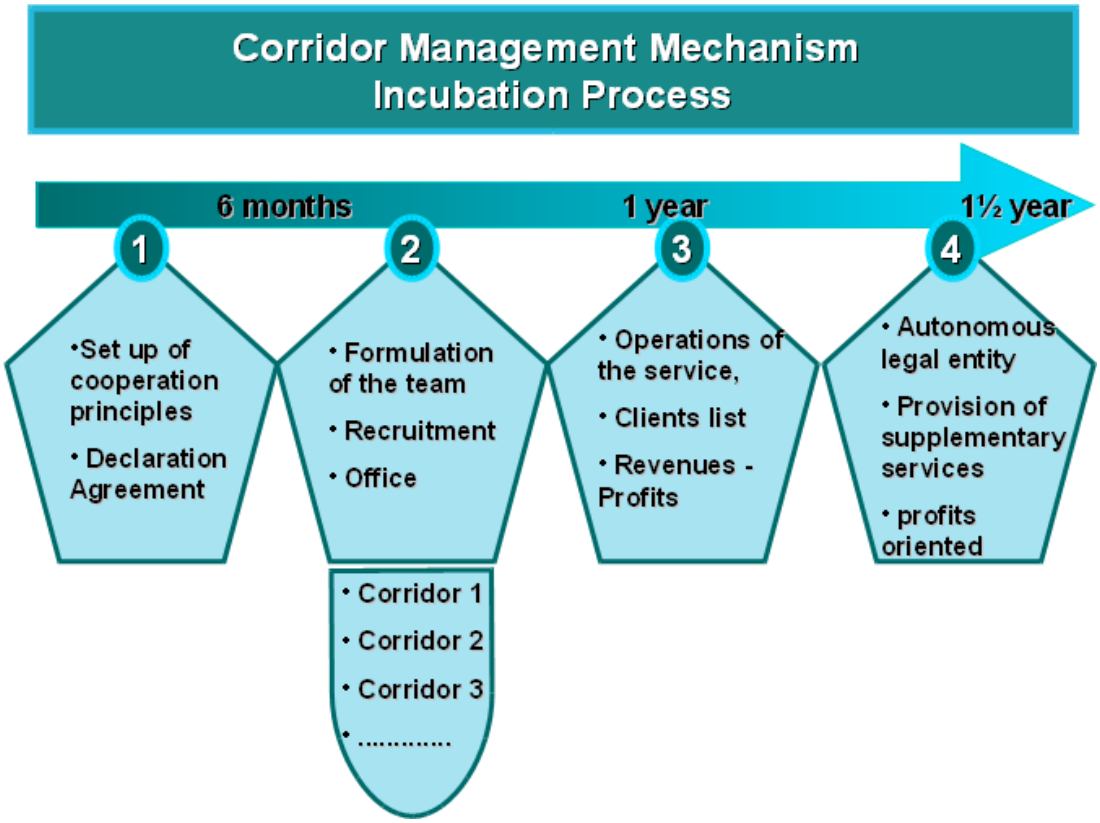
The market, the clients, wants to know one customer service not three!

It is obvious that we face two issues: first is the "theoretical" approach of a corridor management mechanism where the five or more countries should cooperate as to achieve the above mentioned objectives, increase track capacity, reduce journey times, decrease rail infrastructure costs etc. Second is the practical approach of a corridor management mechanism where the five or more countries should operate weekly rail services. Therefore, the challenge for this corridor management mechanism would be to create a common operations "office" that will be responsible for all kind of operational

issues – invoicing, administration, sales, marketing etc – recruited by the five or more rail organisations and financed by service profits. We suggest that the corridor management should be based on the principles of *business incubation* where a team is being formulated in the beginning, recruited by the three rail organisations. This team will be hosted somewhere centrally – possibly at ECO secretariat – from where will operate the trains. ECO Secretariat in this case will play the role of the incubator and facilitator for a specific period of time. The deadline of this incubation period will be when the revenues of the service can finance its costs. The main objective is this team to end up to an autonomous legal entity with main shareholders the five or more rail organisations.

The main steps for the development of such a corridor management mechanism are the follows:

Figure 80. Corridor Management Mechanism: a new approach



Source: Author's analysis

☑ Set up of cooperation principles – including operational issues like what are the real costs of train operations and what is each rail organization's contribution etc – and sign of a declaration agreement where all the issues should be analytically described. This declaration agreement will be the most difficult part as will be a kind of contract among the three parties and will determine the future operations of the service and therefore the allocation of profits and of losses!

☑ The next step will be the formulation of the team – how many people we need for the beginning, what kind of skills etc – and the recruitment of the team by the three organizations. The most important issue is that the team will be recruited by employees that today work at the three rail organizations. At this step the office of the team will be setup and therefore its telephones lines – customer service – marketing material etc.

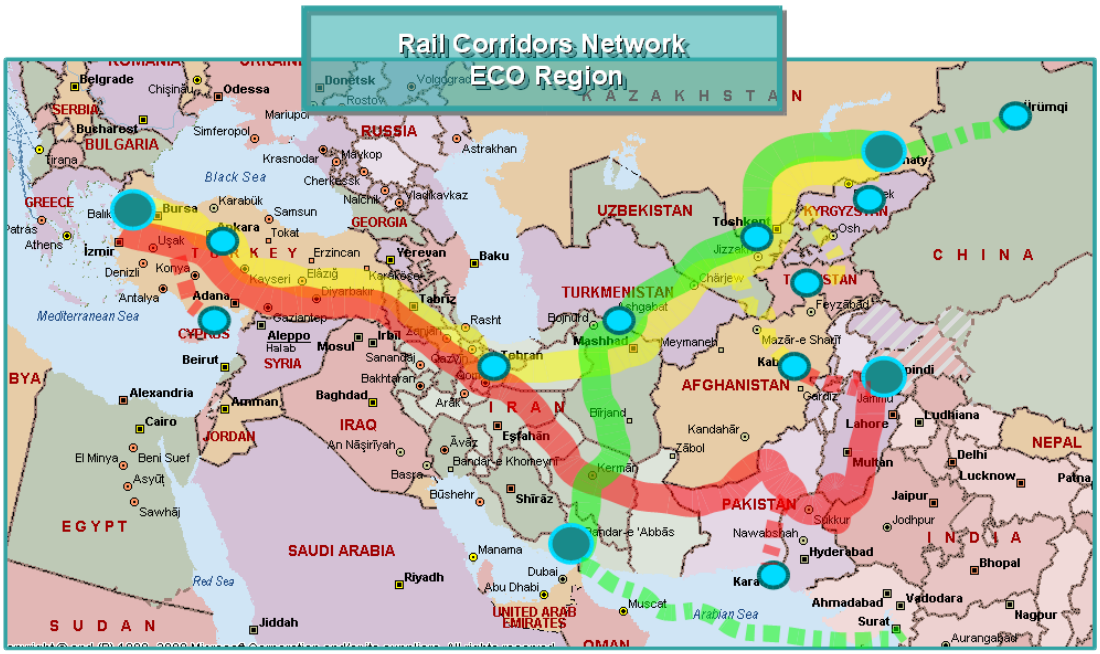
☑ At the third step the operations will start. The team will start operate the train, sell the service, do meetings with clients, finalize time schedules, tariffs and other operational issues.

☑ The forth step is depending only in one word: profits. When the service has profits the "team" is ready to be transformed to an autonomous legal entity that will be financed by its own revenues. Then ECO's role as incubator terminates and its contribution as facilitator crowned with success!

The Following map illustrates the new concept, a network of rail corridors in ECO region where the one feeds the other and all together efficiently connect Asia with Europe.

☑ The map illustrates the three existing rail services of ECO, Almaty – Istanbul (yellow line, Almaty – Bandar Abbas (green line) and the Istanbul – Islamabad (red line)

Figure 81. Rail Corridors Network in ECO region



Source: Author's analysis

☑ Four are the main points of origin and destinations but all the countries and main cities of central Asia can be served by these rails services.

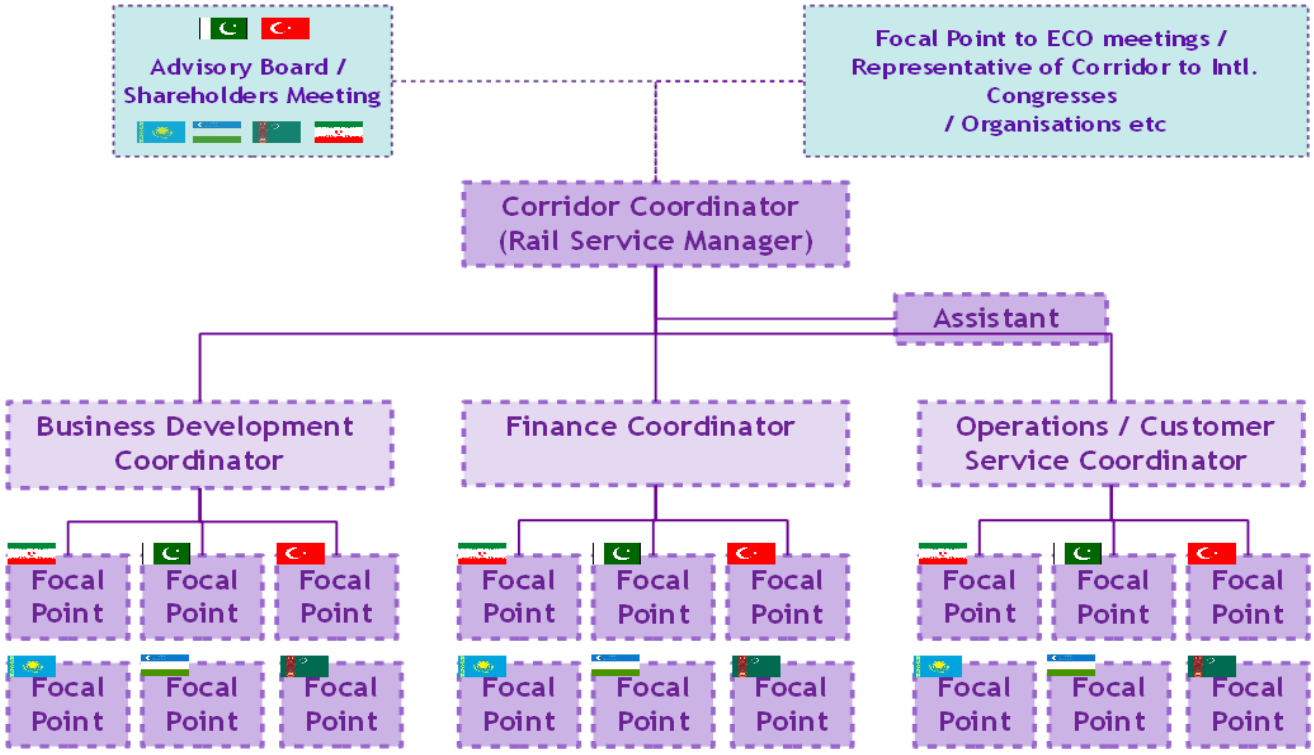
Future development and organization chart

The development of the Organization Chart of the new operations unit is strictly connected with the development of a new Corridor Management Mechanism (CMM). In the following chapter we will elaborate further the way and the processes that this new Corridor Management Mechanism will be based on. In this paragraph we will illustrate and analyze the organization chart that will support this CMM and the daily operations of the rail service.

As we have mentioned many times the difficult part is not to get consensus among the countries concerning cooperation issues – time schedule, tariffs etc – but to establish a daily operations office that will support the operations of the rail service. Who is selling the service? Who is responsible for the business development and based on which strategy? Who is answering on calls of customers? Who is invoicing the customers?

There are two ways to establish this operations office: a) the three State Rail Organizations are being considered as shareholders to this new unit and therefore participate equally to expenses and revenues, b) the three State Rail Organizations are being considered shareholders but with different shares percentage based on their real cost contribution. In any case, this is to be decided by the countries. At the following Organization chart we do not indicate countries contribution but only jobs descriptions / positions.

Figure 82. Organisation Chart of Corridor Management Mechanism



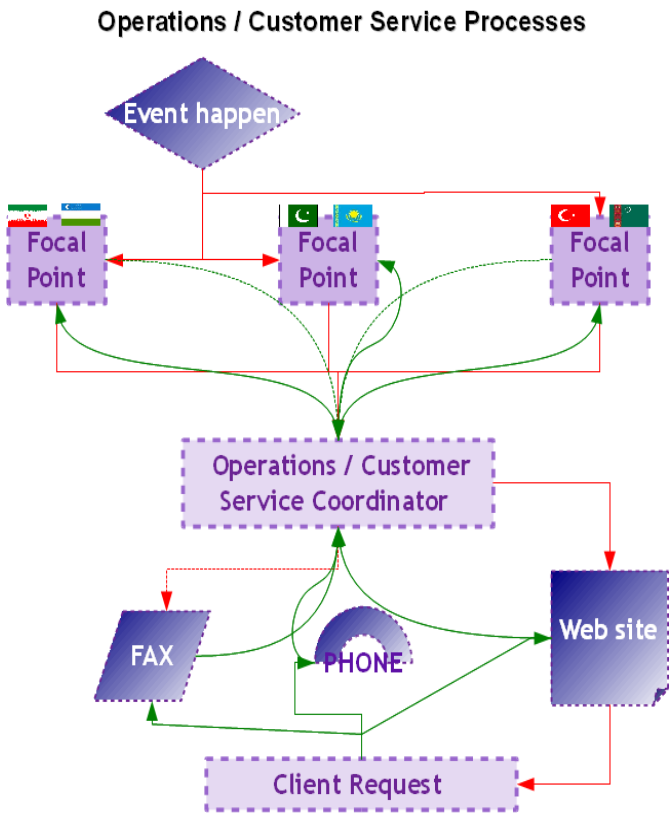
Source: Author's Analysis

- The Corridors Coordination Office (CCO) should have headquarters. Somewhere in these countries to establish its operations.
- The **focal points** for each main coordinator should be identified and determined by the State rail Organizations and they should have part time occupation. Should be incumbents with authorities to their organizations and specialized to the subjects needed (Business Development / Marketing – Finance – Operations / Customer Service). These incumbents do not have to relocate to the Headquarters of the CCO. Their main responsibilities should be:
    - Participate in coordination meetings with other focal points and the coordinator of their subject,
    - Provide advises, experience and his/her organizations practices for the issues in subject,
    - Coordinates his/her subordinates as to provide the necessary information to the coordinator
- The **Corridor Coordinator** and Rail Service Manager is a part time job. Should be an experienced incumbent in rail and corridor management issues with international exposure. Among his tasks should be:
    - provide guidelines to the three coordinators as to ensure smooth operations of the service and focus on the decisions taken by the countries,
    - participates as focal point of CCO at the ECO meetings and other international meetings presenting the corridor and its services,
    - acts as manager of the CCO operations therefore should deal with important – strategic operational issues of the corridor but not the daily ones
- The **Business Development Coordinator** is a full time job and deals with all the issues that has to do with Marketing, promotion, business synergies and cooperation of the services of the corridor,
    - cooperates with the focal points of its department as to ensure the alignment of all the countries at the decided strategies and get their consensus concerning business development activities,
    - manages the budget of its department,
    - implements all the decided promotion and marketing activities,
    - deals with all the daily issues of its department
- The F**inance Coordinator** is a full time job and deals with all the financial issues,
    - prepares monthly reports with revenues and expenses of the corridor,
    - revises, updates or changes in cooperation with the focal points of its department the tariffs structure for the different services of the corridor,
    - deals with the invoicing of the clients,

- deals with the cashing from the clients,
- deals with the signing of contracts for the different services of the corridor,
- cooperates with the legal adviser – outsourced expert – for the formulation of different contracts and other legal issues,
- he/she is responsible for the overall economics of Corridor's management.

- The **Operations / Customer Service Coordinator** is a full time job and deals with all the operations / customer service issues of the corridor services,
  - cooperates with the focal points of its department as to answer clients requirements, claims, complaints or other requests,
  - accepts clients request and response to them,
  - deals with all the daily operational issues of corridor's management,
  - customer service and operations will be facilitated by internet based track and trace and administration system.

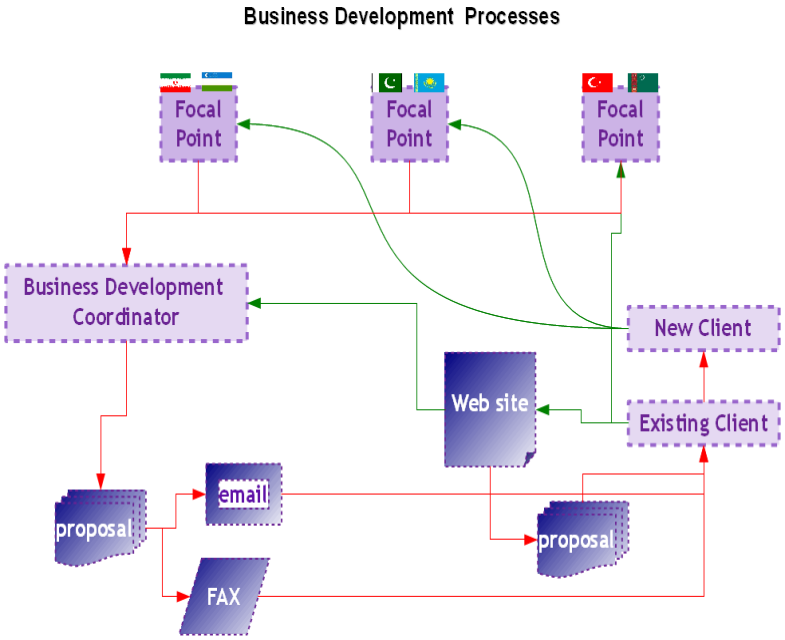
Figure 83. Operational / Customer Service processes



- Every event that happens (delays, broken wagon, sand storm etc) should immediately be reported to Operations coordinator;
  - for customers service reasons,
  - for service improvement reasons,
  - for time reduction etc
  - the way of communication should be established;
- Clients should have ways to communicate with the service coordinator (web, fax, telephone),
  - clients requests for cargoes will be reported to focal points as answers to be received,
  - clients requests for service improvement will be discussed at monthly department meetings,
  - Operations coordinator should have the possibility through internet or other means, to inform the customers

Source: Author's Analysis

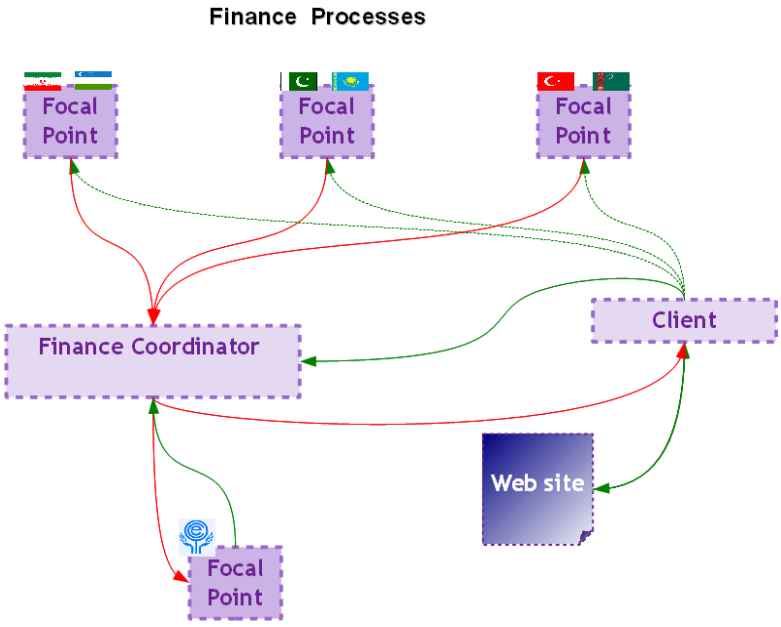
Figure 84. Business Development processes



Source: Author's Analysis

- The web site of the service should operate as an integrated proposal mechanism;
- clients should have the possibility searching for tariffs and create their own proposal and also booking, the site should absorb the 80% of the new proposals and facilitate like this the workload of the Business development coordinator,
- Important clients / big contracts that get in contact with the focal points should bring them in contact with the BD Coordinator. He should deliver the proposal to the client in cooperation all the time with the focal points,
- focal points and BD coordinator should search and visit together large clients;

Figure 85. Finance Processes



Source: Author's Analysis

- The finance coordinator invoices the clients. This implies that the CCO has a legal entity. But other options can be evaluated, at least for the beginning.
- The clients should have the possibility to check their account and pay at the web site of the service.
- When the FD has problems finding a client or clients delayed their payments FD should ask focal points assistance.
- Finance coordinator has continuous cooperation with ECO secretariat. His monthly economic reviews of the rail service will approve or not the end of the incubation period and the start of a new legal entity.

CHAPTER 8. Conclusions and recommendations for the future

This chapter will finalised after the final approval of the report.

Advantages of the Block trains:

- Saving in the personnel: 14 %
- Saving in fuel consumption at 1000 ton/km4 %
- Increase in the freight transport 37 %
- Increase in the incomes of the freight transport 110 %
- Increase in the utilizationof the locomotives
- 20 %
- Increase in the wagon performance 26 %