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Procedia Engineering 182 (2017) 497 – 503

Procedia Engineering

www.elsevier.com/locate/procedia

7th International Conference on Engineering, Project, and Production Management

Introduction to the STEEPVL Analysis of the New Silk Road Initiative

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Abstract

The Chinese New Silk Road (NSR) initiative seems to be the greatest logistics endeavor of our times. It will boost infrastructure investments and create many new relations. The primary aim of the study is to determine the factors influencing the development of the rail part of the NSR. The methodology of the paper includes a desk research about the NSR potential and identification of STEEPVL analysis factors shaping the NSR. The factors are grouped into seven dimensions: social, technological, economic, ecological, and political, and related to values and legal aspects. They constitute factors that can either enhance, accelerate or hamper the success of the NSR. The outcomes of the study comprise the introduction to the complete STEEPVL analysis.

Peer-review under responsibility of the organizing committee of EPPM2016

Keywords: New Silk Road; STEEPVL analysis; supply chains; transport corridor

1. Introduction

The New Silk Road initiative refers to the ancient trade route linking China with Europe and the Near East. It was introduced by President of China Xi Jinping on the 7th September 2013 in Kazakhstan and since that time it has become a signature policy of Beijing [1]. He proposed Silk Road Economic Belt which comprises political, economic, trade and cultural elements which require collaboration in terms of policy coordination, road connectivity, unimpeded trade, money circulation and mutual understanding between different parties [2]. All these mean new opportunities for cooperation between stakeholders on the route.

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Peer-review under responsibility of the organizing committee of EPPM2016
doi:10.1016/j.proeng.2017.03.143

The NSR initiative seems to be the greatest logistic endeavor of our times. It encompasses rail and sea connection of Asia with Europe. If successfully implemented, the project is going to significantly change possibilities of goods transportation on the route China-Europe. It will boost infrastructure investments and create many new political, economic and social relations.

2. The concepts of route development

The New Silk Road is embodied into a broader concept of One Belt, One Road (OBOR). The OBOR has three pillars: first – spreading economic development through providing new trade opportunities and by the means of infrastructure investments. The second pillar involves creating new relations between China and countries on the route. The third aspect is bringing attention to Asia [3−4].

The NSR has no fixed route and no timetable of realization. The land part (Belt) should rather be perceived as a network of corridors complimenting each other. The maritime route is oddly named Road. The route of the NSR is at present a pivotal element of economic diplomacy. All the countries willing to participate in this breakthrough initiative make efforts to participate in the foreseeable benefits form the new Eurasian corridor. There are however three main alternative corridors along the NSR [5]. The firs proposal is the Northern Corridor. It involves the Russian Trans-Siberian Railway line, and then it goes through the Russia, Belarus and Poland serving as a gate to Europe. This corridor is currently operational. The advantage of this corridor is that it crosses through the least number of countries and this means the least number of border crossings, among the three alternatives. The second idea is the Middle Corridor. It crosses Kazakhstan to reach the Kazakh Caspian port of Aktau. By sea it reaches the Azeri port of Alat. Then it passes through the South Caucasus and reaches Europe through Turkey. The main disadvantage of this corridor is the intermodality at the Caspian crossing and the frozen conflicts in the Caucasus region. The third proposal is the Southern Corridor. It starts from Kazakhstan, passes through Turkmenistan or Kyrgyzstan and Tajikistan to Iran. Then it reaches Turkey and then finally connects with Europe. This corridor is problematic since it has a high number of border crossings and it is politically instable.

There are also other concepts of the NSR development [2]. The first model is “development in stages”. It involves development in stages starting from the countries in Chinese neighborhood and Central Asia. It fits Chinese 12th Five-Year Plan (2011-2015) to open westwards. The stage of deepening cooperation with neighborhood countries proceeds the NSR expansion to Europe.

The second model involves “Corridor development” and it involves the Central Asian corridor as an initial stage for the NSR development [2]. The efforts should be made to create the Eurasian Silk Road logistic corridor with all the necessary infrastructure such as: logistic centers, dry ports, airports, customs clearance and complimentary services such as warehousing. Also establishing incentives encouraging investments along the corridor are of a vital importance.

The third model involves “Equal development between the East and the West” [2]. This concept involves development of economic and trade cooperation between China and both two ends: European and Asian. On the European end China is eager to establish investment and free trade areas (such agreements were signed for example with Switzerland and Iceland). The Equal development between East and West places an important role to central and Eastern European countries. These countries will serve as a gate for China to Europe.

Among these the alternatives of the route the Northern Corridor seems to be most viable. However the success of the NSR implementation depends of the readiness of infrastructure and advancement of logistics operations of the countries on the route. In the Fig. 1 logistics performance index based on World Bank data for the year 2014 of Germany, Poland, Ukraine, Russian Federation, Belarus and China is presented. It reflects the level of logistics in these countries by presenting scores of the following indicators: logistic performance index (LPI), level of customs service, infrastructure, international shipments, logistic competence, tracking&tracing and timeliness. The LPI is based on a worldwide survey of operators on the ground (global freight forwarders and express carriers), providing feedback on the logistics “friendliness” of the countries in which they operate and those with which they trade [6].

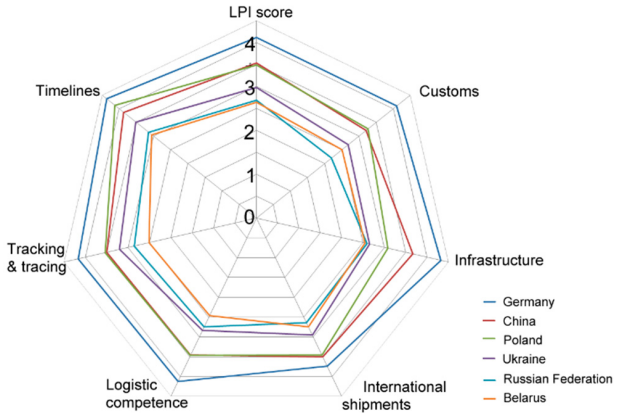

Fig. 1. Logistics performance of the selected countries on the NSR (data for the year 2014).
Source: Authors elaboration on the basis of World Bank data [6].

According to the presented outcomes of the analysis Germany can be perceived as the leader of logistics readiness for the NSR challenges. Poland and China have quite similar scores, which can be substantiated by the fact that China although with greater potential then Poland is a very diversified country which makes its score similar to Poland. Ukraine and Russian Federation are on a similar level and Belarus has the lowest score.

The final route of the NSR will depend upon the Chinese strategic plan but also it will be the result of the efforts of the countries that are potential beneficiaries of the route. It is up to their governments, political and economic forces and other stakeholders able to create consciousness of the NSR concept importance.

3. NSR strategic analysis

3.1. NSR stakeholders

The New Silk Road is an initiative raising great attention of wide spectrum of stakeholders. These stakeholders can be grouped in eight fields of activity (Fig. 2) and they will participate in the NSR through:

- Corridor creation and providing regulations on different phases of its development (NSR creation and regulation)
- Using the NSR connection (Infrastructure use, Logistics operations)
- Obtaining business profits from sending goods by the means of the new transport corridor (Shippers)
- Being affected by the NSR creation indirectly through for example spillover effects (Entrepreneurs making profits from spillover effect).

The stakeholders map elaborated by the authors includes stakeholders in eight fields. The first field is the NSR creation and regulation. It involves stakeholders from governments, international organisations, financial institutions and higher education institutions providing qualified staff for the benefit of the NSR. In the area of infrastructure development again national and international governing bodies as well as rail network owners, port authorities, railway companies and shipping lines are involved. The next area taken into account is infrastructure ownership which embraces rail network owners, port authorities, railway companies and shipping lines. The next category of stakeholders includes those who will use the infrastructure of the NSR. Under logistics operators category shipping lines, intermodal operators or forwarders and logistic service providers are included. Another category – shippers – comprises automotive, producers of consumer electronic, food, high-technology products, natural resources providers, intermodal operators or forwarders and logistic service providers. The influential group of stakeholders covers national and international control and supervision units with border clearance, customs office, sanitary inspection, border guard and other controlling units. The last but not least group includes those who will make profits from spillover effect.

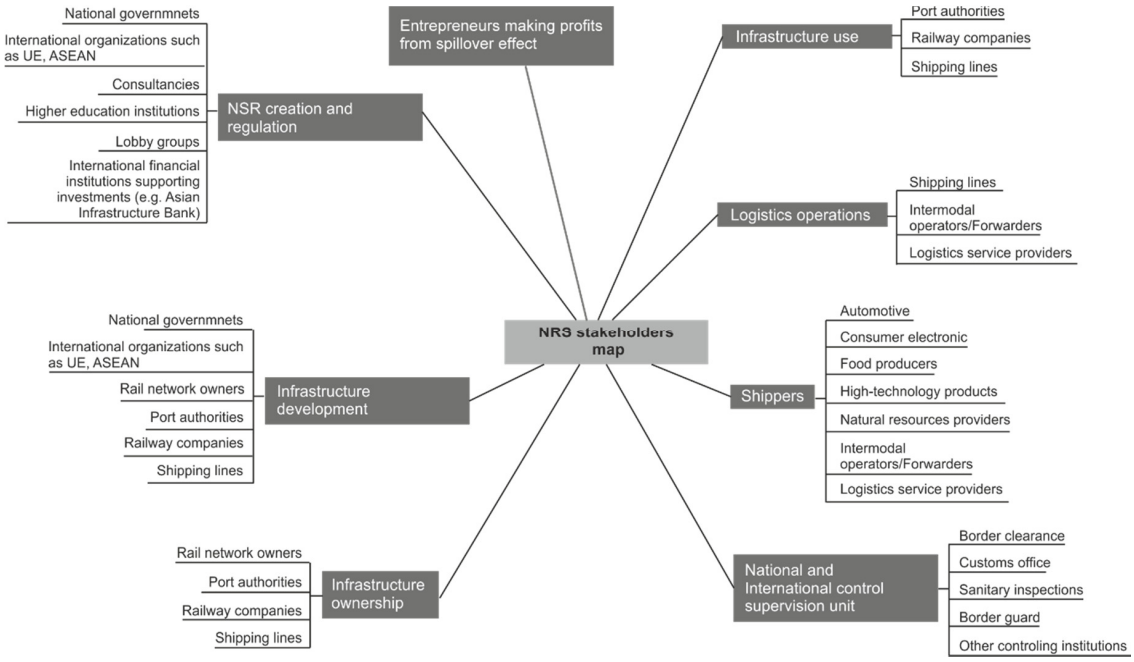

Fig. 2. The NSR stakeholders map.
Source: Authors elaboration on the basis of [7].

3.2. The proposal of STEEPVL factors

In order to identify factors determining the NSR initiative success the STEEPVL methodology has been applied. It can be perceived as an extension of PEST and STEEPV analyses. The analysis was introduced by Johnson Research Associates (JRA) in the 70s [8]. STEEPVL as a multidimensional method helps to identify the potential driving forces of the analysed research field which could be neglected in traditional PEST analysis [9−11]. Apart from defining the driving forces shaping the scenarios of development, the STEEPVL analysis is applied to identification of unprecedented events the so called wild cards [12] or to enhance SWOT analysis outcomes [13]. The factors are grouped in seven dimensions: social, technological, economic, ecological, political and related to values and legal aspects (Fig. 3). The acronym of these dimensions is STEEPVL. The STEEPVL factors can enhance, accelerate or hamper the success of the NSR. The factors can be defined as follows [14]:

- **Social** factors include culture, health consciousness, population rate, age distribution and importance of safety. Trends in social factors affect the demand for products and how enterprises operate
- **Technological** factors cover technological aspects such as R&D activity, technology incentives and the rate of technological change. They can determine barriers to entry, minimum efficient production level and influence outsourcing decisions. Technological shifts may affect costs, quality, and lead to innovation
- **Economic** factors can relate to economic growth, interest rates or exchange rates. They have major impact on how enterprises operate and make decisions
- **Environmental** factors cover ecological and environmental aspects, which may influence enterprises. Growing awareness of the potential impact on environment affects business activity, technologies involved and final products
- **Political** factors mean to what degree the government intervenes in the economy. They include areas such as tax policy, labour law, trade restrictions and political stability
- **Legal** factors include different national and international regulations on different levels of government and mechanisms to monitor and ensure compliance with these laws.

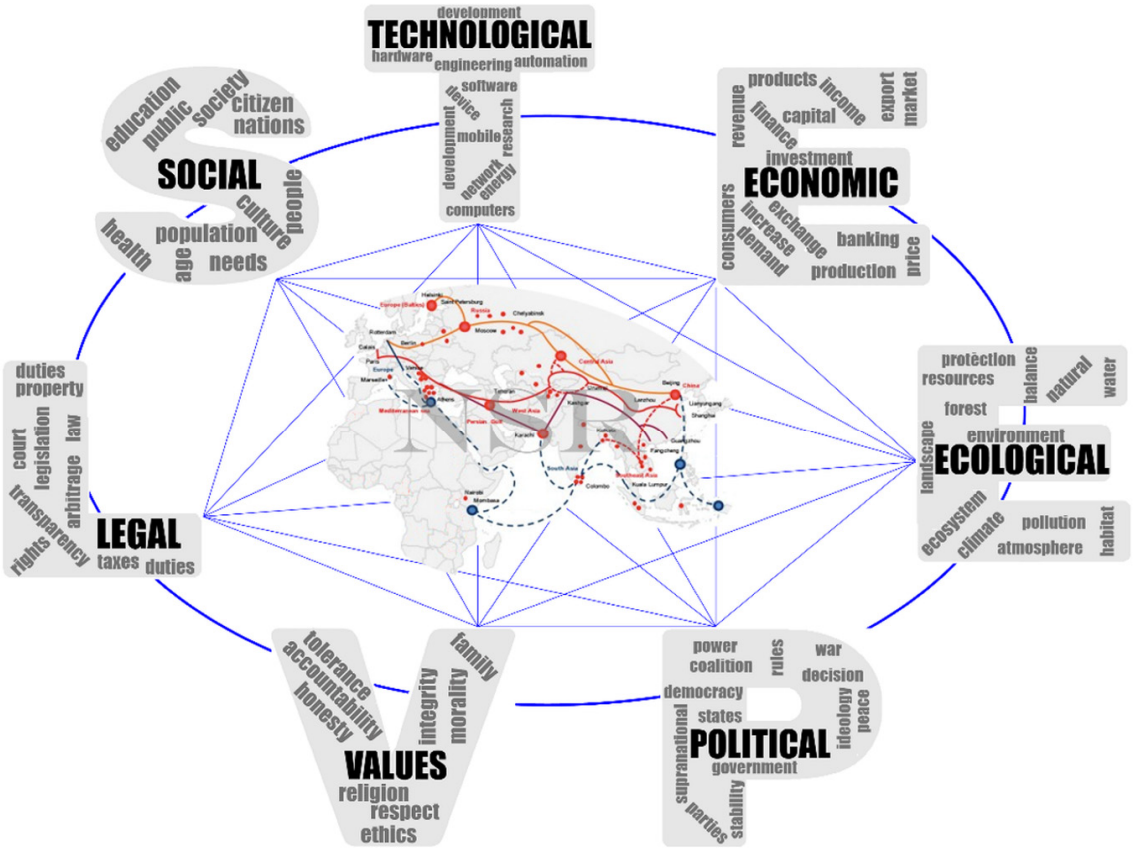

Fig. 3. The concept of STEEPVL analysis of NSR initiative.
Source: Authors elaboration, [15].

Value-based factors concern human ethics, morals and beliefs. Values are about what is most important in life, how things should be or people should behave. The values should be analyses in terms of qualities such as honesty or openness.

Below the STEEPVL factors influencing the NSR identified by the authors of this study and the Chinese, Ukrainian and Polish students of logistics participating in the Eurasian Summer School of Logistics organized by the Faculty of Management, Bialystok University of Technology 4-23 July 2016 are enumerated (in alphabetic order):

(S) Social factors
- Openness of the societies on the route towards international cooperation
- Perception of other nations
- Qualifications of human resources for the NSR
- Readiness for international competition
- Social acceptance of the NSR.

(T) Technological factors
- Accessibility to new energy sources
- Availability of new technologies (in road and railway rout construction)
- Differentiation between technological standards for transportation infrastructure
- Level of innovation technological solutions.

(E) Economic factors
- Availability of financial resources
- Differentiation between economic zones
- Global development of economy
- Potential of the Eurasia trade exchange
- RMB to Euro exchange rate.

(E) Ecological factors
- Activity of national and international ecological organizations
- Adverse impact of NSR to the environment of participating countries
- Intensity of transportation of danger goods
- Legal protection of environment and natural resources
- Using the newest green technologies.

(P) Political factors
- Consistency of development strategies of participating countries
- Global stability of international relations
- Political stability in participating countries
- Level of state interventionism/centralization
- Political relations between participating countries.

(V) Values
- Differentiation of religious values in participating countries
- Ethics of work
- Differentiation between the level of acceptance of corruption
- Openness to other cultures
- Thinking about the future.

(L) Legal factors
- Harmonisation of legal regulations
- Legal limitations of international trade
- Protection of ownership
- Recognition of international institutions of arbitrations
- Transparency and stability of tax law.

Although the indicated factors do not exhaust the variety of aspects which can influence the NSR initiative, it may contribute to identifying the driving forces of its success and potential inhibitors. The outcomes of the study comprise introduction to the complete STEEPVL analysis which involves verification of the factors by deliberately chosen experts, characteristics of the factors, assessment of their importance and predictability as well as development of scenarios of the New Silk Road development [16].

4. Conclusion

The introduction of the NSR by China aims at promotion of economic cooperation and development by reinforcing infrastructure construction. It constitutes a contribution of the Chinese government to the international economic policy sphere [17]. The NSR should be perceived as a chance for economic boost and significant infrastructure development, probably the greatest logistic in present times. The new Eurasian corridor will involve many stakeholders on different phases of the corridor development: its creation, regulation and operation. There will be many actors participating in trade exchange and goods forwarding as well as stakeholders affected by NSR indirectly, for instance by spillover effects. All of them will take shape this endeavor through social, technological, economic, ecological, political factors and aspects related to values and legal regulations. The scope of potential influence of the NSR on world economy, transportation and social living substantiates further research in a frame of complete STEEPVL analysis.

Acknowledgements

The research was conducted within S/WZ/1/2014 project and was financed from Ministry of Science and Higher Education funds.

Ministry of Science and Higher Education
Republic of Poland

7th International Conference on Engineering, Project, and Production Management (EPPM2016) was financed in the framework of the contract no. 712/P-DUN/2016 by the Ministry of Science and Higher Education from the funds earmarked for the public understanding of science initiatives.

7th International Conference on Engineering, Project, and Production Management (EPPM2016) finansowana w ramach umowy 712/P-DUN/2016 ze środków Ministra Nauki i Szkolnictwa Wyższego przeznaczonych na działalność upowszechniającą naukę.

ARiMR

7th International Conference on Engineering, Project, and Production Management (EPPM2016) was co-organised by the Agency for Restructuring and Modernisation of Agriculture (Poland).

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