

# Polishing talents for the New Silk Road initiative

Lech Dzienis<sup>1</sup>, Katarzyna Kuźmicz<sup>1</sup>, Joanicjusz Nazarko<sup>1</sup>, Hao Wang<sup>2</sup>

(1. *Bialystok University of Technology, Poland;*

2. *Zhejiang University Ningbo Institute of Technology, China)*

## Abstract

The initiative to link Asia with Europe through the New Silk Road is a big challenge in terms of logistics, investments and cooperation between people from different countries participating in this undertaking. It also comprises a platform for cooperation between Chinese and Polish higher education institutions. In the paper the framework and examples of collaboration between the Faculty of Management of Bialystok University of Technology with the School of Management of Zhejiang University Ningbo Institute of Technology is presented. The two institutions aim at educating human resources and polishing talents for the support of the New Silk Road initiative. The cyclical summer school in logistics and research projects of the joint International China and Central-Eastern-Europe Institute of Logistics and Service Science bring together students and researches for the benefit of future development of the New Silk Road.

**Key words:** The New Silk Road, China and Eastern-Europe Institute of Logistics and Service Science, logistics, internationalisation of higher education, Bialystok University of Technology, Zhejiang University Ningbo Institute of Technology

## Introduction

The Chinese initiative of One Belt One Road commonly referred to as the New Silk Road (NSR) seems to be one of the most important undertakings of present times in terms of logistics, infrastructure investments and creating platform for international relations. It encompasses Silk Road Economic Belt – the landbridge between Asia and Europe – and 21<sup>st</sup> Century Maritime Silk Road – which mean the sea route from China to Europe. The NSR will provide new opportunities to forward goods by rail on the route China-Europe-China cheaper than by plane and faster than by sea. To make the route fully operational it will be a great challenge since the route is going to involve about 65 countries, 4.4 billion people and 63% of global population (Centre for Research and Globalisation 2015). One of the most important challenges will be raising funds and organising infrastructure development and dealing with discrepancies in infrastructure systems (for instance three different railway systems on the route: Chinese, Post-Soviet and European) as well as providing qualified staff not only with expertise in logistics but also possessing good interpersonal skills in international cooperation and having basic knowledge about countries participating in the NSR. This important issue is in responsibility of higher education institutions shaping talents for the benefit of the NSR.

### 1. Cooperation between Bialystok University of Technology and Chinese universities

Bialystok University of Technology (BUT) is a higher education institution with over 60 years tradition in the North East of Poland. One of the core elements of the strategy of development of BUT is its internationalisation both in the field of scientific research and student and staff mobility. University internationalisation is a source of its accelerated development through exchange of knowledge and experience. In recent years the international cooperation of BUT was focused on Asia and China in particular. The internationalisation of the logistic programme at the Faculty of Management of BUT within the cooperation with the School of Management of ZJUNIT in China, described later as a case study, is an embodiment of the idea of internationalisation, because it enables global conception of logistics, which is crucial in initiatives like the NSR.

University internationalisation prepares students to function in intercultural contexts. Studies suggest (Brown 2009, Liang 2012) that for international students, increased intercultural contact is positively correlated with language capability and increased satisfaction with the student experience. For domestic students on the other hand, a multicultural experience helps them develop cross-cultural competence that leads to personal growth and improved career prospects.

In the last few years BUT undertook intensive cooperation with Chinese Higher Education Institutions (HEIs). BUT currently has signed cooperation agreements with 13 HEIs from China. In the frame of the signed agreements mostly exchange of students and staff among the cooperating institutions was carried out. The undertakings presented below are examples of BUT activity in this field.

BUT has signed cooperation agreement with Tianjin University of Technology (TUT) in 2015. Within this framework both sides invite students for one semester or one year study. BUT hosted several students from TUT and representatives of the universities meet regularly. In April 2016 an official delegation of 6 representatives with a vice rector from TUT visited BUT in order to discuss new directions of cooperation.

Within the framework of cooperation with Tianjin Chengjian University (TCU), BUT invited representatives of TCU to a contests "Raising the potential of universities as a factor in the development of knowledge-based economy". Two professors from TCU worked as a visiting professors at the Faculty of Management and at the Faculty of Civil Engineering and Environmental Engineering. Two professors of BUT worked at TCU. BUT hosted the delegation of TCU twice, once 6 representatives with a rector and for the second time with a vice-rector (2016). Rector of BUT visited TCU and as a result double degree agreements were signed.

The cooperation with Tianjin Normal University (TNU) started in 2014 and relates to student exchange. An important aspect of the cooperation are joint efforts in the establishment of a Confucius Institute. BUT hosted the delegation with a rector of TNU in 2014 where details concerning the establishment of this unique centre of Chinese culture and language enabling exchange of Polish and Chinese culture, education and business undertakings were discussed. Another aspect of this cooperation is the employment by BUT a Mandarin language teacher from TNU to work in a high school of BUT and to teach BUT students and staff members starting from September 2016.

In September 2014 the rector of BUT, Prof. Lech Dzienis, was a member of Polish delegation with a Polish Deputy Ministry of Science and Higher Education. The delegation was invited by the Ministry for Science and Technology in China and Polish Embassy in Beijing. During this visit rectors and vice-rectors from 29 countries a document about the establishment of China-CEE Higher Education Consortium. This event was named "The Second China – Central and Eastern European Countries Education Policy Dialogue".

In October 2015 representatives of BUT with the rector Prof. Lech Dzienis participated in „China Education Expo 2015” in Beijing, Chengdu and Kanton. BUT presented its educational offer at the fairs and visited three universities: Tianjin Chengjian University, Tianjin University of Technology and Tianjin Normal University.

The intensive activity of BUT aiming at building close relations with Chinese partners has a deeper context in the light of the New Silk Road initiative. The NSR in order to be successful requires long lasting relationships between partners which involves personal engagement of people.

## **2. Cooperation between the Faculty of Management of Bialystok University of Technology with the School of Management of Zhejiang University Ningbo Institute of Technology**

Cooperation of BUT with Zhejiang University Ningbo Institute of Technology (ZJUNIT), started in 2014 when the Dean of the Faculty of Management of BUT visited China-Central/Eastern Europe Education Conference. The immediate outcomes of this visit were the establishment of a Summer School in Logistics, which has been carried out yearly since that time and signing a double degree agreement. In 2014 Prof. Hao Wang from the School of Management of ZJUNIT worked as a visiting professor in the framework of the "Raising the potential of universities as a factor in the development of knowledge-based economy" project at the Faculty of Management.

The next significant event in developing the mutual relations was granting Professor Joanicjusz Nazarko the title of Honorary Professor of ZJUNIT in June 2015.

The vital aspect of the cooperation between FM BUT and ZJUNIT is the establishment of the joint International Chinese and Central-Eastern Europe Institute of Logistics and Service Science. The primary aims of this Institute cover:

- exchange of students and staff,

- organising summer schools,
- joint development of teaching curricula,
- organising scientific conferences and seminars,
- joint application for scientific and educational grants,
- developing and publishing joint research outcomes.

The exchange of students has already started and one student from the Faculty of Management of BUT was staying at the School of Management of ZJUNIT studying logistics and participating in research projects under supervision of Prof. Hao Wang. Currently he started to work in Chinese logistic enterprise offering rail transportation on the route China-Europe-China. The great scientific achievements of Professor Hao Wang, his extraordinary experience in transferring knowledge into business practice, as well as his personal engagement in the development of the cooperation between ZJUNIT and BUT was recognised by granting Professor Hao Wang the title of Honorary Professor of BUT. Professor Hao Wang was accompanied by a five persons delegation from ZJUNIT together with Vice-President of ZJUNIT (Fig. 1).



Fig. 1. Professor Hao Wang from ZJUNIT Honorary Professor of BUT

In cooperation between Chinese and Polish universities engagement of the cities is also important. Currently the actions has been taken to sign a sister city agreement between Ningbo and Bialystok.

### 3. Summer schools in logistic for the benefit of the NSR – case study

The Summer School in Logistics is a common undertaking of the Faculty of Management of BUT and the School of Management of ZJUNIT which aims to educate students in logistics and to teach them about the Polish and Chinese economy. Another important aspect of this project is to enable students to learn about the culture of the two nations and offer them an opportunity to make relations between Polish and Chinese students and academic teachers. Each year a working programme to the agreement of cooperation is developed, in which details concerning organisation of a summer school is agreed. The summer schools are organised on a basis of a mutual engagement rule. The hosting institution provides accommodation, classes in logistics and cultural activities.

In 2015 a group of 5 students with a tutor from ZJUNIT came to visit the Faculty of Management of BUT for three weeks. In August 2015 a group of 30 students with a tutor from BUT visited the School of Management of ZJUNIT. The principal aim of the 2015 Summer School at the Faculty of Management BUT was: educating in the field of future oriented logistics management and the main theme of the 2015 Summer School at the School of Management of ZJUNIT was Logistics Network Modelling and Practical Training.

During the summer schools students were:

- a) educated through exchange of knowledge and experience in the field of future oriented logistics management following the principals of logistics management and methods used for supporting decision making process in managing logistics companies;
- b) be introduced the basic concepts of logistics system and be provided an overview of classifications, models, solution techniques and applications of supply chain network design, as well as practical training of the most common operational skills of logistics system;
- c) provided with the opportunity to visit modern logistics companies;
- d) acknowledged with the culture of the hosting countries;
- e) they developed skills of international interpersonal contacts;
- f) they exchanged experience in the area of academic education system and practice.

The summer school at the Faculty of Management of BUT included the following courses: Supply Chain Performance Management, Production Logistics Plant Simulation, Forecasting in Logistics Management, Quality management in logistics services, Benchmarking in logistics, Productivity Analysis in logistics management, Foresight in Logistics Management. Apart from academic courses the students visited logistic enterprises, participated in meeting with local governors, did some sightseeing in city museums and Opera, took part in culinary workshops.

During the summer school at School of Management of ZJUNIT students were encountered with the following courses: Introduction to modern logistics system, Introduction to modern logistics system, Basic skills of logistics modelling, Routing Problem and its application in logistics system, Location Problem and its application in logistics system, Large Scale Microscopic Simulation tool and its application in intelligent transportation system, Techniques and Practical skills of Large Scale Microscopic Simulation Software, Stock Uploading of Automatic Storage and Retrieving System, Daily Operation of Forklift Skills, Daily Operation of Digital Picking System / Computer Aided Picking System. In the afternoons students learned about the Chinese culture of tea making, paper cutting, calligraphy, festival tradition and silk. Apart from the classes students visited Chinese enterprises.

In 2016 in June, 14 students with a tutor from ZJUNIT participated in a summer school in Białystok and 20 students from BUT with a tutor take part in a summer school in Ningbo in August. The summer school received more international character because 5 students from Poltava Kondratiuk National Technical University in Ukraine and 2 students from the Faculty of Management of BUT also took part in it.

In 2016 the principal aim of the two summer schools at the Faculty of Management of BUT and at the School of Management of ZJUNIT was the analysis of the potential of the New Silk Road initiative. During the summer schools students were:

- a) educated in the field of New Silk Road concept as a new Eurasian transport corridor, especially with regard to conditions required for transport corridors and logistic infrastructure; they gained knowledge about Polish and European economy in context of the NSR and about trade exchange between Europe and China; were taught about STEEPVL analysis and applied the newly possessed knowledge to the assessment of the NSR potential; they also developed scenarios of NSR development;
- b) provided with the opportunity to visit modern logistics companies;
- c) acknowledged with the culture of the hosting countries (Poland and Peoples' Republic of China);
- d) they developed skills of international interpersonal contacts;
- e) they participated in the exchange experience in the area of academic education system and practice.

The summer school at the Faculty of Management of BUT became a great occasion to analyse the potential of the probably one of the greatest logistic endeavours of present times.

As an introduction to the NSR theme students were acquainted with some basic knowledge concerning economy of European Union and Poland, as well as issues related to trade exchange between EU, Poland, China and countries on the route. Later on students from China presented the idea of the NSR from the perspective of their country. They were obliged to prepare the presentations as their homework as the preparation for the summer school. The lecturer from the Faculty of Management of BUT complimented their performance with a presentation on the NSR from the European and Polish perspective in particular.

The next step was introducing the students with STEEPVL methodology. It is a method of strategic

management and it involves identification of factors determining a certain issue of high importance in the future. The method can be perceived as an extended PEST and STEEPV analyses and as a deeper analysis than SWOT. 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 (Loveridge 2002). STEEPVL as a multidimensional method helps to identify the potential driving forces of the analysed research field. 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 (Nazarko 2013) or to enhance SWOT analysis outcomes (Mendonca 2004). The factors are grouped in seven dimensions: social, technological, economic, ecological, political and related to values and legal aspects. The acronym of these dimensions is STEEPVL (Fig. 2).

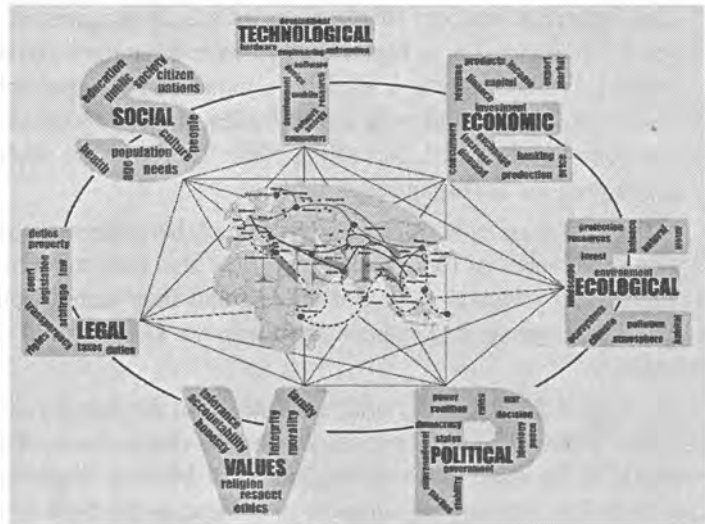


Fig. 2. The concept of STEEPVL analysis of NSR initiative

Source: J. Nazarko, K. A. Kuźmicz, *Introduction to STEEPVL analysis of the New Silk Road initiative*, Procedia Engineering, 2016 to be published. Source of the map: <http://www.chinainvestmentresearch.org/press/massive-chinese-lending-directed-to-silk-road/>

According to the method students were asked to brainstorm for factors determining the NSR in those seven fields. They were divided into groups consisted of students of different nationality. After the individual work they had to present their ideas to their small groups and through the brain storm they were asked to develop 5 factors in the fields dedicated to their group. Finally the groupchairmen presented the outcomes of their work to the whole group (Fig. 3).



Fig. 3. STEEPVL factors identification – summer school in logistics at the Faculty of Management of BUT 2016

The next step in the analysis was assessment of the relevance of the factors which each student made individually on a computer. The assessment was done on a 1-5 scale (one little importance, 5- high importance). After that they assessed the predictability of the factors. Thanks to computer operations the assessment of predictability was reversed to uncertainty evaluation (reversing the scale 6-1). The following stage was structural analysis, usage of MicMacSoftware and identification of two key factors which are relevant and uncertain which can be perceived as driving forces of the NSR. These two factors indicated the axes of the four possible scenarios of the NSR development. Participating students were supposed to develop the four scenarios.

The whole analysis became the occasion to many fruitful discussions about the importance of the NSR



both in terms of financial and infrastructural outcomes but also in terms of bring people from the countries participating in this undertaking together. The outcomes of the study were of course not representative but they enabled the students to understand the various conditions connected with the development of the NSR and the potential role Poland is going to play in this initiative.

An important element of the summer school programme were visits in the successful enterprises in Białystok but also a visit in Malaszewicze where the intermodal centre of PKP Cargo (Polish railway company) is located as well as where a logistic terminal of Adampol company – one of the most important logistic companies in Poland (but with a worldwide range) is located. Malaszewicze are expected to become the main logistic hub in Polish part of the NSR. Therefore the students had a good opportunity to see how such logistic operations are organised in practice.

The aspect of cultural exchange cannot be underestimated. Students took part in classes in Polish language and basics of Polish culture but they also tried to learn languages of other participants (Chinese and Ukrainian), they visited places of culture and they tasted Polish cuisine. The group of Chinese students visited also ports and container terminals in Gdansk and Gdynia, as well as Gdansk University of Technology.

In August 2016 a group of 20 students from the Faculty of Management of BUT with a tutor visited the School of Management of ZJUNIT. During the summer school they participated in the following courses: An Overview of Opportunities and Challenges of Modern Logistics – Analysis of the potential of the New Silk Road initiative, Intermodal transport in context of the New Silk Road, Key concepts and skills of logistics modelling, Routing Problem and its application in logistics system, Location Problem and its application in logistics system, Large Scale Microscopic Simulation tool and its application in intelligent transportation system, Techniques and Practical skills of Large Scale Microscopic Simulation Software, Stock Uploading of Automatic Storage and Retrieving System, Daily Operation of Digital Picking System / Computer Aided Picking System and Daily Operation of Forklift Skills. Apart from academic courses they had a great opportunity to learn about Chinese history and traditional Cultures, paper cutting, practice calligraphy, tea making, taste Chinese cuisine and sightsee most interesting spots like Shanghai, Beijing and Hangzhou.

## Conclusions

The New Silk Road initiative or broadly named *One Belt, One Road* (OBOR) comprising logistic corridors linking China with Europe seems to be a breakthrough endeavour bringing together societies on the route. One of the most important pillars of the NSR are: spreading economic development through providing new trade opportunities and by the means of infrastructure investments and creating new relations between China and countries on the route (Lo 2015, Nazarko et al 2016). Realisation of this challenging project requires professionals not only with knowledge and expertise in the field but also with cultural awareness and open mind. The presented cooperation of the Faculty of Management of BUT and the School of Management of ZJUNIT within the framework of the joint International China and Central-Eastern Europe Institute of Logistics and Service Science exemplifies the idea of creating staff capable of realisation of international or even global projects. The possibility to study, discuss relevant issues with academic staff and learning about the culture of the hosting country is very valuable for the future professional career. Polishing talents for the benefit of the NSR can be perceived as one of the conditions of the success of the whole undertaking.

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