



How Technology Can Unlock the Growth Potential along the New Silk Road

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About the Author of this Issue

Wolfgang Lehmacher is Head of Supply Chain and Transport Industries at The World Economic Forum. He is a global executive, management consultant, entrepreneur and author – expert in the field of supply chain, transportation and logistics. During his career he has been heading and supporting country, regional and global innovation, expansion and investment strategies, serving Fortune 500 and other leading companies, as well as startups, social enterprises and not-for-profit organisations. He is Member of the Board of Governors, Universal Business School, India's first green business school, Karjat, and member of the Advisory Board of aidha, Singapore, the world's first micro-business school for entrepreneurs at the base of the pyramid.

1980, Lehmacher started his professional career with the German Red Cross, subsequently gaining experience with leading international supply chain solutions providers, such as Kuehne & Nagel. He has held senior management positions with TNT from 1991 to 1999, including Country General Manager Switzerland and Head of the Eastern European and Eastern Mediterranean Regions, and with French Groupe La Poste from 1999 to



2010, including, President and Chief Executive Officer, GeoPost Intercontinental and Member of the Board of GeoPost, the express parcel holding of Groupe La Poste. He was partner and managing director (China and India) at the global strategy boutique CVA from 2010 to 2014 and is currently heading the Supply Chain and Transport Industries Group at the World Economic Forum. He is also member of several advisory bodies and think tanks.

Lehmacher has been involved in major initiatives in the Courier Express Parcel (CEP) industry, including the setting up of German ground services operations of GD Express Worldwide, the country organisation of the consortium of TNT and five major postal organisations (German, French, Dutch, Swedish and Canadian), the management of the German Express Mail Service (EMS) Joint Venture between Deutsche Post and TNT Express Worldwide, the development of TNT Express Worldwide in the Eastern European and Eastern Mediterranean regions, the expansion of the express parcel business of La Poste in Europe, the integration of the European parcel network DPD into the Group's business, and the setting up of the global network and express parcel expansion vehicle of La Poste – driving the group's growth strategy through strategic investments combined with entrepreneurial partnerships and entries into key markets worldwide, such as India, China, South Africa and the United States of America.

Lehmacher is author and co-author of various books, articles, and white papers, mainly in the area of global supply chain, trade, transportation, and logistics. He has participated at numerous speaking events, a number of which have been held by the World Economic Forum. These include Transforming Urban Transportation, The Asian Consumer: A Sustainability Champion in the Making? Other notable speaking events include the Global Competitiveness Forum in Riyadh, Boao Forum in China, and INK in association with TED. Lehmacher also shared his knowledge at institutions such as the MIT Centre of Transportation and Logistics.



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Analysis

At the 2016 Annual Meeting of the World Economic Forum in Davos, the Governors of the Supply Chain and Transport community mandated a study to understand the challenges and drivers of the New Silk Road. In 2016 in collaboration with Bain & Company, the World Economic Forum prepared a concise document summarizing the improvements that advanced technology can bring to the New Silk Road initiative. The primary authors of this report, Wolfgang Lehmacher, Mark Gottfredson and Gerry Mattios, developed the preliminary recommendations through interviews and secondary research. This paper summarizes the key findings of the study.

In many ways the New Silk Road serves as a living example of a key message that World Economic Forum reports have delivered in the past years as part of the Enabling Trade initiative: that countries can achieve significant trade benefits by reducing supply chain barriers. As the global economy continues to slow and the world searches for new growth engines, the Silk Road Economic Belt and the 21st Century Maritime Silk Road (aka One Belt One Road) offers a major development framework and opportunity for connectivity, international trade, and economic development.

The ancient and historic trade route between China and Europe is coming back to life as one of the biggest infrastructure projects of the 21st century, with major implications for economies throughout the world. One Belt/One Road (OBOR), the all-encompassing effort to restore old trade routes and streamline the transport of goods from Asia to Europe, has already received more than \$51 billion from China, and more than 100 countries have signed on, with free trade, collaboration agreements or other partnerships.

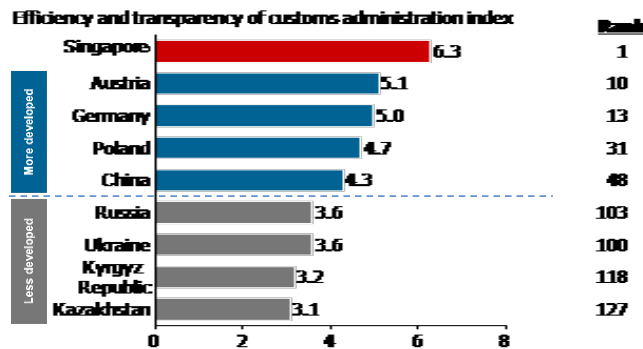
The expected benefits are well known: 70,000 new jobs, vastly improved economies of countries such as Kazakhstan, and opportunities for small and medium enterprises, from Asia and Europe, from Eurasia, Middle East and Africa, to enter new markets that today may not be easily accessible. But achieving that potential means overcoming four major obstacles or pain points:

- **Slow speed** with which goods now travel.
- **Inconsistencies** in administrative processes, primarily at the borders.
- **High costs** for everything from labour to logistics delays.
- **Lack of visibility** into the status of goods making their way along the New Silk Road.

Fortunately, the solutions exist to help OBOR reach its full potential with technologies that improve infrastructure inefficiencies, connect people and businesses, and create new business and job opportunities. Companies could achieve real time supply chain visibility by deploying low-cost satellites with access by iPhones or other handheld devices, for example.

When companies ship by air for instance they only need to deal with the red tape of customs and inspections at the beginning and end of a journey. International ground transportation is less expensive, but it might stall each time you cross a border. Products not only move slowly but are also subject to increased costs, including potentially moving cargo from one truck or train to another. There are also tariffs, arbitrary delays and possible system manipulation. OBOR countries have a lot to gain from improving the customs situation (see Figure 1). If OBOR operated with a single unified customs system and effective methods of tracking the products on board, shipments could move smoothly across boundaries – replicating the efficiency of air shipments with the low cost of land transport.

FIGURE 1: CUSTOMS CONSISTENCY VARIED SIGNIFICANTLY AMONG OBOR COUNTRIES



Note: Score from 1-7, with 7 being the highest efficiency
 Source: World Economic Forum, Global Enabling Trade Report 2014

Another move that could dramatically help is if the Asia-Pacific Economic Cooperation (APEC) introduced a standard customs procedure for OBOR freight by consolidating requirements and developing a common IT platform.

For OBOR countries, the path to an efficient and cost-effective New Silk Road begins by systematically addressing the four pain points of the digital supply chain. Here are some ways to begin.

- **Speed:** Companies could smooth shipments and make better use of resources by for example installing state-of-the-art handling technology and warehouse management systems, including capacity planning and supplier collaboration.
- **Inconsistency:** Countries could implement systems that standardize the clearance of goods while using common templates and replacing human decision-making with speedy Artificial Intelligence tools and processes.
- **Costs:** Companies could reduce labour costs and shipment-delay costs, with automation replacing such activities as loading and unloading.
- **Visibility:** New advances such as Digital Ledger Technology (DLT) could provide structured, real time tracking information to allow stakeholders to know when a shipment will arrive and to plan operations in advance.

By investing in the IT infrastructure to address these pain points, companies and countries will generate basic data which, as it matures and is structured, becomes invaluable when accumulated as “big data” – complex data sets that can be collected and analysed for insights that serve as a starting point for improving everything from operations to the development of new services.

With such systems in place, three key areas of opportunity will emerge along the New Silk Road.

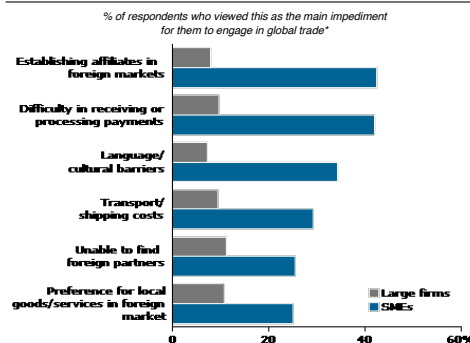
- Small and medium-sized enterprises (**SMEs**) will enjoy new development potential through fast and affordable access to new markets.

- Big data capabilities can create for OBOR markets growth in **innovative and collaborative business models**.
- Smart technology and big data will attract even **more FDI into OBOR** countries.

Today, market access is a key impediment for SMEs (see Figure 2). Smaller companies struggle to establish affiliates in foreign markets, have difficulty receiving or processing payments and face high shipping costs among other obstacles. Indeed, HP, Lenovo and others already ship goods on the New Silk Road. But the real opportunity is for SMEs, such as, for example, a small European producer of high-quality machinery or healthy food.



FIGURE 2: LACK OF ACCESS TO NEW MARKETS IS KEY IMPEDIMENT FOR SMEs TO ENGAGE IN GLOBAL TRADE



*This questionnaire surveyed 8,400 firms involved in imports and exports in the US and Europe, and respondents rated the severity of 19 obstacles on a 1-5 scale, with 1 indicating no burden and 5 indicating a severe burden. This graph shows the % of SMEs and large firms rating selected impediments as 4 or 5 on the 1-5 scale; firms with between 0 and 499 employees in the US are categorized as SMEs.
 Source: WTO World Trade Report 2016; US International Trade Commission; World Economic Forum; Bain analysis

Upgraded technology could level the playing field. SMEs could create market intelligence reports based on the real-time market data enabled by the internet of things and cloud services. This would help them understand product supply-and-demand dynamics and quickly adjust production plans, track pricing, predict future price trends based on historical behaviour, and identify and react to new market demands that are not fully satisfied.

Also, DLT could help these smaller and medium-sized companies reduce counterparty risk and minimize fraud. In all, the market access gains made by SMEs are expected to boost GDP in OBOR countries by 4%-7%.

Throughout the world, many industries have been disrupted by collaborative consumption and asset-sharing – by developments of the so-called sharing economy. Now, with the right IT in place, the sharing opportunities appear endless for companies and countries along the New Silk Road. For example, regional logistics providers could leverage each other’s infrastructure outside their coverage area and build far reaching seamless, real-time collaboration platforms. On-demand manufacturing and warehouse management platforms could connect markets with factories. Container cars with available space travelling across a Central Asia desert could advertise their readiness to load goods – potentially at a discount – and connect with shippers en route looking for a cost effective and efficient way to ship their goods.



In order to enable such sharing, again DLT provides significantly increased asset transparency between market participants and reduces information asymmetry. In addition, the emergence of a big data-inspired sharing economy will create employment opportunities in OBOR countries for talent with digital proficiency, expertise in logistics, transport, supply chain management and international business, and multilingual skills – this in a region that is now grappling with high unemployment.

Finally, smart technology and big data will attract even more FDI into OBOR countries. Already, information/IT services is the fastest-growing segment in China's outward FDI flow. In 2015, China invested \$18.9 billion in such projects, a sum that grew by 39% over 2014 and represents around 13% of China's total FDI.

Foreign direct investment in new technology will also broaden the economic base of Kazakhstan, Uzbekistan and other countries along the New Silk Road. They could leverage such advances as 3D printing to develop their manufacturing industries. Smart manufacturing technologies would enable SMEs to make more of their money from selling intellectual property than from shipping end products to customers.

Centuries after it was established, the New Silk Road could define a new quality of trade, more cost and carbon efficient between East and West – but only if the right technology is in place. Harvesting the vast benefits the OBOR initiative requires not anymore simply investing in industrial but first of all in smart infrastructure.

Remarks: Opinions expressed in this contribution are those of the author.

The [full whitepaper](#) is available on the website of the World Economic Forum.¹

¹ http://www3.weforum.org/docs/WEF_New_Silk_Road_Pager_2017.pdf