



# CHALLENGES LOGISTICS INDUSTRIES ARE FACING IN UZBEKISTAN- DIGITAL SOLUTIONS AND INNOVATIONS

**Feruzakhon Sultonova**

*Doctorant (PhD) of Andijan Machine Building Institute*

**Fayzulloh Gulomov**

*Student of Andijan Machine Building Institute*

## ANNOTATION



*The Transport and Logistics Industry is the back bone of any economy, and the driving force behind all sectors, be it agriculture, manufacturing or services. Globally, logistics industry trends are dependent on significant changes that are driven by the implementation of technology-driven innovations in the business processes. The next-generation logistics management solutions are moving towards making the global supply chains more customer-centric and sustainable.*

**KEY WORDS:** *logistics, transportation, management, supply chain, warehouse.*

## DISCUSSION

Uzbekistan – located in the central Asia, one of two double landlocked countries in the world. According to recent studies, its population is more than 34 million people. One of the key export items is fruit and vegetable products. Annual production is 17 million tons. Over 4 million tons are expected to the USA, EU countries, Russia, Brazil, Vietnam, Indonesia, Macedonia, Malaysia, Mongolia, Saudi Arabia, Thailand, China, Japan, and other countries. But, Uzbekistan has much more problems in terms of logistics system. Since independence, the economy of Uzbekistan has been existing as a Soviet-style command economy with slow transformation

to market economy. Now we are going to address some issues and solutions.

### **1. Transportation Costs**

Moving goods from one location to another is never free. You will need packing materials, movers (workers), drivers, vehicles (trucks) and possibly storage facilities. The greater the load and the longer the distance, the higher the cost. But weight and distance are not the only two factors that affect transportation costs. There are several other factors that have a significant impact on the cost of transportation. Especially, in Uzbekistan, this rates are much higher than other countries. Not only

vehicles are expensive, but also custom-house and fuel prices are considerably higher.



Selecting the right mode of transportation is of utmost importance when moving goods. You need to consider two things here: transit time (the time it takes to reach the destination) and the costs associated with the chosen mode of transportation. To lower transit time (faster transit), you need to use faster modes of transportation, such as air transport, which has a higher cost. But higher transit time (slower transit) can also increase costs by increasing the inventory carrying costs.

## 2. Fuel Expenses

Logistics companies may not be able to control the fuel prices, but controlling fuel expenses is definitely within their reach. Fuel prices are volatile and change constantly. In times of crisis and upheaval, such as the threat of war in the oil producing countries, the price of a barrel of crude oil

can fluctuate by as much as \$5 or more on a single day. This can make a significant impact on your transportation costs regardless of the mode of transportation you have chosen.

The average price of gasoline around the world is \$1.08 per liter as of January 7, reports Global Petroleum Prices, who compiled a list of countries with the cheapest and most expensive petrol prices. As per the report, Venezuela is the country where a liter of petrol is the cheapest - \$0.01, while Sudan (\$0.13) and Iran (\$0.29) are second and third in the rating respectively. Uzbekistan ranked 18th with average price of gasoline to be around \$0.54 per liter. In neighboring Turkmenistan, one liter of gasoline is sold at \$0.43, while in Kazakhstan it is \$0.48 and in Kyrgyzstan \$0.67. Tajikistan is not included in the rating.



Labour costs: Moving goods require labour and labour costs money. You need a team of trained and experienced people to complete the job – to pack the goods, label and categorize packages, load the packages into the truck, unload the packages from the truck, unpack the packages at the destination, drive the trucks and keep inventory. The larger the quantity of goods to be transported, the higher the costs will be.

### 3. Impact of the Economy and Policy

Political instability, decline in manufacturing sector performance, increase in consumer price index, inflation etc. adversely impacts demands for products and services, which also impacts on freight demand. Conversely, government investments in infrastructure projects increases wages and demand for products. And it doesn't depend on only a particular country. For example, as we mentioned above, Uzbekistan is double landlocked country. It means that in order to deliver particular product to somewhere, for instance France, Uzbek companies have to cross at least two countries' borders. That's why there are lots of concerns about other countries' political situations as well as different aspects.

### 4. Improving Business Processes

A research by Inboundlogistics.com cited that 36% of the enterprises polled strongly agreed that they relied on their 3PL partners to drive cost reductions and business process improvements. This means logistics partners are expected to have the knowledge and experience to look beyond supply chain and logistics operations to drive changes within the overall operations framework. They also need to be financially stable, flexible and open to taking reasonable risks for long term gains. At the end of the day, the logistics business is highly competitive; hence industry benchmarking plays a key role in

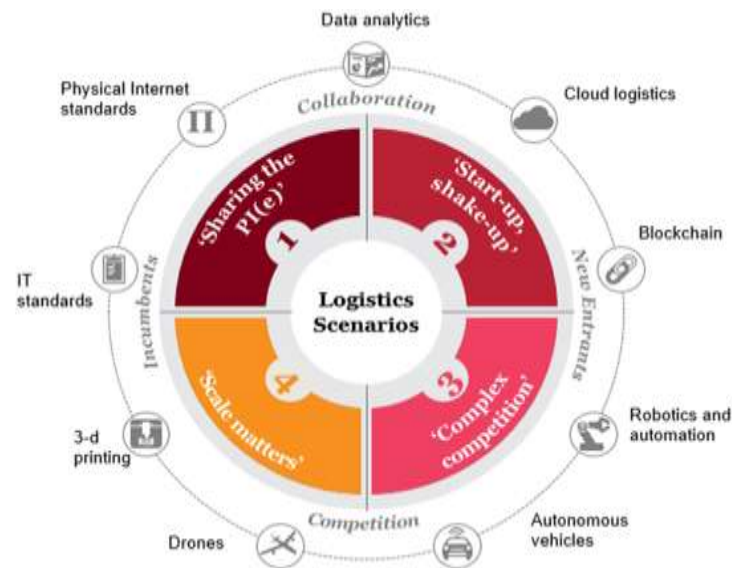
business process improvements. It's like the proverbial rat race – to be the best and the fastest.

### 5. Sustainability

The transportation sector is a major energy consumer, heavily dependent on fossil fuels and their price development. Scarcity of energy would not only affect transportation significantly; the role of transportation in energy consumption makes the sector one of the main starting points for changes when it comes to a transformation of the energy system and source. The demand for more fuel-efficient vehicles is creating innovation opportunities, but at a higher capital cost for transportation providers. Leading providers such as UPS and FedEx have been working with auto manufacturers for years to test delivery vehicles that use alternative fuels, including electric, liquefied natural gas (LNG) and bio diesel vehicles. Lower value bulk commodities such as steel, coal and chemicals are particularly sensitive to increased fuel and emissions costs, and less output will cause fewer total ton-miles transported. As customers expect service providers to comply with their "green" mandates, there will be more and different regulations to deal with around the globe. Yet, as compliance costs increase, so will the opportunities for differentiation as customers will favour transportation companies that stay ahead of the compliance curve.

### Why and how digital transformation (and digitization) matter in logistics and transportation ?

When opening the Gartner Supply Chain Executive Conference 2015, Gartner's Peter Sondergaard stated that, we quote, "in leading organizations, one quarter of enterprise costs will be devoted to the digital transformation." Of these investments approximately 20 percent will be allocated directly to supply chain transformation, Sondergaard added.



### 1. Snap Decisions

We saw the ways in which travelers in the digital age are given the information they need to make quick, informed decision (i.e. choosing a route or deciding on lodgings during a multi-day trip). As we enter the era of digital shipping, many businesses are finding that the same phenomenon applies to their logistics operations. Not only can shippers and freight forwarders dynamically route and reroute their fleets to account for changing conditions, they can even make rapid cost-benefit calculations to figure out the best options for getting goods to their customers at exactly the right time. If, for instance, your business was shipping replacement parts to an auto repair shop, and another shop nearby registered their need for a particular part or parts, you could use live tracking and digital manifests to see whether it would be possible to reroute the existing shipment to the cover the needs of the other shop so that they could receive their order the same day. At the same time, you could simulate the effects of these changes on your entire supply stream and determine whether you needed to adjust your production plans or capacity usage. Whether you're utilizing owned-freight or a digitally-enabled 3PL (third-party logistics provider), this split-second flexibility could help you to provide maximum value for your clients within the context of the leanest possible value chain structure.

### 2. Advanced Analytics

While this has been implicit in some of the discussion of digital shipping above, it's time to be a little more forthright about one of the primary drivers of cost reduction in modern logistics: data. Digital workflows enable manufacturers, shippers, and freight forwarders to collect mission critical information during every stage of production and transport, from data about machine efficiency to real-time data about truck and container locations. As a result, it's possible to gain a more thorough and

comprehensive understanding of one's logistics operations than ever before. Not only does this make it possible to manually search for areas of inefficiency or seek out potential future disruptions, but it also creates an environment in which businesses have the necessary data availability to run advanced prescriptive and predictive analytics algorithms. These processes can, on the one hand, help predict the outcomes of various scenarios (like the one we saw above) by creating digital copies of your supply chain and running simulations on it. On the other hand, they can also examine your existing operations via prescriptive processes in order to uncover areas of waste and inefficiency. If, for instance, you're using a transport network that has superfluous hubs or unnecessary distribution centers, the data gathered in a digital shipping workflow could help you to uncover these areas of waste and ultimately work to change them, adding value in the form of increased efficiency.

### 3. Internet of things

The Internet of Things, which is often referred to as "telematics" in the realm of transportation, could have a direct economic impact of \$ 1.9 trillion on logistics and supply chain within the next five years. Operating on three levels — i.e., connected hardware, infrastructure which facilitates data exchange and processing and the software tier, —

IoT blurs the line between the digital and physical, as virtually any object such as a delivery vehicle, picking cart or inventory items can potentially become trackable. Equipped with IoT solutions, manufacturing, retail and transportation companies can monitor goods' whereabouts in real time and ensure they arrive at the right time and place and in appropriate condition. Furthermore, IoT solutions enable businesses to assess demand based on historical data and automate inventory replenishment.



Besides RFID- and barcode-based asset tracking, the applications of the Internet of Things technologies in logistics include:

- **Connected & autonomous delivery vehicles.** While on-board GPS trackers, driver drowsiness detection technology and fuel level sensors have become a reality in modern logistics, further advances in electronic engineering and computer vision are expected to give rise to unmanned delivery solutions including drones and driverless trucks aimed at automating short-haul delivery services and facilitating same-day delivery to remote areas.
- **Smart warehouse.** Unlike traditional warehouse management systems (WMSs), IoT solutions allow warehouse managers to monitor goods down to the item level, streamline order processing with the aid of picking robots and improve inventory accuracy by up to 95%.
- **Wearables.** The applications of the wearable technology in logistics, supply chain management and transportation encompass hand-worn, head-mounted and fabric-contained devices which expedite picking operations in the warehouse, monitor employees' well-being and provide hands-free guidance to industrial workers.

#### 4. Artificial intelligence

As I mentioned earlier, the logistics business is interwoven with historical and real-time data. To fast-forward the ultimate Digital Transformation goals, it has to be captured, analyzed and acted upon. With the greater availability of cloud managed services supporting rapid and cost-effective development of custom AI-based analytics solutions — as well as exponential growth in IoT devices' computing power enabling software engineers to relocate data processing closer to the edge of a network, — these tasks become manageable. Today Artificial Intelligence can sense much of textual and spoken interactions— the comprehension ability of AI speech-to-text algorithms has already surpassed that of humans — and successfully transform vast amounts of visual data into system-usable content. Large-scale adoption of AI solutions is set to make a revolutionary impact on supply chains:

- **Intelligent forecasts.** Although AI-based demand forecasting is still in the early stages, smart algorithms tend to display a 6.4% higher accuracy rate compared to traditional forecasting methods for industries with highly volatile demand, as they take more factors into consideration (from demand fluctuations to bad weather). By ensuring a consistent flow of data throughout a supply network and incorporating advanced ETL capabilities into enterprise software solutions, companies involved in

logistics and supply chain management can achieve near-real-time information exchange, anticipate customer needs and personalize buying experience.

- **Route & freight cost optimization.** Besides anticipatory shipping enabled through smart demand forecasting programs, AI technology can be integrated into delivery modules to optimize routes based on real-time environmental, traffic and vehicle/staff availability data, and thus reduce the last mile costs, fuel consumption and carbon dioxide emissions.
- **Increased automation with robotics.** From autonomous mobile robots (AMRs) which locate, track and move inventory in warehouses and fulfillment centers to collaborative workspaces where humans and intelligent machines work hand in hand, robotics presents a unique opportunity for businesses looking to fill the labor gap and scale operational capacity.

#### REFERENCES

1. <https://kun.uz/en/news/2019/01/15/uzbekistan-ranks-18-in-the-list-of-countries-with-cheapest-petrol-price-list>
2. <https://3plinks.com/5-issues-affecting-transportation-costs>
3. <https://sipmm.edu.sg/key-issues-logistics-transportation>
4. <https://supplychaingamechanger.com/the-digital-transformation-in-logistics-technologies-barriers-and-predictions>
5. <https://blog.flexis.com/how-digital-shipping-can-lower-logistics-costs>
6. <https://www.i-scoop.eu/digital-transformation/transportation-logistics-supply-chain-management>