From Blockade to Bridge: TRIPP, Zangezur, and the Economics of Connectivity in the Caucasus

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I. The Promise of Connection: From Isolation to Integration

Armenia, a landlocked nation hemmed in by closed borders and mountainous terrain, has long faced the penalties of geography. Its trade routes depend on access through Georgia to Black Sea ports, leaving exporters and importers with 800–1,000 km of inland haulage and costs far higher than those faced by coastal economies. For many landlocked developing countries (LLDCs), transport costs remain disproportionately high. Earlier estimates suggested that inland transport alone could account for 30–40% of export value for LLDCs (World Bank & UN, 2014). A decade later, updated analysis underscores the same structural disadvantage in broader terms; that is, overall, LLDCs still face trade costs about 70% higher than coastal economies (World Bank, 2024).

Figure 1. Paul Klee's *Highways and Byways*

Source. Museum Ludwig, . Paul Klee, Hauptweg und Nebenwege (Highways and Byways), 1929 (https://museum-ludwig.kulturelles-erbe-koeln.de/documents/obj/05010396).

The challenge recalls artist Paul Klee's *Highways and Byways*, where layered lines stretch in multiple directions, some deliberate, others seemingly arbitrary. Like Klee's composition, Armenia's corridor options resemble that composition: a tangle of outward paths, each promising connectivity, but diverging in the costs, risks, and governance structures that ultimately determine whether trade flows smoothly—or stalls at bottlenecks.

Entering this arena of tangled options is the Trump Route for International Peace and Prosperity (TRIPP), a U.S.-brokered corridor through southern Armenia intended to link Azerbaijan's mainland with its Nakhchivan exclave and onward to Turkey. Crucially, the U.S. has secured exclusive development rights for TRIPP, underscoring both the geopolitical stakes and the external governance framework likely to shape its rollout.

If TRIPP represents one bold stroke imposed from outside, Armenia's Crossroads of Peace Initiative (CPI) reflects the country's own vision of connectivity built on the principles of full sovereignty, transparency, and balanced regional integration (Crossroads, undated; Communications Unlimited, 2025). CPI emphasizes that

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[3] Note: The author previously served as a consultant on a project to prepare Armenia's national freight transport strategy, undertaken in the context of the Crossroads of Peace Initiative, with emphasis on corridor development, regional integration, and long-term trade competitiveness.

new infrastructure links should serve Armenia's long-term development as well as regional trade, making it a natural complement—but also a potential counterweight—to TRIPP's externally driven model.

Momentum is also building outside Armenia. In August 2025, Turkey broke ground on the Kars–Iğdır–Aralık–Dilucu railway, directly connecting its northeast to Nakhchivan. This project, framed as part of the broader Zangezur Corridor, is designed to carry up to 15 million tons of cargo annually and is backed by €2.4 billion in green financing.[4] Together, TRIPP and Zangezur reflect overlapping visions: one anchored in U.S. involvement, the other in Turkey's regional ambitions.

This article examines how these corridors, alongside traditional options, measure up in cost, time, reliability, and predictability. It also explores regional reactions, sovereignty questions, and—importantly—presents the type of corridor options analysis that shippers themselves employ when deciding the "best" way to move their goods. The article concludes with a practical case study: Maria, a logistics planner in Armenia, evaluating freight performance to Europe using the same framework many companies rely on to compare costs, transit times, and reliability across competing routes.

II. The Economic Burden of Being Landlocked

Being landlocked imposes both direct transport costs and hidden trade penalties. Direct costs stem from long inland hauls, multiple border crossings, and modal transfers before goods reach seaports. For example, moving a container from Yerevan to Poti costs approximately $2,000–$2,500, while a comparable coastal movement might cost under $1,000 (Agora Freight, n.d.). Hidden penalties appear as reduced competitiveness: shippers face delays, missed schedules, and higher insurance and inventory costs because reliability is lower. What might take three days in good conditions can stretch into a week when snow, congestion, or border holdups intervene (World Bank, 2008; UNCTAD, 2013). These delays erode predictability, making it harder for firms to commit to just-in-time manufacturing or meet tight export contracts.

Recent evidence underscores the magnitude of this disadvantage. According to the United Nations Office of the High Representative for LLDCs, landlocked developing countries incur unit logistics costs on exports that are 63% higher than those of transit developing countries, and for imports, the disparity rises to 75%. When compared to coastal countries within the same region, LLDCs face export logistics costs that are 27–60% higher, and import costs can be up to 79% higher (UN-OHRLLS, 2025). A major driver of this gap is port-hinterland transportation, which can add up to 12% to unit logistics costs for time-sensitive goods such as agricultural products or electronics (UN-OHRLLS, 2025). These structural disadvantages make it harder for LLDCs to diversify beyond primary commodities and integrate into global value chains.

III. Comparative Lessons: Landlocked but Not Left Behind

Yet landlocked status need not be destiny. A series of examples illustrates the tools available. Kazakhstan invested heavily in Khorgos Gateway, a dry port and logistics hub on the Chinese border, where current delays

[4] The financing package, sourced through international lenders and development banks, is structured as "green" financing because funds are earmarked for climate-friendly infrastructure elements — including electrified rail operations, energy-efficient rolling stock, and environmental safeguards along the corridor alignment.

are being addressed through additional infrastructure and process improvements.[5] While rail gauge differences remain a friction, the facility has allowed it to tap into Eurasian rail flows and capture value from China–Europe transit. Laos transformed its position in 2021 with the Thanaleng Dry Port and the Lao–China Railway. By cutting transit times to Chinese markets from weeks to days, it has become more integrated into supply chains, including for agricultural exports. Ethiopia's Modjo Dry Port handles more than 90% of the country's trade. Although Ethiopia still faces high inland costs, Modjo has streamlined flows to Djibouti by consolidating cargo, reducing congestion, and enabling customs processing inland.

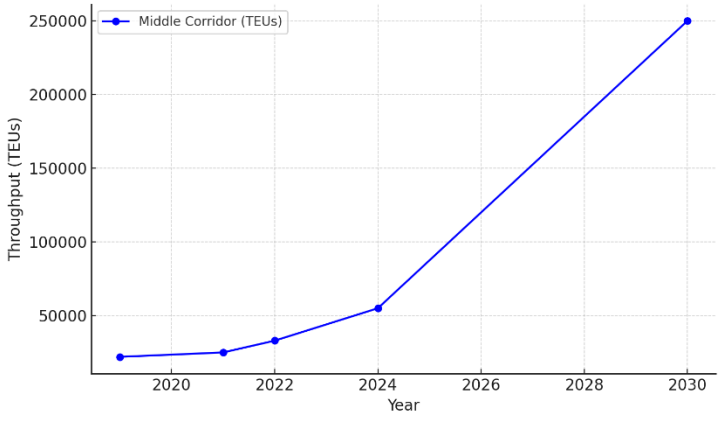
These experiences show that policy, governance, and investment choices matter. Dry ports, harmonized customs systems, and predictable intermodal services can shrink "economic distance" even if geography cannot be changed. For Armenia, the lesson is clear: if corridors like TRIPP or Zangezur are to succeed, they must not only shorten kilometers, but also reduce uncertainty at borders and terminals. They could reduce transit time and possibly create multimodal options if new dry port or intermodal platforms (e.g., Gyumri or near Meghri) are built. However, the legal, financial, and governance arrangements—especially under a 99-year development right—must be structured to share economic gains equitably.

IV. Trade Dynamics and Projected Growth

Container traffic along the Middle Corridor has shown steady but significant growth over the past decade. According to the EBRD (2023), volumes rose from approximately 22,000 TEUs in 2019 to 25,000 TEUs in 2021 and 33,000 TEUs in 2022. More recent estimates put 2024 throughput at about 55,000 TEUs (EIAS, 2025; APM Terminals, 2025). These increases reflect rising demand for alternatives to the congested and politically constrained northern routes through Russia.

Looking ahead, the EBRD projects that container flows could reach 250,000 TEUs by 2030. This represents a nearly tenfold increase from current levels. Although the absolute numbers remain modest compared to the volumes handled by established Eurasian rail and maritime routes, the sharp upward trend illustrates the Middle Corridor's growing role as a viable transit option.

Figure 2. Projected Trade Volumes along the Middle Corridor



For Armenia and its neighbors, this growth trajectory offers both opportunity and challenge. On the one hand, increased throughput could create incentives for investment in complementary infrastructure—such as dry ports, intermodal hubs, and streamlined customs procedures—that improve competitiveness. On the other, realizing these projections will depend

[5] Recent reports note that while Khorgos has faced logistical bottlenecks and delays due to surging traffic, investments in expanded facilities and supporting infrastructure are underway to increase its capacity and improve efficiency (Astana Times, 2025).

heavily on continued improvements in corridor efficiency, including border management, rail interoperability, and maritime reliability across the Caspian and Black Seas.

V. Regional Responses: Iran, Russia & Global Powers

Turkey has already acted on its ambitions, breaking ground on the Kars–Nakhchivan line as part of the Zangezur Corridor, with expectations that it could be operational within four to five years. The United States has embedded itself in Armenia's transport future by securing exclusive development rights for TRIPP, ensuring that Washington will have a direct stake in both governance and financing. Azerbaijan, for its part, gains a direct linkage to Turkey and Europe, reducing its dependency on Georgia or Iran. Iran remains strongly opposed, seeing itself sidelined from Caucasus transit opportunities and framing the corridor as a strategic threat. Russia has been more cautious, publicly welcoming the peace dividend while at the same time warning that outside intervention could complicate the situation in a region it has long considered within its sphere of influence (Reuters, 2025).

VI. Illustrative Corridor Performance: Armenia's Options in Practice

While multilateral forecasts point to rapid growth in container traffic along the Middle Corridor, those projections only matter if they translate into the daily decisions of logistics managers assessing costs, risks, and delivery times. To illustrate how such choices are made in practice, the following case study places the analysis in the hands of a logistics planner tasked with evaluating Armenia's corridor options for moving a 40-foot container to Western Europe.

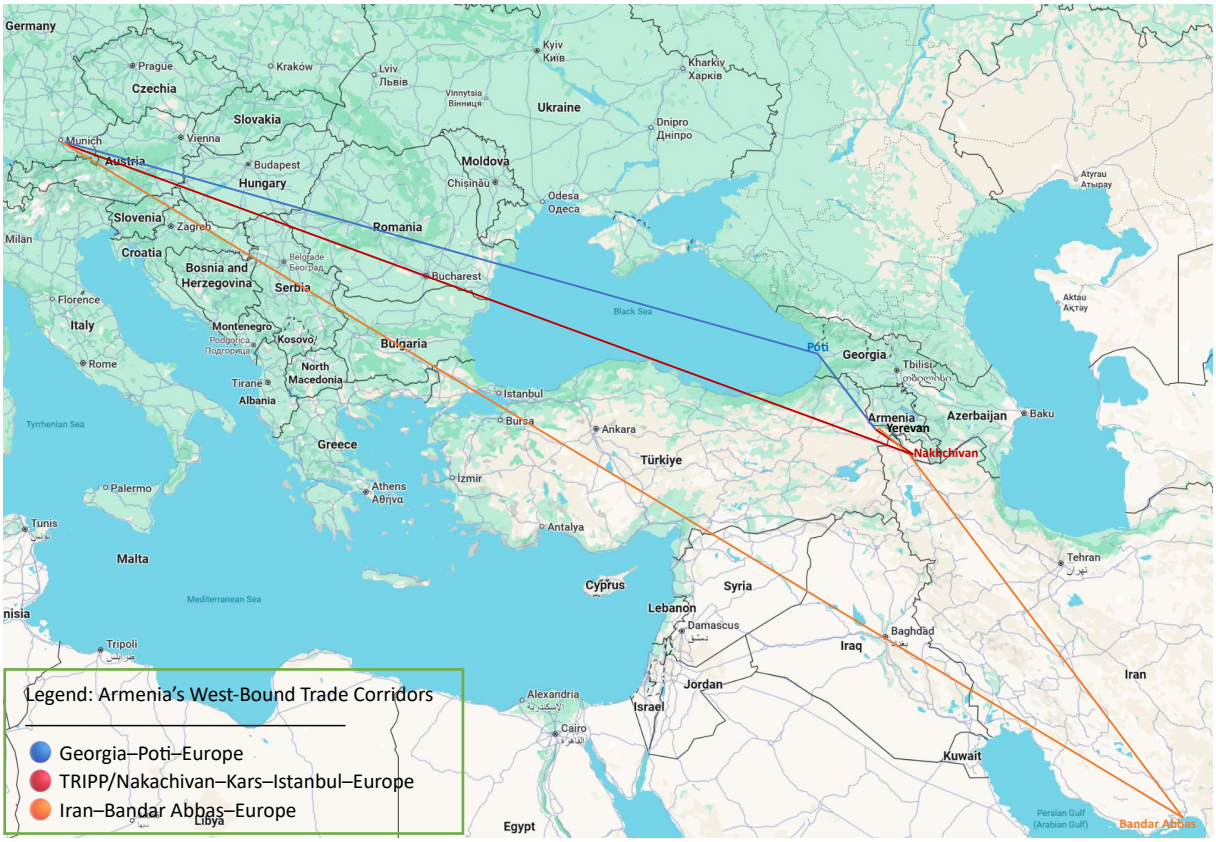
Maria, chief logistics planner for a multinational company's plant in Yerevan, Armenia, was asked by her CEO to analyze the competitiveness of sending a container of textiles valued at $50,000 from Yerevan to Western Europe (Munich), where the company's European distribution center is located. Maria first turned to mapping the options (**Figure 3**), where Armenia's trade routes branch in three realistic directions for west-bound trade: westward via Georgia and the port of Poti, southwest through TRIPP (Nakhchivan) to Istanbul, and southward to Iran (the port of Bandar Abbas) and the Persian Gulf. To help frame her analysis, she prepared a schematic map simplifying the corridors.

She structured her analysis around cost, time, inventory, and reliability. But as Maria well knew, a corridor analysis could not be done from her desk in Yerevan alone. Armenia's corridors extend through Georgia, Turkey, and Iran — each with its own constraints. To capture this complexity, she drew on a mix of domestic knowledge, peer benchmarking with other logistics managers, secondary reports from multilateral institutions, and interviews with freight forwarders and carriers. This mosaic of sources allowed her to build a comparative picture that went beyond kilometers and tariffs, incorporating the real-world frictions shippers face: inspections, transshipment risks, seasonal closures, and port performance variability.

Using Questionnaires to Capture Corridor Performance

To ground her corridor performance analysis in real-world evidence, Maria and her team designed short questionnaires for logistics operators. These tools were tailored for different actors — trucking companies, rail operators, freight forwarders, port agents, and customs brokers — each offering a different vantage point on time, cost, reliability, and predictability.

Figure 3. Armenia's Freight Corridor Options to Europe (schematic illustration of trade directions via key nodes like Kars, not actual routings)



Box 1 presents a sample questionnaire Maria's team posed to trucking companies, whose insights proved especially valuable for capturing both current performance and awareness of improvements along Armenia's main routes.

Maria began with what she knew best: Armenia's trucking charges, border procedures, and customs clearance times. Her company had firsthand experience with delays at Bagratashen crossing on the Armenian-Georgian border and the Meghri crossing on the Armenian-Iran border, giving her a baseline on inland costs and risks. But the CEO wanted her to extend her analysis well beyond Armenia's borders. To build this picture, Maria reached out to carriers, freight forwarders, and shippers moving containers through Georgia and Poti, and carriers serving Turkey, via the use of questionnaires prepared by her team to help quantify bottlenecks.

Maria incorporated the responses from these structured interviews into her performance framework. While tariffs and transit times could be benchmarked through official sources, insights on reliability and predictability emerged most clearly from these conversations with truckers. Truckers often provided more than data — they offered a running commentary on the state of the world. One driver joked that truckers should bring plenty of food as they wait at Meghri — though Maria wisely kept that out of her official report.

Box 1. Sample Questionnaire for Trucking Companies

General Information

- Company name, location, and years of operation
- Main types of cargo carried (e.g., textiles, perishables, electronics, bulk)
- Typical routes served (Georgia–Poti, TRIPP–Istanbul, Iran–Bandar Abbas)

Time & Cost

- What are your standard tariffs for a 40-ft container on these routes?
- What is the average transit time from Yerevan to the next major node (border crossing, seaport, or rail terminal)?
- How much time is typically lost due to congestion, waiting at borders, or road restrictions?

Reliability & Predictability

- Over the past six months, what percentage of trips met their planned delivery schedules?
- What are the most common causes of delay (e.g., border clearance, congestion, inspections, vehicle breakdowns, weather)?
- How predictable are clearance times at border posts (Bagratashen, Meghri, etc.)?

Bottlenecks & Constraints

- Where do you experience the longest delays along these corridors? (specific borders, tunnels, ports, or urban choke points)
- Are there particular times of year or peak periods when delays are more severe?

Awareness of Improvements

- Are you aware of any ongoing or planned projects (road upgrades, new customs facilities, port expansions, new rail links) along these routes?
- If so, what changes do you expect these projects will bring in terms of:
  - Time (shorter transit, reduced waiting, shorter container staging)
  - Cost (lower tariffs or fees)
  - Reliability (fewer breakdowns or smoother procedures)
  - Predictability (more consistent clearance times, improved scheduling)
  - Have you noticed any improvements already in effect? If yes, what impact have they had on your operations?

Several operators noted that new customs scanning equipment at Bagratashen had already cut clearance times. Others pointed to both the advantages of the Marmaray tunnel and risks of congestion in Halkalı (near Istanbul), while a few flagged planned investments in the Kars–Nakhchivan line as potential game-changers for TRIPP. Some also highlighted the new short-haul unit train between the Tbilisi Dry Port and Poti, which offers daily services and potential time savings by reducing container staging times. They added that these gains could expand further once Anaklia is developed and Poti congestion is eased. For the Iran route, agents handling cargo at Bandar Abbas underscored infrastructure bottlenecks and delays linked to sanctions. In some cases, Maria's team was able to acquire sample shipping invoices from shippers to validate cost information obtained from other sources.

By structuring her interviews this way, Maria ensured her framework reflected both present realities and forward-looking dynamics influencing Armenia's logistics options. Her reliability scores drew on this collective wisdom from those who used the corridors daily, complementing official benchmarks on tariffs and transit times.

Analysis Results

Maria, ever the pragmatic planner, isn't concerned with lofty visions—she just wants her container to arrive without developing its own frequent-flyer miles along the way. Her comparative performance assessment (**Table 1**) shows clear distinctions. The Georgia–Poti route, Armenia's traditional workhorse, involved roughly 800 kilometers overland plus a long maritime leg to Europe. It cost between $3,000 and $3,500 per container, required 10–14 days in transit, and offered moderate but often weather-disrupted reliability. TRIPP, though not yet operational, appeared the most promising: 600–700 kilometers inland followed by rail to Istanbul and into Europe, at costs of $2,500–3,000, transit times of 7–10 days, and an expected reliability of 75–80%. The Iran–Bandar Abbas corridor was uncompetitive: over 1,200 kilometers to reach the Gulf, then a long 6,000-kilometer sea journey, with costs exceeding $4,500, transit times of 20–25 days, and weak reliability.

Table 1. Comparative Corridor Performance

Corridor Option	Description	Distance (km, inland)	Cost ($/40ft)	Time (days)	Inventory Cost ($)*	Reliability	Predictability
Poti–Europe	Yerevan → Poti → sea to Europe/Munich	800 + 3–4k sea	$3,000–3,500	10–14	$300–450	~65%	Medium
TRIPP–Istanbul–Europe	Yerevan → Nakhchivan → Istanbul → Marmaray → Europe/Munich	300 + 2–2.5k rail	$2,500–3,000	7–10	$200–300	~75–80% (expected)	High
Iran–Bandar Abbas–Europe	Yerevan → Gulf → sea to Europe/Munich	1,200+ + 6k sea	$4,500+	20–25	$500–750	~45–50%	Low

***Inventory cost assumes a cargo value of $50,000/container, 10% annual carrying cost (~0.03% per day).

In her report to the CEDO, charts made the trade-offs easier to visualize (**Figure 4**). On a cost vs. transit time graph, TRIPP emerged as the frontier option, Poti fell in the middle, and Caspian and Iran lagged behind. On a cost vs. reliability graph, TRIPP again looked most promising, though Maria cautioned that its reliability ratings were expectations derived from peers rather than empirical observation.

Key Insights

Maria's findings resulted in three main takeaways for her CEO:

1. **Iran Route** — Too slow, expensive, and unreliable to be viable except as a last-resort fallback.
2. **Poti Route** — Familiar and dependable enough to sustain trade, but constrained by seasonal variability and port congestion.
3. **TRIPP** — If developed as promised, could dramatically improve Armenia's position by lowering inland costs, cutting transit times, and enhancing reliability — though its promise depends not only on infrastructure delivery but also on governance.

Figure 4. Comparative Corridor Performance: Cost vs Transit Time (top) and Cost vs Reliability (bottom)

Her conclusion was pragmatic: Poti remained the safest option today, but TRIPP, if realized, could redefine Armenia's logistics map and narrow its landlocked penalty. For her CEO, the analysis underscored a larger truth: selecting a corridor was not only a matter of tariffs and transit days, but of trust in institutions, predictability of partners, and the durability of peace. Of course, every corridor study eventually runs into the universal truth of logistics: no matter how perfect the plan looks on paper, someone, somewhere, will still ask why their shipment is late

VII. The China Factor: A Quiet Strategic Play

While much attention has focused on the U.S., Turkey, and Russia, China has been playing a quieter, longer-term game in the South Caucasus. One signal is the recent award of a tender to a Chinese interest (with a subsidiary partner based in Singapore) for development of Georgia's Anaklia Port, a long-stalled deepwater port project that would provide Black Sea access linked to intermodal rail corridors into Central Asia and China. At the same time, China has advanced its role in the International North-South Transport Corridor (INSTC), a partnership with Russia and Iran that connects to India. This corridor bypasses the South Caucasus entirely, offering an alternative axis of connectivity that competes with both TRIPP and the Middle Corridor.

China's Belt and Road Initiative (BRI) also overlaps with these dynamics, though Beijing's view of U.S.-branded infrastructure like TRIPP remains ambiguous. On the one hand, Armenia's new links could eventually complement BRI branches by extending east–west flows. On the other hand, Chinese strategists may regard TRIPP as a Western counterweight to BRI's influence in Eurasia.

For Armenia, the implication is straightforward but sobering: if it does not position itself carefully, new east–west and north–south links could bypass it altogether. Practicing "multi-vector" diplomacy is a survival imperative — blending Western financial and institutional backing, Russia's historical role, Iran's interest in north–south access, and China's east–west ambitions. In that mix, Armenia's challenge is to remain not a corridor bystander, but an active integrator of competing interests.

VIII. Conclusion: Logistics as Diplomacy, and Analysis as Practice

As the Caucasus transitions from blockade and conflict to connection and commerce, logistics can offer more than throughput—it can offer trust. The challenge lies in crafting systems where all actors benefit, no actor dominates, and landlocked geography is transformed from weakness into leverage. In this frame, TRIPP is not just a branded route. It is a test case for harmonizing peace, policy, and "portless" trade.

Also important, this article has shown that corridor decisions are not judged on politics alone. They are assessed through a framework of cost, time, reliability, and predictability—the same framework shippers use when deciding how best to move their goods. Maria's case study illustrated this process in practice, highlighting how data from interviews and benchmarks feeds into performance comparisons. A real-world application would involve deeper analysis, continuous monitoring, and richer datasets, but the underlying logic remains the same.

Finally, Armenia itself has emphasized that sustainable connectivity must be grounded in its Crossroads of Peace Initiative (CPI). CPI insists on full sovereignty, transparency, and balanced development—principles that ensure corridors serve national as well as regional goals. Positioned alongside TRIPP and Zangezur, CPI can act as the guiding framework to transform corridors from contested lines on a map into functioning trade arteries. Logistics, in this sense, becomes diplomacy in action — not only linking markets, but reinforcing peace through shared prosperity. And yet, as Maria would remind us, even the best frameworks only matter if the container gets there on time.

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The *For the Beauty of Logistics* Series

This paper is the tenth installment in Dr. Kent's *For the Beauty of Logistics* series, a collection of short papers that explores how logistics principles intersect with economic, policy, and infrastructural systems to drive innovation, optimize complex processes, and reveal deeper insights into global dynamics. Previous papers in the Series can be found here:

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