Memo: Supply Chain Disruptions and Delays

November 2021

The effects of global supply chain issues are widespread and are impacting businesses and consumers alike around the world. In addition to managing the challenges of an ongoing pandemic, Ontario businesses must now grapple with significant disruptions and delays to their supply, constraining their ability to meet consumer demand. This document seeks to outline where some of the issues are occurring along the supply chain and offers a few provincial- and federal-level solutions.

Unpacking the Complex Nature of Impacted Supply Chain Entities:

1. Origin of manufacturing
    a. Raw material shortages including resin (a necessary component of plastics), polymer and additives, contributing to higher prices and posing challenges for ability to manufacture certain goods. In fewer than six months beginning in 2021, the price of raw materials required for the plastics industry saw the most extreme increase, more than doubling.
    b. Rotating power outages in countries like China prohibiting factories from producing goods at full capacity resulting in additional supply shortages.
    c. COVID-related capacity limits and safety measures also reducing ability to produce at full capacity.
2. Transportation to warehouses
    a. Shortage of truck drivers and container chassis (truck designed to carry shipping containers), as well as rising fuel costs – all contributing to higher prices and delays in moving goods.
    b. Shortage of warehouse space and warehouse labour also adding to supply chain disruptions and delays.
    c. Carriers (both owner-operator truck drivers and asset-based carriers) are setting the price due to an imbalance of supply and demand ultimately stemming from news in major port markets, and thereby leading to higher rates and cost barriers for businesses needing to move goods.
        i. Historically, owner-operator truck drivers and asset-based carriers would compete based on price, assuming services are equal (i.e. companies needing to have loads moved had leverage and could choose carriers offering the lowest rates). This was happening prior to current supply chain disruptions under what was called a "high truck to load ratio" – in other words, there were more trucks than loads, which fostered competitive pricing.
        ii. The opposite is occurring now under a "high load to truck" ratio. There are more loads than trucks which gives carriers leverage and the ability to set prices as high as they want.
        iii. The difference between trucks available and number of loads needing to be moved driving an imbalance of supply and demand.

3. Exporting/importing shipping ports
    a. Major congestion and outdated infrastructure* preventing efficient unloading.
    b. Shipping container shortage – many thousands of containers sitting stranded at sea on ships anchored near jammed-up ports. In principle, there are more than enough containers to handle global trading volumes, but in practice, availability in several parts of the world has become extremely tight due to large volumes of containers being stuck in the wrong place.
    c. Imbalance between filled containers coming into North America vs leaving – some U.S. exporters say shipping lines are refusing to send containers inland from ports to pick up American cargo because shipping lines are trying to get containers – even if they are empty – back to factories in Asia as quickly as possible to take advantage of historically high shipping prices for exports leaving the Asia continent.
        i. According to the US-based Agriculture Transportation Coalition, 22% of their members' sales are lost because they can't get cargo overseas.
4. Transportation to distribution centres (DCs) and cargo facilities
    a. Truck driver labour and container chassis shortages, along with higher fuel costs, contributing to higher rates and delays in moving goods.
    b. Warehouse space and labour shortages also adding to supply chain disruptions and delays.
    c. Carriers (both owner-operator truck drivers and asset-based carriers) are setting the price due to imbalance of supply and demand ultimately stemming from news in major port markets, leading to higher rates (see note under 2.c.).
    d. Rail network congestion further adding to the inefficient movement of goods.

*Outdated infrastructure at ports and along supply chain routes is a major factor in disruptions. Some ports are operating as they were in the 1980s – on paper and by email and no shipping portals[1]. The surge in global trade, e-commerce, and overall demand during the reopening era have left many companies scrambling, a stark contrast to the yearlong decline in orders amid the economic uncertainty and slowing global trade growth seen in the first year of the pandemic.

Current infrastructure simply cannot keep up with the demand. The current, unprecedented explosion in global trade and economic activity require newfound synergies and cooperation among government and the private sector.

Also worth noting are the more frequent and extreme weather events that result in the damage of critical trade-enabling infrastructure, such as the case in British Columbia where severe flooding has significantly impacted both ports and roadway infrastructure.

<u>Food for Thought</u>: Imagine walking into a single McDonald's and ordering 1 million big macs. The restaurant alone is unable to effectively meet the sudden surge in demand and the same is true for ports around the world.

[1] Shipping portals are websites which allow shippers, consignees and forwarders access to multiple carriers through a single site. Portals provide bookings, track and trace, and documentation, and allow users to communicate with their carriers.

This document is intended to be high level as there are many complexities beyond the scope of this overview, however it should give a sense of how entangled the problems are. The interconnected nature of supply chains across countries and their freight and transit lines results in a compounding effect as disruptions, delays, and bottlenecks arise. Unfortunately, no single policy can address this entirely. On the other hand, a number of measures can help alleviate various components of the overall problem such as labour shortage challenges and infrastructure needs. While Ontario and Canada are limited in their ability to solve the root of all global disruptions, governments can help support businesses as they navigate the challenges on the ground.

Provincial-Level Actions:

- An emergency task force consisting of government, the private sector, and local chambers to explore potential support measures, particularly for small businesses still recovering from lost revenues due to COVID, and unable to compete with larger businesses financially or logistically.
- Local manufacturing sector strategy as well as sourcing components closer to market even if not fully localized.
- Loan guarantee or other support to help smaller businesses shift to more reliable shippers.
- Government education campaign to promote the transportation industry as a viable career path (similar to current marketing campaign for skilled trades); education pathway programs and incentives in transportation sector training.
- Immigration pathways and agreements for truck driving careers; Ontario government to reach out to countries with skilled labour forces directly, to facilitate streamlined recruitment for in-demand skilled labour.
- Shop local campaigns to reduce reliance on international supply chains.
    - Longer-term infrastructure investments: Improvements to transportation infrastructure around airports to relieve road congestion and free up capacity for last mile cargo deliveries which has been exacerbated with the growth of e-commerce and expectations for same-day deliveries.
    - Investments in 'Smart Solutions' for infrastructure, air cargo, and supply chain components.

Federal-Level Actions:

- Formal supply chain infrastructure assessment to address bottlenecks along the supply chain, particularly for ports.
- A national manufacturing sector strategy coupled with an evaluation of a potential Crown Corporation steamship line.
- Other long-term actions:
    - Explore and implement digitization solutions; the need for more efficiencies and communication throughout the entire supply chain.

- Funding through federal infrastructure programs to help ensure the necessary capacity exists and runway systems at airports (particularly Pearson) continue to be resilient. Further investments in additional logistics and warehousing facilities.
- Federal National Trade Corridor Fund:
    - More funding made available to Canada's largest airport with the largest cargo capacity.
    - The fund is currently heavily focused on trade promotion and trade diversification, but more thought could be given to including supply chain resilience as a policy parameter as the government rethinks the program.

All policy measures should seek to protect against unintended consequences, such as inflationary pressures and other market disruptions. In a world in which infrastructure takes years to build or improve, Ontario is left to explore temporary support measures for businesses disproportionately impacted by the supply chain crisis. At the same time, provincial and federal governments have a responsibility to investigate pain points along Canadian supply chains and make necessary infrastructure investments to ensure businesses and consumers can access a reliable supply of raw materials and manufactured goods over the long term.

Helpful Resources:

- Understanding supply chain entities and supply chain components
- Illustration of supply chain issues (see video)
- The cause of America's supply chain disruptions
- Corporations rewriting production playbooks