MEXICO
Supply-Chain Optimization and Sustainability

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Mexico's supply chain management and optimization is a crucial aspect of the nation's domestic economy and has gained significant importance within the global supply chain. Its current role and potential for the future underscores another issue at the forefront of international trade:

supply chain sustainability.

Why does Mexico have such a critical role in the global supply chain?

1. **Location**

- Mexico's position between North and South America provides a strategic link between their markets, especially due to its **proximity to the United States**, its largest trading partner.
- Mexico's access to the **Atlantic and Pacific oceans** makes it the ideal location for exporters and investors from various continents looking to produce goods for North and South American markets.

2. **Cost-competitive manufacturing environment**

- Mexico's successful development in manufacturing has attracted multiple international companies across industries and sectors, especially those seeking to **lower production costs**.

3. **Highly skilled labor force**

- Mexico offers a **highly skilled and cost-competitive workforce**, particularly in engineering, manufacturing, and logistics.

4. **Simplified access to international markets**

- Mexico's participation in several **key trade agreements** and **international organizations** has enhanced Mexico's supply chain industry "by providing access to a range of international markets and reducing trade barriers".
- This includes the **USMCA**, the **Pacific Alliance**, the **European Union-Mexico Free Trade Agreement**, and numerous bilateral trade agreements.
- The USMCA (then NAFTA) solidified trade relations, especially within the **automobile industry**, and established modest incentives to involve Mexico in supply chains.

5. **The geopolitical "alternative" to China**

- Mexico is now seen as a potential "alternative" to China, as both the United States and European countries are making efforts to **shift some supply chains** from China to Mexico:

> *"According to reports, Mexico ended a 17-year streak and emerged as the U.S.'s top source of imports in 2023 with $476.2 billion, up 4.6% from 2022. Despite exporting $427.2 billion of goods to the U.S. in 2023, China ranked second as an import source."*

- Amidst the backdrop of trade competition and geopolitical tensions with China, the new trend known as **"nearshoring"** has made Mexico a more appealing and efficient alternative to offshoring to countries further away, simply due to quicker and cheaper transportation.
- It is important to note that Mexico's supply chain is **deeply integrated with East Asia**, especially China:
  - Mexico's manufacturing sector will more than likely remain connected to Asia and will negotiate new trade agreements rather than cut East Asia out of its supply chains.
  - China accounts for close to 30% of global manufacturing value added.

What are Mexico's Supply Chain Sustainability Challenges?

Implementing sustainable practices in the Mexican supply chain faces various challenges, especially in certain sectors and industries:

1. **High Initial Costs**
- Transitioning to sustainable practices can be very costly for some companies; this additional cost often acts as a barrier to said transition, particularly for small and medium-sized companies.
2. **Lack of unified government support**
- Lack of coherent national government support or fiscal incentives in logistics.
- Most progress has either been made privately or at the state level, which can vary widely, resulting in the absence of widespread adoption of sustainable practices.
3. **Infrastructure Needs: Modernization & Consistent Maintenance**
- A sustainable supply chain requires an adequate and well-maintained infrastructure (such as roads, ports, railways, and airports) and steady investments in green infrastructure.
- Without new and consistent investments, optimizing and creating more sustainable transport routes and reducing overall greenhouse gas emissions is difficult.
4. **Other Sociopolitical Factors**
- Mexico continues to struggle in areas related to the rule of law, labor rights, environmental protection, and corruption.

> *"Corruption is pervasive in Mexico, particularly in public procurement and services. Foreign companies face significant corruption risks, especially in the judiciary, police, and business registration processes. This entails the risk for foreign companies, if they engage in common Mexican corruption practices, to*

become guilty under anti-corruption laws of their home state, for instance such actions of a German company in Mexico are punishable under German law."

- Much like government support, Mexico is still behind in having consistent supply chain due diligence laws and needs to develop its Environmental, Social, and Governance ("ESG") standards within logistics.

Sustainability by Industry

The Mexican industries facing the most significant challenges in maintaining a sustainable supply chain are economic sectors such as automotive, agribusiness, energy, mining, and apparel.

Automotive

The automotive industry faces sustainability issues related to **resource use, emissions, and labor conditions**. Key challenges include:

- Sourcing sustainable raw materials (e.g., steel, aluminum), reducing carbon emissions within production & operational practices, and improving waste management.
- Transitioning to electric vehicles (EVs) and dealing with battery sourcing and end-of-life recycling.

Companies are currently focusing on developing sustainable logistics thanks to global and economic pressures for heightened sustainable policies that meet global standards, especially concerning production processes and transportation. Some seek to optimize their supply chain and simultaneously cut costs by recycling packaging. Others are opting for transportation by rail whenever possible rather than by truck to save energy, reduce emissions, and minimize environmental costs. Moreover, due to the highly globalized nature of the automotive industry, foreign companies and top suppliers have been more aggressive toward adopting green policies within their Mexican supply chains.

Agribusiness

Agribusiness faces sustainability concerns related to the following:

- **Water use**: Mexico's heavy reliance on water-intensive crops like avocados and berries has raised concerns about water scarcity.
- **Deforestation, soil depletion, and pesticide use**
  - Sustainable solutions are needed to address the environmental degradation caused by these crops, particularly in Michoacán and Jalisco.
  - Farms in these regions are linked to land cleared through arson, contributing to climate change and biodiversity loss.
  - There is a significant concern due to the illegal deforestation associated with expanding orchards.

Despite **sustainability claims** from producers and **certification processes**, tangible efforts to integrate sustainable practices, such as limiting deforestation, have been undermined by corruption and insufficient enforcement of environmental laws. Organic and fair-trade certifications are growing in demand, but ensuring a truly sustainable supply chain remains an ongoing challenge. Certain State governments are adopting incentives and programs promoting sustainable agricultural business practices; however, they need a comprehensive and coherent national implementation.

Energy: Oil & Gas

The oil and gas industry is inherently challenged by its environmental impact, including **greenhouse gas emissions, pollution, and land degradation**. Mexico's overreliance on fossil fuels is an ongoing challenge in balancing energy demand with sustainability goals, especially in transitioning to renewable energy sources. There has been increased pressure to transition to greener alternatives, such as green hydrogen and renewable energy, but Mexico's supply chain policies need further advancements in order to facilitate the energy transition:

- Industries with the most reliance on carbon-intensive materials and energy sources, like **steel and freight transport**, have a more challenging outlook when transitioning to clean energy due to their reliance on carbon-intensive materials and energy sources.
- Due to its **abundant renewable energy resources**, Mexico has a great opportunity to create a greener supply chain, especially in sectors like shipping and automotive.
- Companies that invest in sustainability early, such as those incorporating **green hydrogen for shipping**, are positioning themselves ahead of the curve in the future of the global energy transition.

Mining

Mining in Mexico, particularly for **silver, gold, and copper,** poses sustainability issues like habitat destruction, water contamination, and resource depletion. Mining operations are also linked to social issues, including indigenous land rights and community displacement.

Textile and Apparel

The textile and apparel industry faces sustainability challenges in terms of:

- Water use, pollution from dyeing processes, and waste.
- Labor conditions and fair wages in maquiladoras complicate efforts to create ethical and sustainable supply chains.

- Textile waste and the rise of fast fashion also exacerbate environmental problems within the supply chain.

Progress in Green Logistics

Even if Mexico is far from having the ideal sustainable supply chain, there have been developments in green logistics solutions and green tech integrated into the supply chain, especially in recent years:

- **Growing awareness by many companies operating in Mexico**:

> *"Stakeholders are increasingly holding companies to their GHG commitments. In June 2023, 46 percent of surveyed global institutional investors listed navigating the low-carbon transition as their most important investment priority in the next three years"*

- Companies are realizing that sustainable practices could eventually **optimize their logistics and even cut costs in the long run**, therefore investing time and money towards shifting company policies.
- Companies are adapting their practices in order to **meet international requirements.**
- This **increased collaboration between suppliers, partners, and customers** to promote and implement environmental standards and criteria throughout the supply chain.
- **Implementation of advanced technologies -** such as electric vehicles, fleet management systems, and tracking and monitoring solutions.
- **Growing government support** aimed at promoting sustainability
  - "**Guidelines for Sustainable Supply Chains" -** In 2015, **Mexico's Ministry of Environment and Natural Resources** (SEMARNAT) developed a framework for companies to integrate sustainability into their supply chain operation. These guidelines address environmental management, social responsibility, and economic sustainability.
  - "**Mexican Alliance for Sustainable Production and Consumption" (AMCES)** - The same ministry has partnered with businesses and NGOs to promote sustainable supply chain practices. The alliance works to enhance Mexico's supply chains' environmental and social performance by promoting sustainable practices and offering technical support to businesses.
  - **A new clean energy target of 35% by 2024** - encourages companies operating in Mexico to invest in renewable energy sources and integrate them into their supply chain.
- **Mexico's potential as a zero-carbon shipping fuel hub**
  - According to the World Economic Forum, Mexico has great potential for becoming a zero-carbon shipping fuel hub:
    - Its abundant supply of renewables facilitates zero-carbon production for local supply and export.
    - Timing-wise, a transition to zero-carbon shipping is ideal for Mexico:

- The International Maritime Organization is “calling for a **50% decrease in international shipping emissions by 2050 compared to 2008 rates**”
- “Stakeholders across the maritime value chain are committed to **commercializing and scaling zero-carbon vessels and fuels by 2030**”.

- Mexico’s access to busy shipping routes both in the Pacific and Atlantic oceans makes it the ideal location for the global transition in shipping through green hydrogen-derived fuels and clean electricity.

However, many companies still struggle to reduce their **Scope 3 emissions**. These types of emissions account for the vast majority of the carbon footprint in supply chains:

“These emissions often stem from upstream suppliers, and coordinating efforts across a vast network of partners is complex. Efforts to decarbonize often face hurdles such as limited access to sustainable raw materials and high costs for greener production alternatives.”

Many new products and services target companies seeking to improve efficiency and reduce their emissions throughout their supply chain. Once again, implementing these solutions can have a high initial cost, but companies are realizing they can generate significant savings and cut back on environmental costs in the long term.

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