

DRISI

CALTRANS DIVISION OF RESEARCH,
INNOVATION AND SYSTEM INFORMATION

Research Notes

Planning, Policy
and
Programming

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Project Title:
Dynamic Monitoring of Supply
Chain Resilience

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Dynamic Monitoring of Supply Chain Resilience

Development of Public Dynamic Spatio-Temporal Monitoring and Analysis Tool of Supply Chain Vulnerability, Resilience, and Sustainability

WHAT IS THE NEED?

In the past several years, geopolitical events have significantly affected the movement of goods around the world. Today, we are still experiencing major issues in the freight system, with gridlock at the seaports, container congestion, lack of warehouse space, and labor shortages, among others.

In the first year of the COVID pandemic, 2020, about 19% of all supply chains in the U.S. were stopped and sales decreased. About 20% of supply chain businesses reported congestion in ports and the unloading of good from one ship to another ship as the main problems. More information is needed about the factors that cause supply chain disruptions and how we can use knowledge of current events to forecast adverse impacts to the transportation system.

WHAT ARE WE DOING?

This project seeks to collect and analyze text to gather data on worldwide events that directly proceeded or are contemporaneous with recent supply chain disruptions. Researchers will update data processing, text analysis and relationship modeling tools and create a dashboard to display the results. After further testing, demonstration, and incorporation of feedback, researcher will provide analysis and recommendations in a final report.

WHAT IS OUR GOAL?

The proposed tool is expected to provide public information for the decision-making process of different stakeholders involved in the supply chain and provision of transportation facilities (e.g., Caltrans, planning agencies, and the freight sector).



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WHAT IS THE BENEFIT?

The tool can help identify best practices to handle supply chain issues, based on the resilience and sustainability strategies implemented at other locations.

WHAT IS THE PROGRESS TO DATE?

The kick-off meeting was conducted on August 7, 2023. We have identified new data sources and tested procedures for the online tool. A progress meeting has been scheduled for December 6, 2023, for the panel to discuss draft deliverables.

IMAGES



Image 1: What is Supply Change Management?