Transportation, Logistics & Minnesota Economic Growth

Trends Shaping Freight in Minnesota & Related Analytics

Dr. John Pournoor, Government Analytica

Government Analytica Expertise

Thousands of projects spread across 35 years and 40 countries

INFRASTRUCTURE (electricity, water, transportation, mining, etc.)

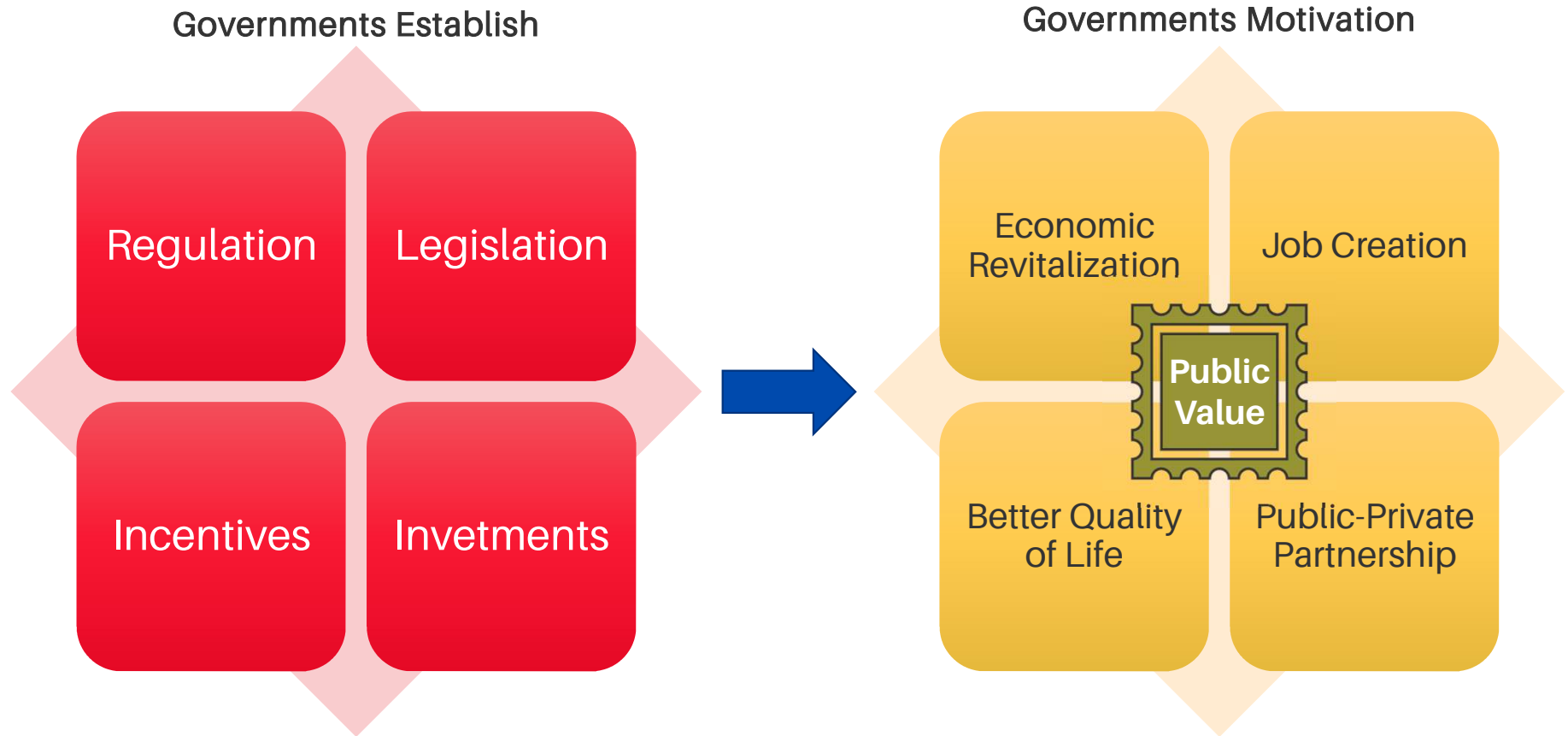**HEALTHCARE** (medical devices, pharmaceuticals, diagnostics, informatics, etc.)

EMERGENCY PREPAREDNESS/RESPONSE (mass casualty events, pandemics, etc.)

SAFETY & SECURITY (public safety, national ID cards, passports, etc.)

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Governments & Public Value

Governments Establish

Governments Motivation

Regulation	Legislation
Incentives	Invetments

Economic Revitalization	Job Creation
Better Quality of Life	Public-Private Partnership

Public Value

Agenda

- *Megatrends influencing freight, transportation*
- *U.S. pivot to supply chain resilience*
- *Infrastructure Act, Chips Act,*
- *Analytical approaches to evaluate public policy options*

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"Trends, like horses, are easier to ride in the direction they are going."
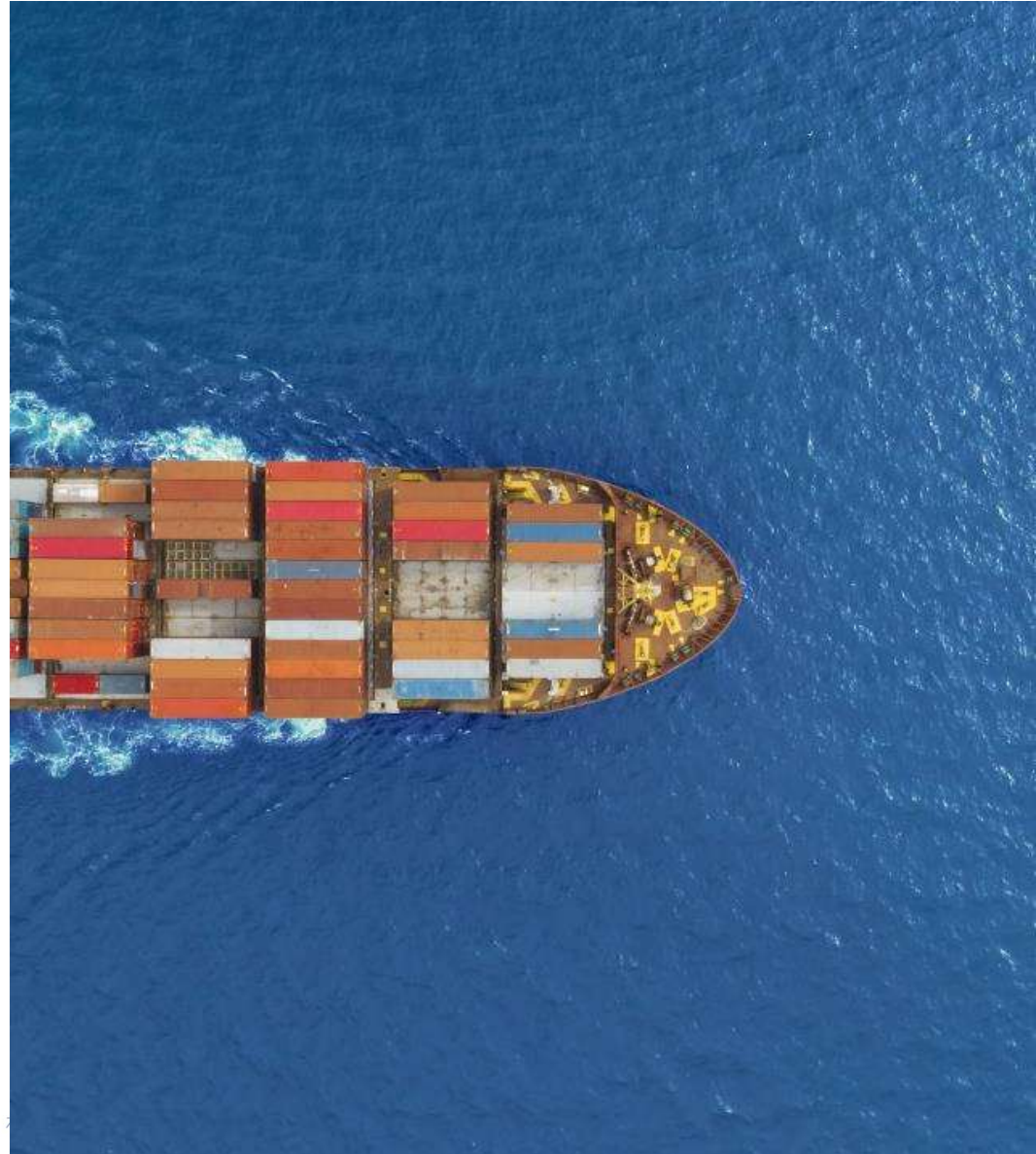
John Naisbitt, who coined the word "megatrends"

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Megatrend 1 - Weary of globalization, countries put a premium on access to their internal markets

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What does it mean for Minnesota?

Track trade policies, export/import regulations and legislation of Minnesota's major trading partners
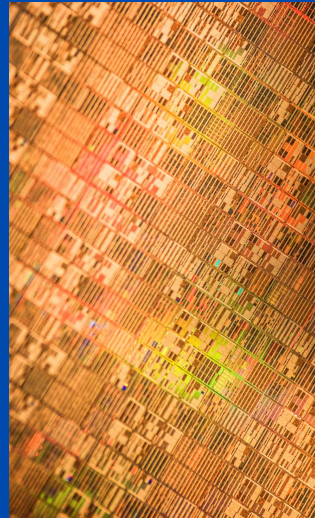
Putting a Premium on Market Access

New Tarrifs & Tax Regimes

Incentives for On-Shoring & Re-Shoring

Technology Sharing Controls

Domestically Produced Manufacturing Content

New Bilateral Free Trade Agreement Models

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3 Intertwined Trends

MN Economic Activity

$412 Billion

- In-State
- Interstate
- Exports

MN Freight Network

LEGEND

Freight Facilities
- Agriculture, Forestry, Fishing and Hunting
- Mining, Quarrying, and Oil and Gas Extraction
- Utilities
- Construction
- Manufacturing
- Wholesale Trade
- Retail Trade
- Transportation and Warehousing

Lake Superior

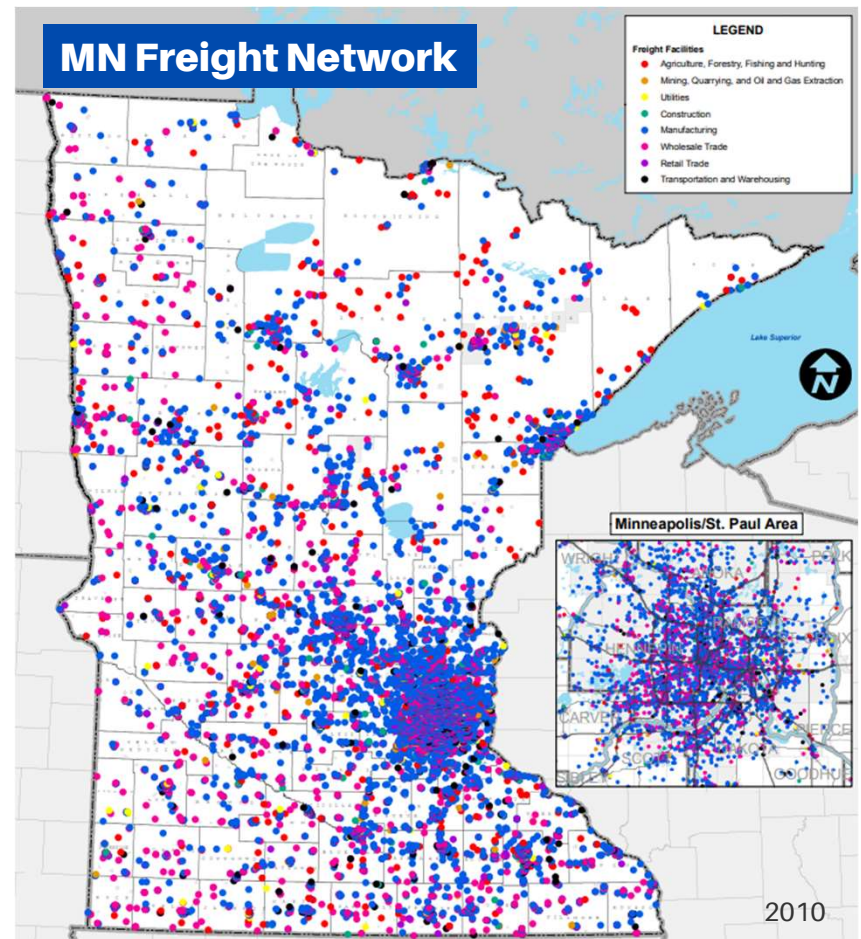Minneapolis/St. Paul Area

2010

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MN Economic Activity

$412 Billion

In-State

Interstate

Exports
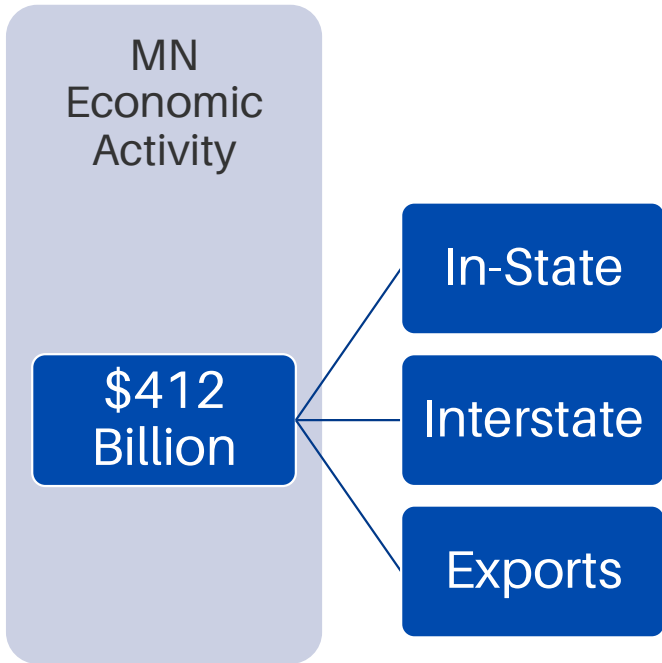
Table 4.1 Modal Usage of Minnesota's Freight-Related Industries

| (NAICS) Industry	Highway	Rail	Water	Air	Pipeline
(11) Agriculture, Forestry, Fishing and Hunting	●	●	●	○	○
(21) Mining	●	●	◐	○	●
(22) Utilities	●	●	◐	○	●
(23) Construction	●	◐	○	○	○
(31-33) Manufacturing	●	●	○	◐	○
(42) Wholesale Trade	●	●	○	○	○
(44-45) Retail Trade	●	◐	○	◐	○
(48-49) Transportation and Warehousing	●	●	○	◐	○

Key: Less important ○ ◐ ● More Important

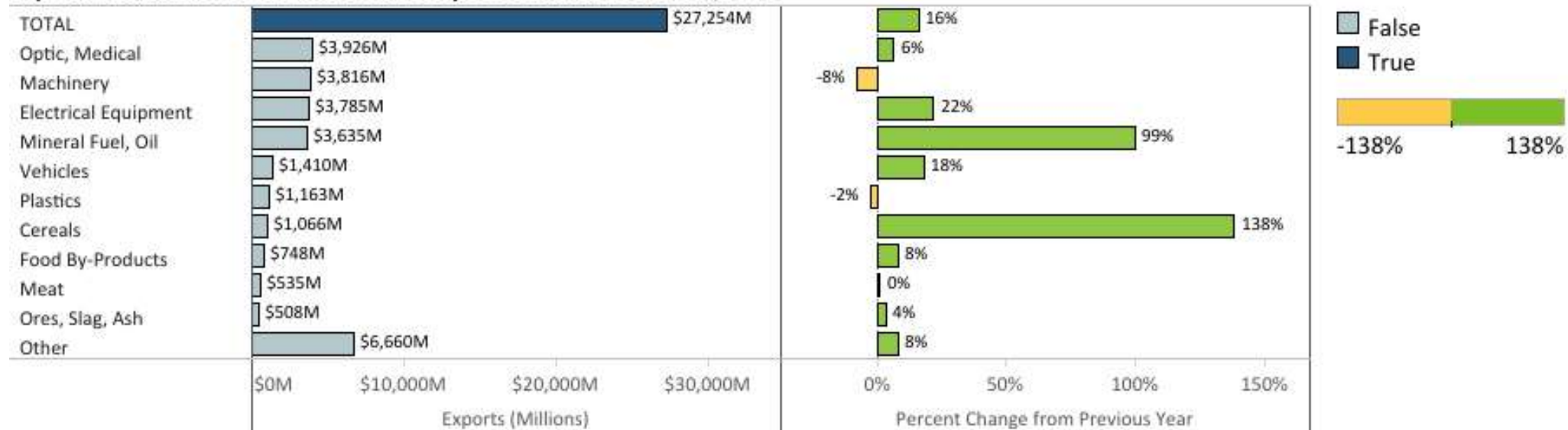Source: InfoUSA, 2014

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Minnesota Exports – By Geography

Exports and Trends for Minnesota's Top 10 Markets, *2022*
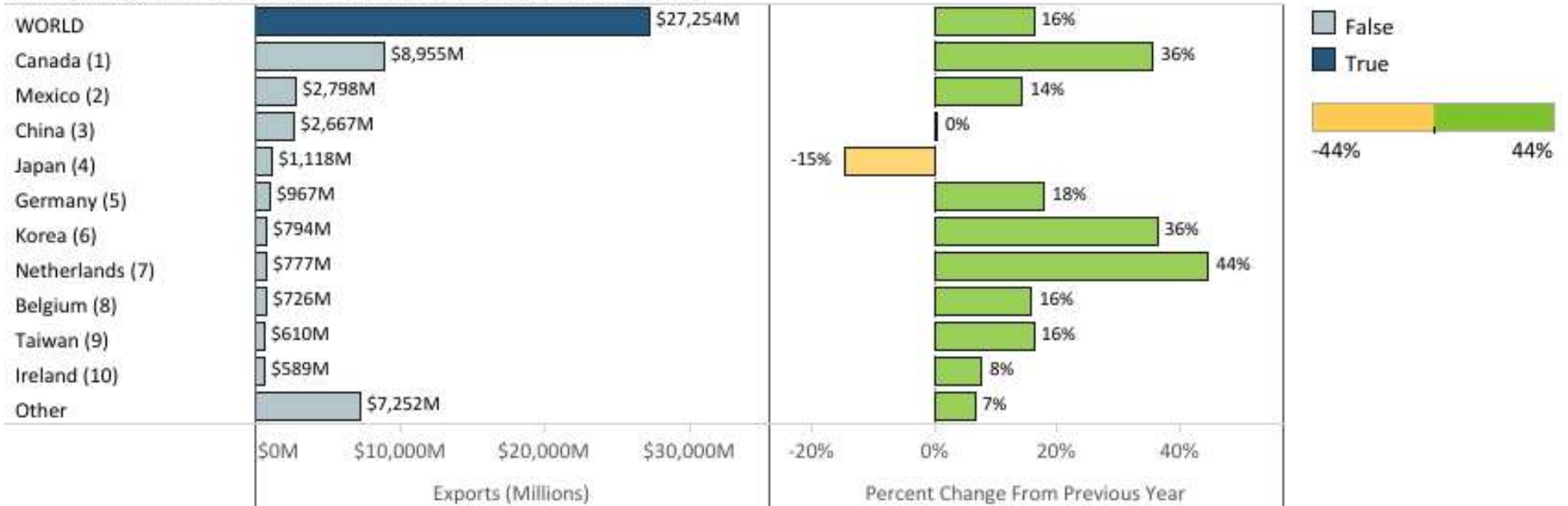
Minnesota Exports – By Product

**Exports and Trends for Minnesota's Top 10 Products to *World, 2022***

Product	Exports (Millions)	Percent Change from Previous Year
TOTAL	$27,254M	16%
Optic, Medical	$3,926M	6%
Machinery	$3,816M	-8%
Electrical Equipment	$3,785M	22%
Mineral Fuel, Oil	$3,635M	99%
Vehicles	$1,410M	18%
Plastics	$1,163M	-2%
Cereals	$1,066M	138%
Food By-Products	$748M	8%
Meat	$535M	0%
Ores, Slag, Ash	$508M	4%
Other	$6,660M	8%

False
True

-138%   138%

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Megatrend 2 - Governments will invest in national economic sectors with a high global competitive advantage

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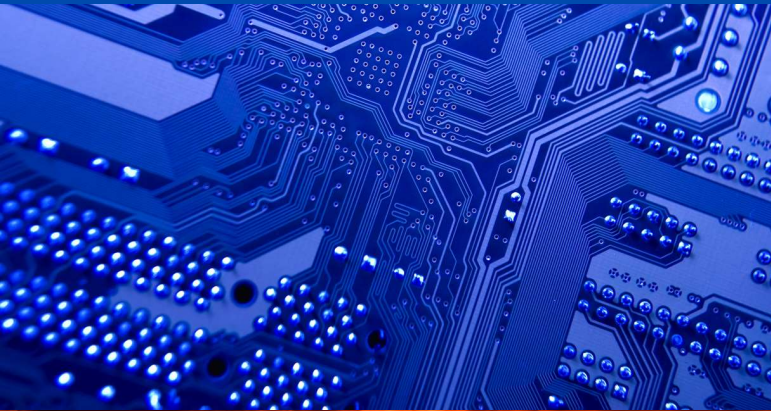
Biden Administration

Trade Policy

↓
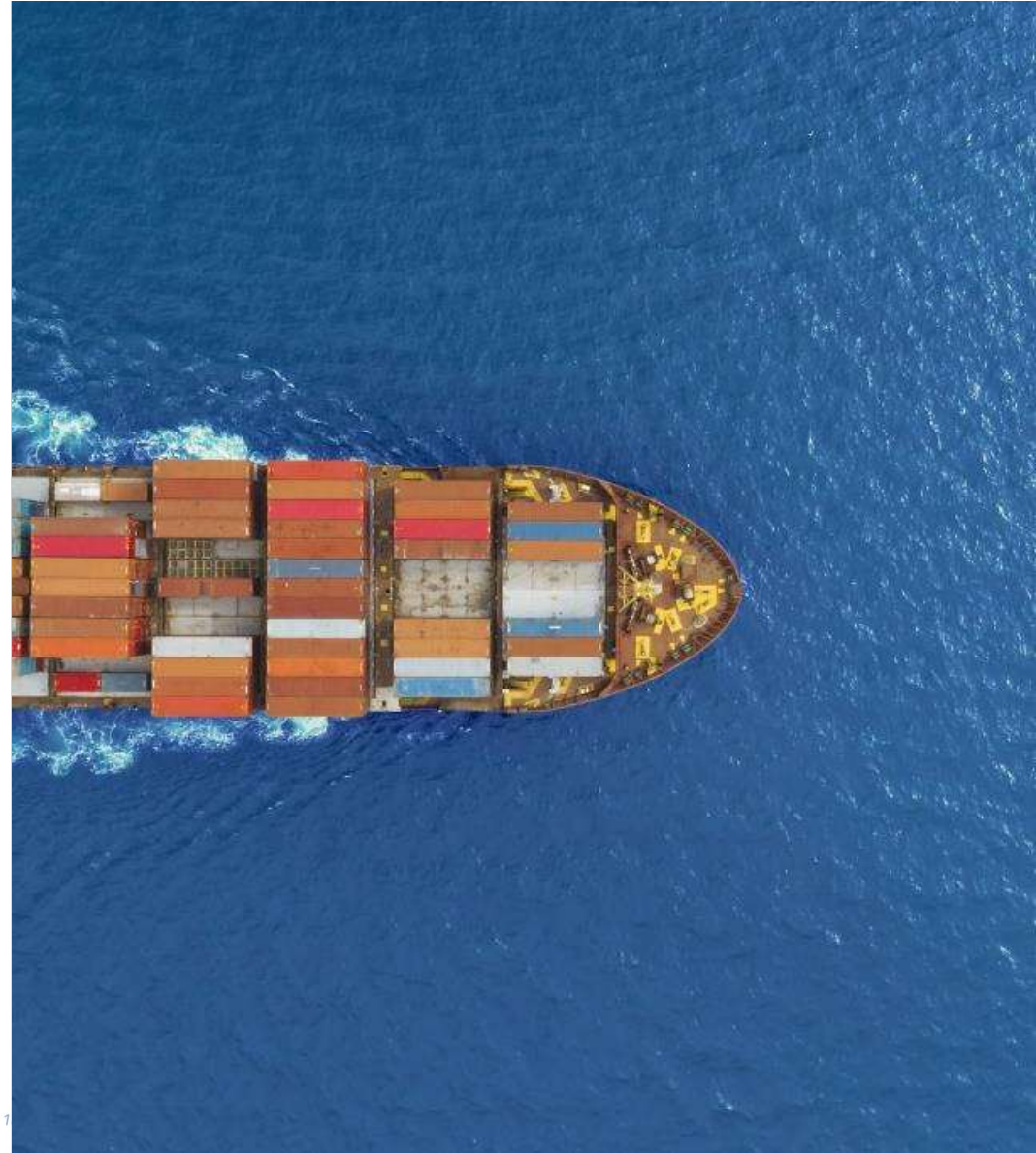
Standing up for Workers' Rights

Accelerating Decarbonization and Promoting Sustainable Environmental Practices

Supporting U.S. Agriculture

Bolstering Supply Chain Resiliency (EO14017)

Combatting the COVID-19 Pandemic

Megatrend 3 - Governments will invest to diversify sources of supply to ensure a more resilient economy

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Supply Chain Resilience
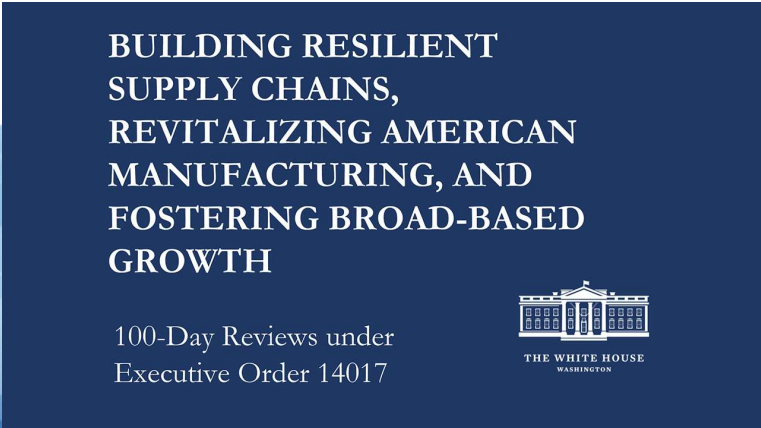

UK

Germany

Japan

U.S.

China

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"

The future is already here, it's just not evenly distributed.

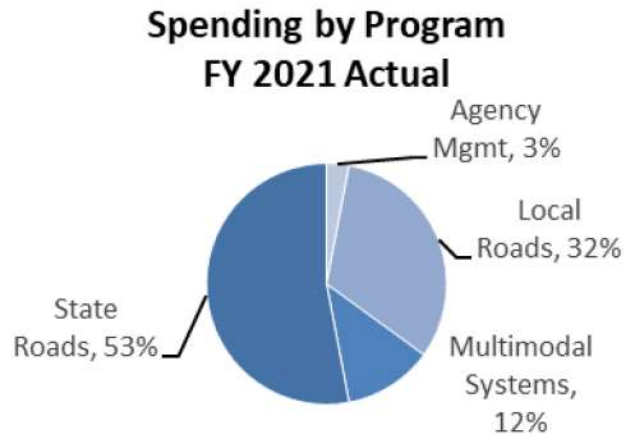John Gibson

MNDOT Transportation Outlook

AT A GLANCE

- Over 145,000 centerline miles (single roadway, regardless of the number of lanes) including trunk highways and local roads
- 4th largest roadway system in the nation
- 4,928 bridges greater than 10 feet in length on Trunk Highway routes (including railroad, pedestrian, and other structures)
- More than 91 million vehicle miles driven on average every day on the state highway system
- 360 construction projects planned in the FY22-23 biennium
- $30-33 billion in planned investments for state highways over the next 20 years (MnSHIP)
- 5,105 full-time equivalent employees as of FY22
- Truck freight traffic projected to increase by 10 percent over the next ten years

MnDOT works with our partners to support:

- 3 active Lake Superior and 4 Mississippi River system ports
- 34 transit providers serving all 80 non-metro counties
- 133 publicly owned state-funded airports
- 4,420 track miles serving 21 railroad companies, Northstar commuter, and Amtrak passenger service

Federal Infrastructure Act Will Add Funding

Spending by Program FY 2021 Actual

- Agency Mgmt, 3%
- Local Roads, 32%
- Multimodal Systems, 12%
- State Roads, 53%

Spending includes Trunk Highway fund debt service transfer
Source: Budget Planning & Analysis System (BPAS)

Historical Spending

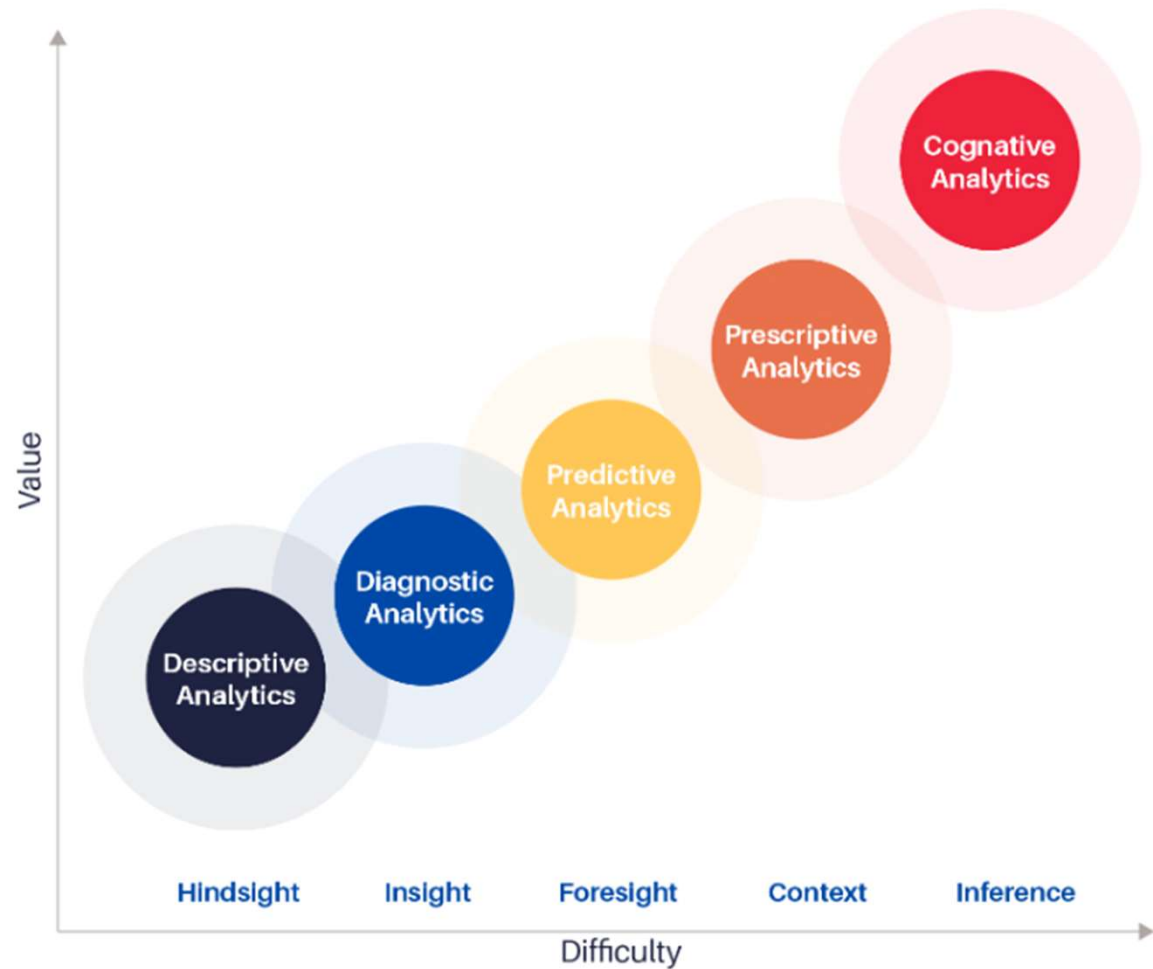☐ Other Funds ■ Federal Funds ■ General Fund
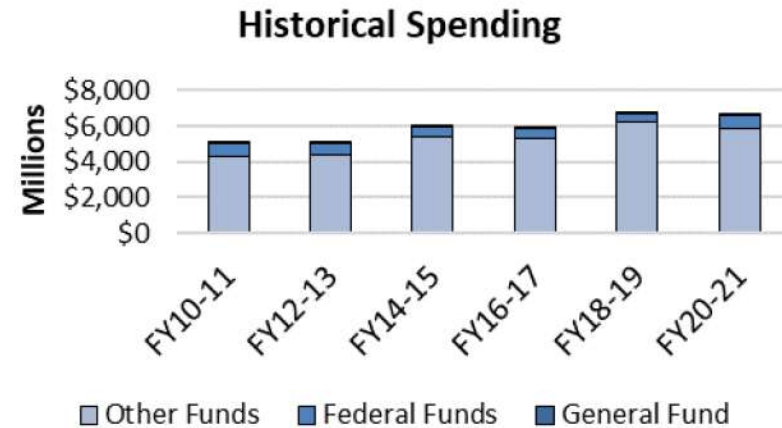
Spending includes Trunk Highway fund debt service transfer
Source: Budget Planning & Analysis System (BPAS)

Attracting Investment to the State

Real GDP: Percent Change at Annual Rate, 2022:Q2–2022:Q3

Quintile percent changes
- 3.9% to 8.7%
- 3.2% to 3.9%
- 2.2% to 3.2%
- 1.3% to 2.2%
- −0.7% to 1.3%

U.S. percent change = 3.2%
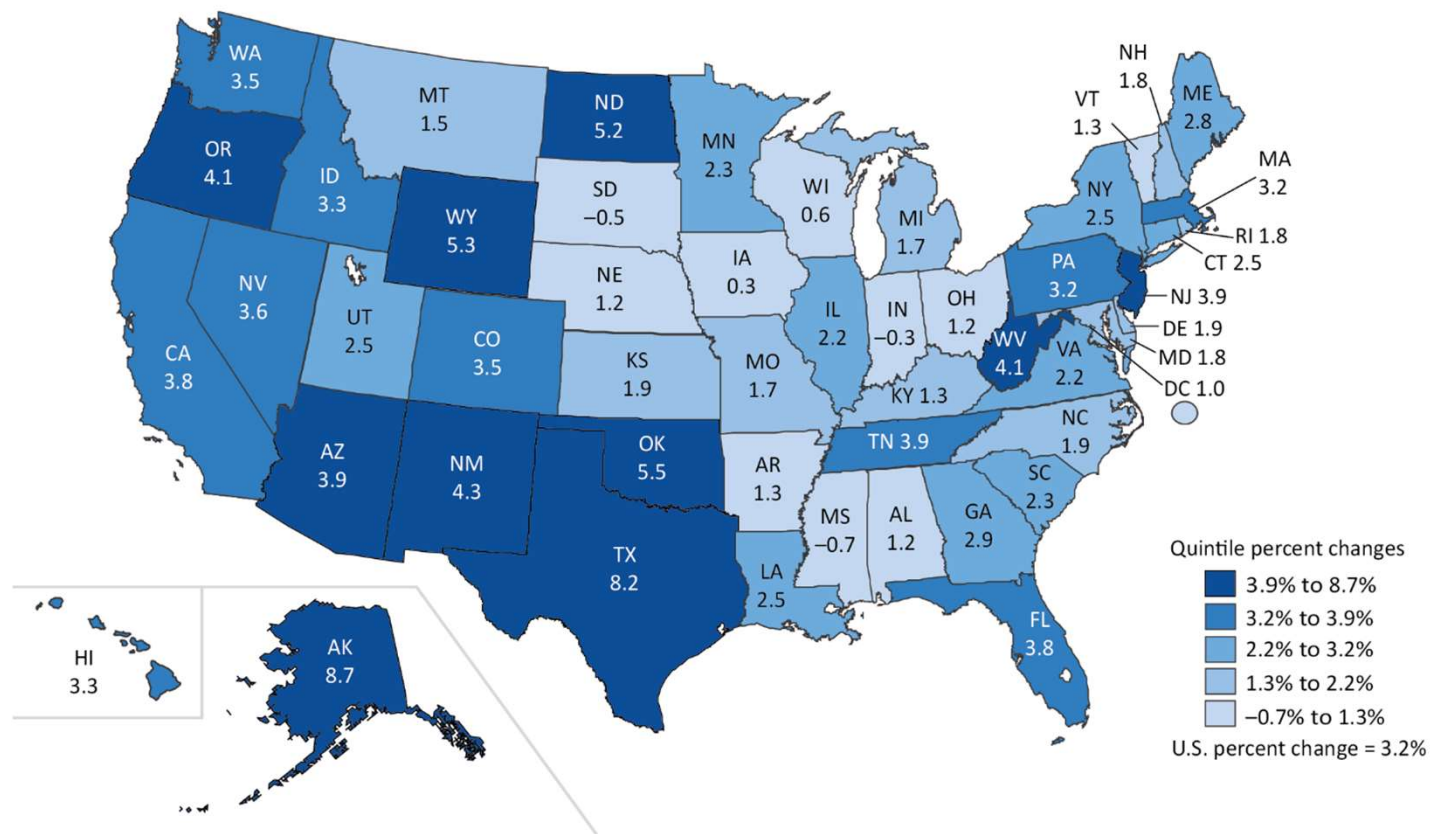
What type of analytics can we use when we do not have a complete data set?

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Government Analytica System

⬠	GAR	GovAn Radar ™	Tracking over 400 global influential multilateral organizations, think tanks, foundations, associations, and NGOs for early insights and trend-spotting
🧠	GKB	GovAn Knowledgebase ™	Rigorously capturing major world economies' national, regional, and major cities: development plans, policies, legislation, and regulations on population, economy, trade, industry, public health, infrastructure, safety, and security
🌎	GWD	GovAn World Data ™	Continuously datamining the latest national, regional, and municipal statistics from countries covering 80% of global GDP ready for use in our analytics
💻	GPV	GovAn Public - Value Analytics ™	A compendium of our analytical tools and outcome models customized to showcase the superior public value and positive outcomes of our client proposals to governments, policymakers, and communities

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Analytica Strategies for Public Policy

Hypothetical: We have $100 million investment dollars in improving freight to make Minnesota a more desirable destination for investment in infrastructure. Which transportation mix of options will increase the likelihood of a positive outcome?

- **Use of surrogate information in absence of accurate data**
  - Localities and geographies in the U.S. with similar stage of economic and transportation development.

- **Break-Even Analysis**

  - Example: New Air Transport Route

- **Monte Carlo Simulations for Sensitivity Analysis**

  - Example: Multimodal Investment Mix

3 Intertwined Trends

Thank You

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Government Analytica mines the world of Government data from a wide array of public domain sources.

We organize this information for applications in technology, healthcare, agriculture, infrastructure, urbanization, mobility, safety, and security.

Government Analytica's tools and techniques are applied to this rich pool of information to highlight the superior public value and amplify the merits of client proposals to policymakers.

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Top 12 Geopolitical Megatrends

Executive Summary

For Strategy & Portfolio Planning

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