

SMART BORDERS: THE KEY TO MORE RESILIENT INTERNATIONAL TRADE AND CROSS-BORDER TRANSPORTATION

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**TRB 2023 – Standing Committee on
International Trade and Transportation**

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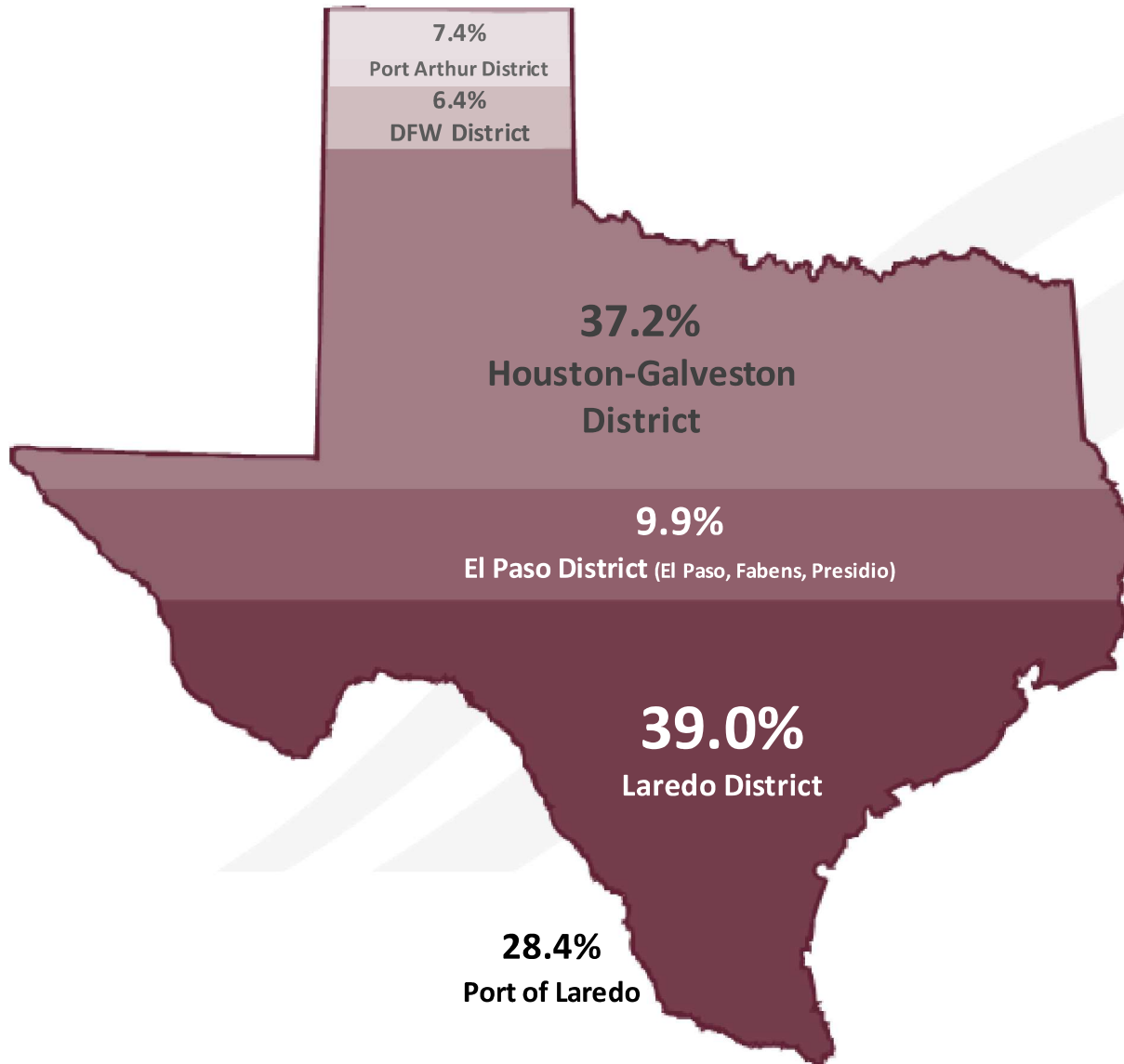
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2022 U.S. WORLD TRADE

Through Texas Ports of Entry (Jan-Nov)



28.4%
Port of Laredo

\$967.6B
Total U.S. Trade
to the world
through TX POE

\$474B
49% through TX-MX
Border POE's

\$275B
28.4% through
Laredo POE

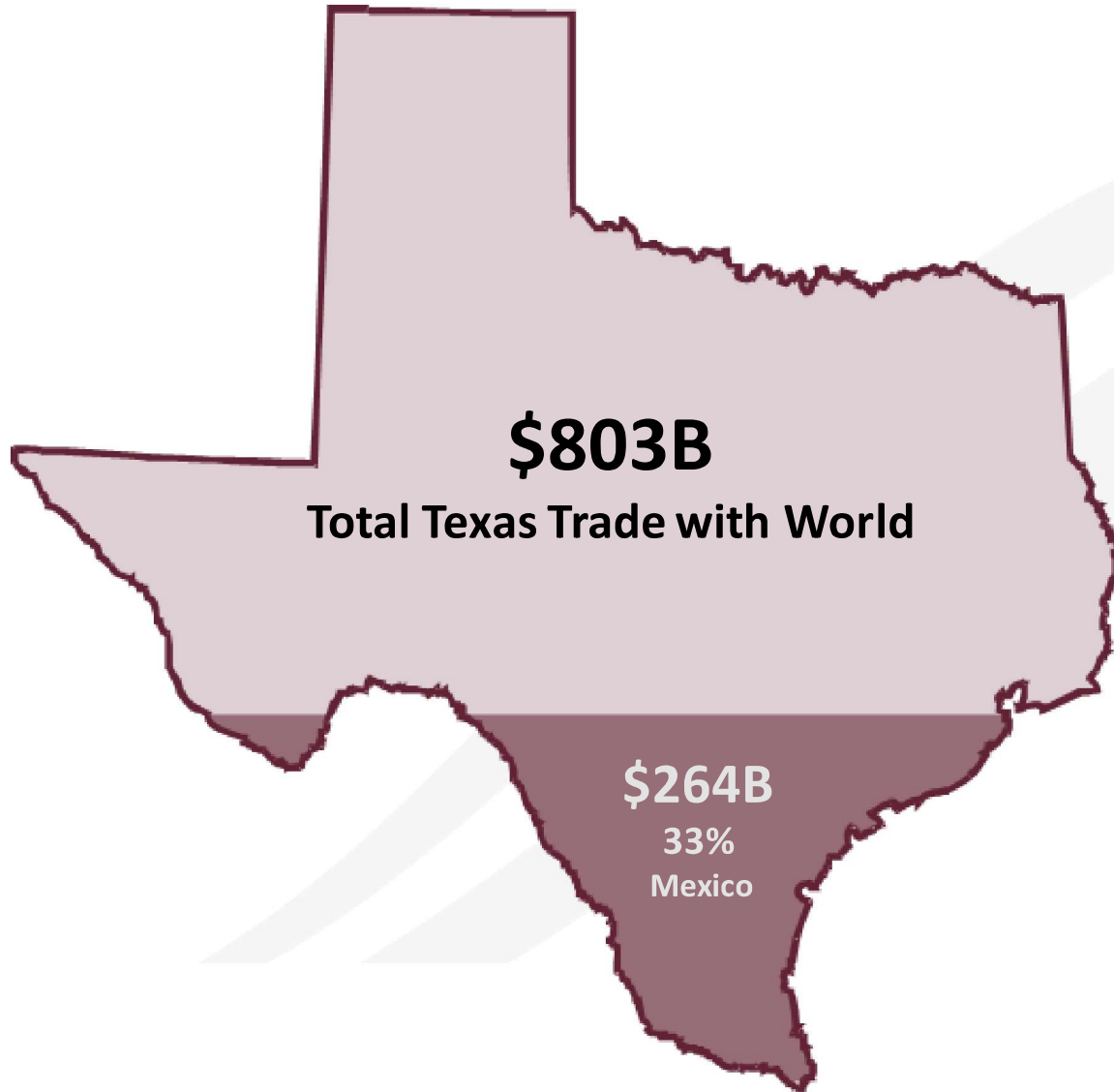
Laredo Customs District :

Laredo, Hidalgo/Pharr, Brownsville, Edinburg Airport, Progreso, Rio Grande City, Roma, Valley International Airport (Harlingen), Eagle Pass and Del Rio

Source: U.S. Census, USA Trade

2022 Texas State Trade

Exported and Imported Goods from the State of Texas (Jan-Nov)



**Mexico is Texas #1
Export and Import Market**

\$130.3B
2022 Texas Imports from Mexico

\$133.5B
2022 Texas Exports to Mexico

Trade With Mexico	
\$56.88 B	Mineral Fuel, Oil, etc., Bitumin
\$53.9 B	Nuclear Reactors, Boilers, Machinery
\$48.1 B	Electrical Machinery
\$27.0 B	Vehicles except Railway/Tramway
\$9.82 B	Plastics
\$7.09 B	Optic, Photo, Medical

2022 Top 5 U.S. Ports of Entry

By Total Import/Export Trade Value



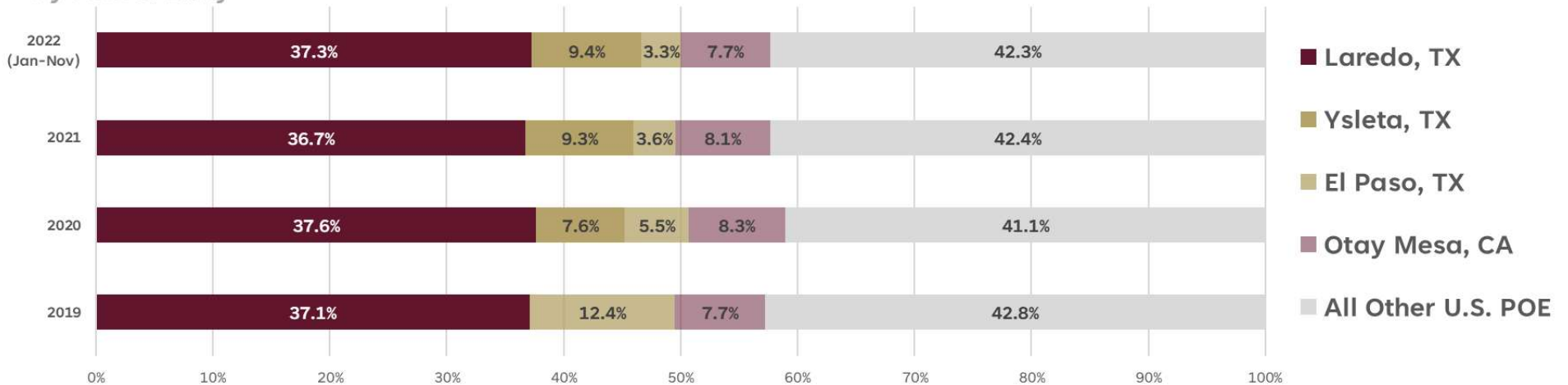
28% of Total U.S. Trade is handled through the Top 5 Ports.
(1.35 Trillion Dollars)

US Land Ports of Entry: Essential Facilitators of US-Mexico Trade

- **300+** Land Ports of Entry
- Land ports of entry account for over **70%** of US-Mexico trade by value.

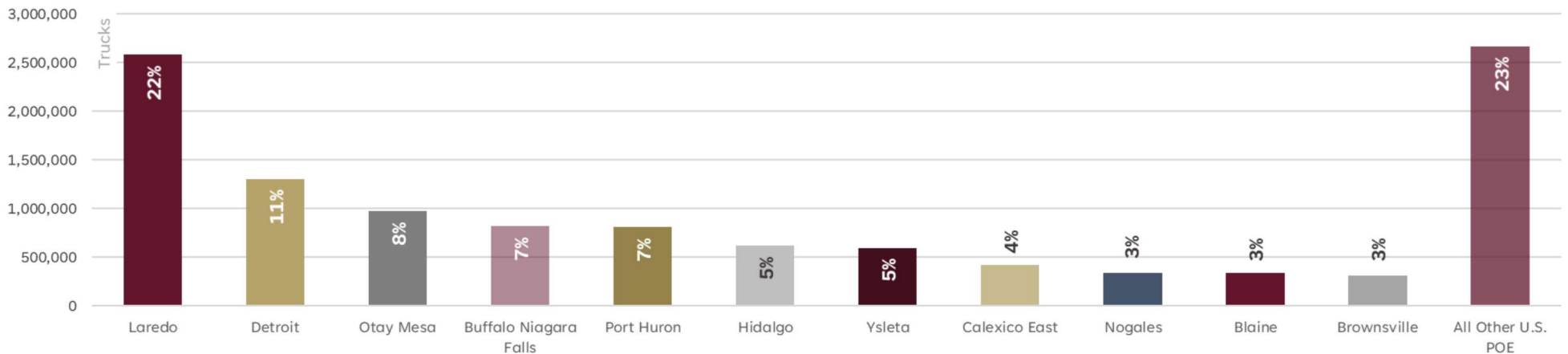
Share of Total U.S.-Mexico Trade

by Port of Entry



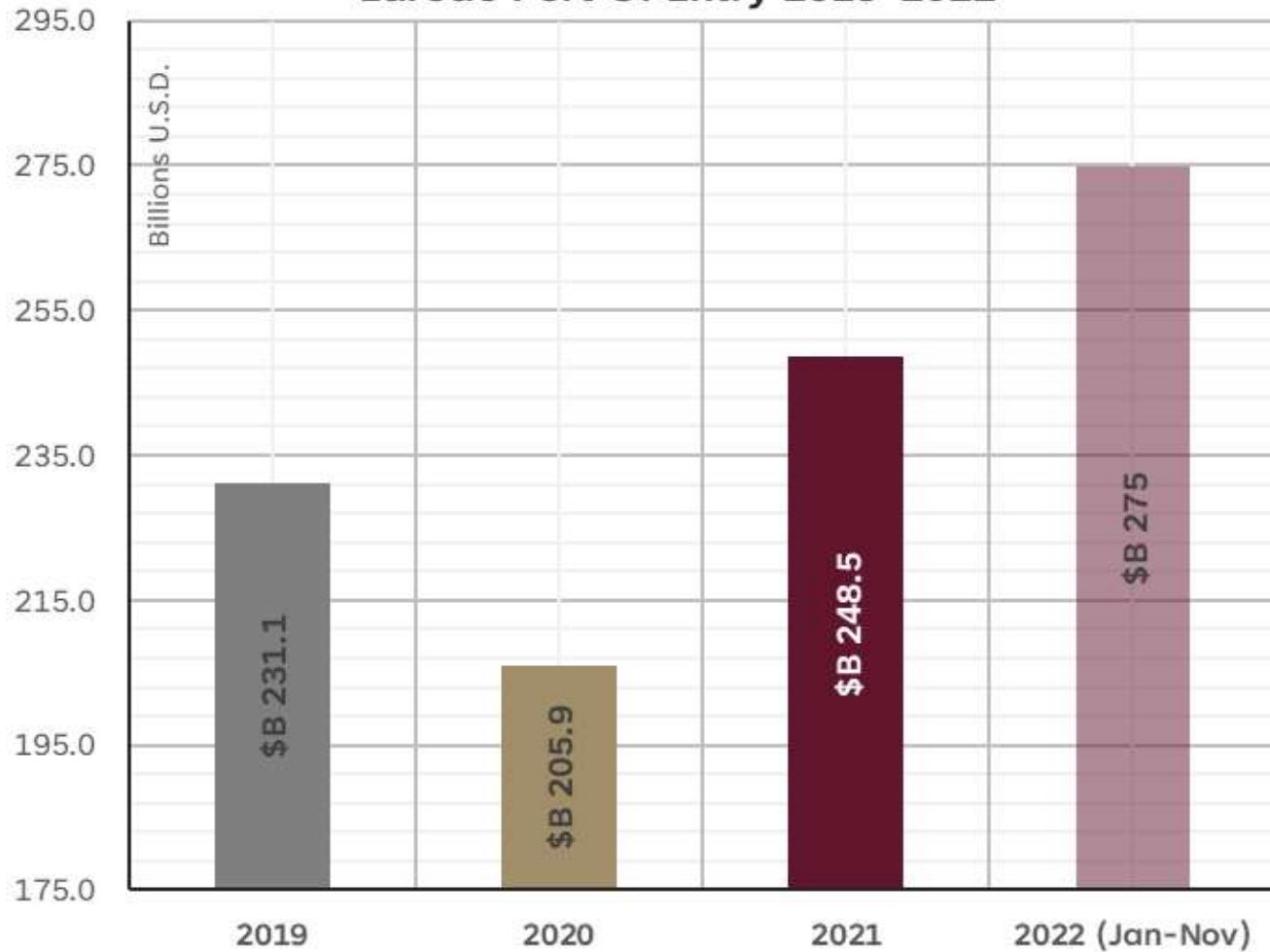
US Land Ports of Entry: Essential Facilitators of US-Mexico Trade

2022 Share of Total Truck Crossings Into U.S.
by Port of Entry



Port Laredo: The crown jewel of LPOEs

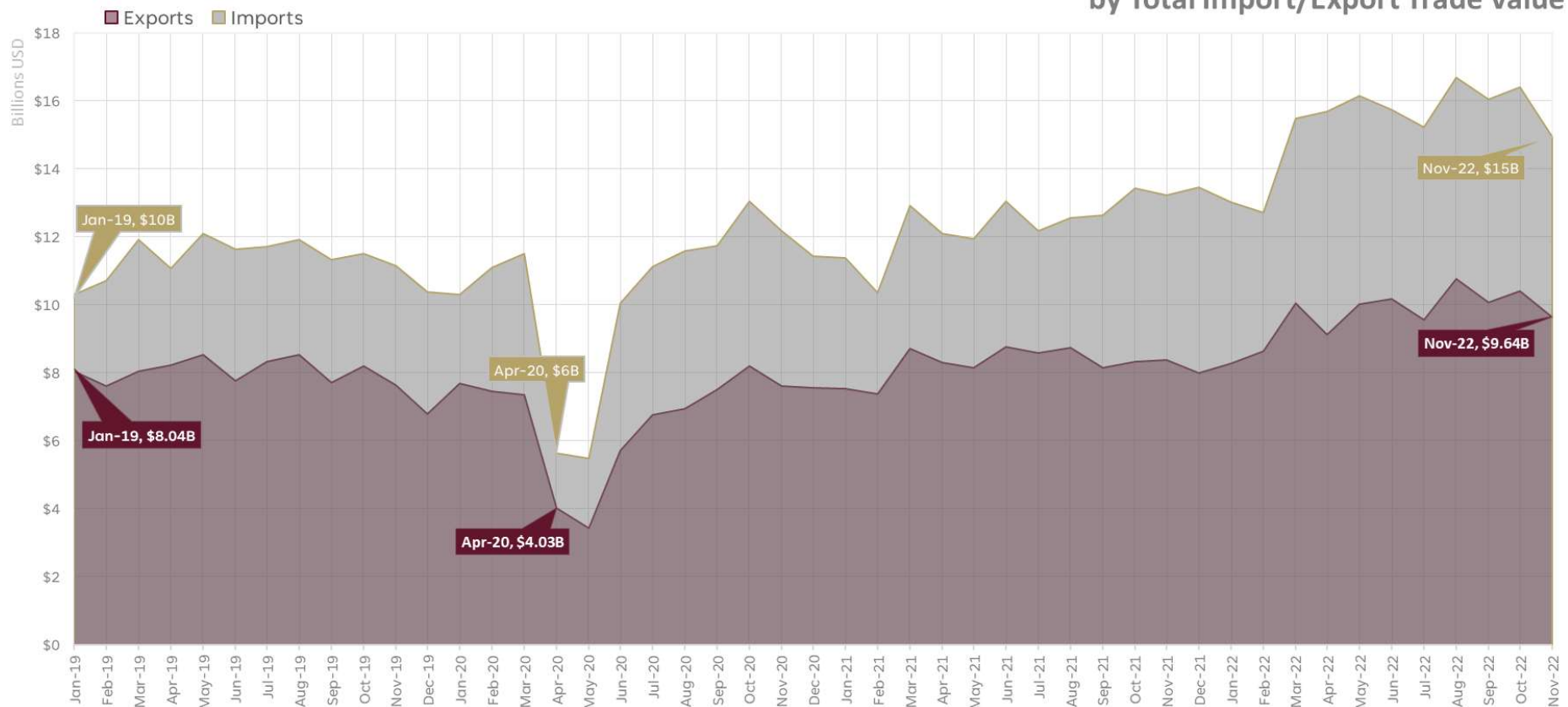
Total Trade Value
Laredo Port Of Entry 2019-2022



Source: U.S. Census Bureau: Economic Indicators Division.
Analysis by: Texas Center for Border Economic and Enterprise Development

Port Laredo: The crown jewel of LPOEs

Port of Laredo Trade Trend by Total Import/Export Trade Value



Source: U.S. Census Bureau: Economic Indicators Division.
Analysis by: Texas Center for Border Economic and Enterprise Development

The background features a dark red overlay on a blurred image of a financial spreadsheet and a line graph. The spreadsheet contains various numerical values, some with upward-pointing triangles, suggesting a positive trend. The line graph shows a fluctuating line with a general upward trajectory.

Nearshoring: A Boom for US-Mexico Cross-Border Flows?

Nearshoring: potential opportunities for increased exports, by country
Trade in goods only - US\$ millions

COUNTRY	Quick Wins – United States	Intra-LAC Quick Wins	Medium-Term Opportunities	Total
Argentina	890.7	1518.0	1497.8	3906.5
Bahamas	33.2	23.8	119.9	177.0
Belize	5.9	6.3	31.7	43.9
Bolivia	50.5	60.8	14.1	125.3
Brazil	4153.0	3144.3	546.8	7844.1
Barbados	9.7	42.8	8.1	60.6
Chile	665.8	516.0	641.1	1822.9
Colombia	1498.5	886.9	188.4	2573.8
Costa Rica	918.1	539.3	87.4	1544.8
Dominican Republic	1362.9	150.2	67.6	1580.7
Ecuador	482.0	285.8	72.8	840.7
Guatemala	436.4	293.8	55.5	785.7
Guyana	23.7	370.1	6.2	400.0
Honduras	745.1	418.7	79.0	1242.8
Haiti	237.2	11.4	4.4	253.1
Jamaica	84.9	25.8	27.8	138.5
Mexico	29679.4	2628.2	2970.6	35278.2
Nicaragua	473.3	78.2	17.0	568.5
Panama	81.3	549.2	171.5	802.0
Peru	792.0	498.0	128.4	1418.5
Paraguay	43.9	181.1	26.3	251.3
El Salvador	686.4	343.6	19.9	1049.9
Suriname	25.0	18.7	14.8	58.5
Trinidad and Tobago	87.9	304.5	84.3	476.7
Uruguay	69.3	369.5	89.4	528.2
Venezuela	218.4	48.7	53.8	320.9
Latin America and Caribbean (LAC)	43754.4	13313.7	7024.9	64093.0

TOTAL NEARSHORING OPPORTUNITIES BY COUNTRY ADDITIONAL EXPORTS OF GOODS (M: US\$ MILLIONS, B: US\$ BILLIONS)



SMART BORDERS

200 69.00 ▲

1 756.2 ▲

1 747.5 ▲

300 7.56 ▲

2,000 7.56 ▲

20,000 19.00 ▲

100 135.00 ▲

500 135.00 ▲

100,000 142 ▲

45,000 28.75 ▲

100 28.75 ▲

400 40.75 ▲

200 9.25 ▲

2 702.1 ▲

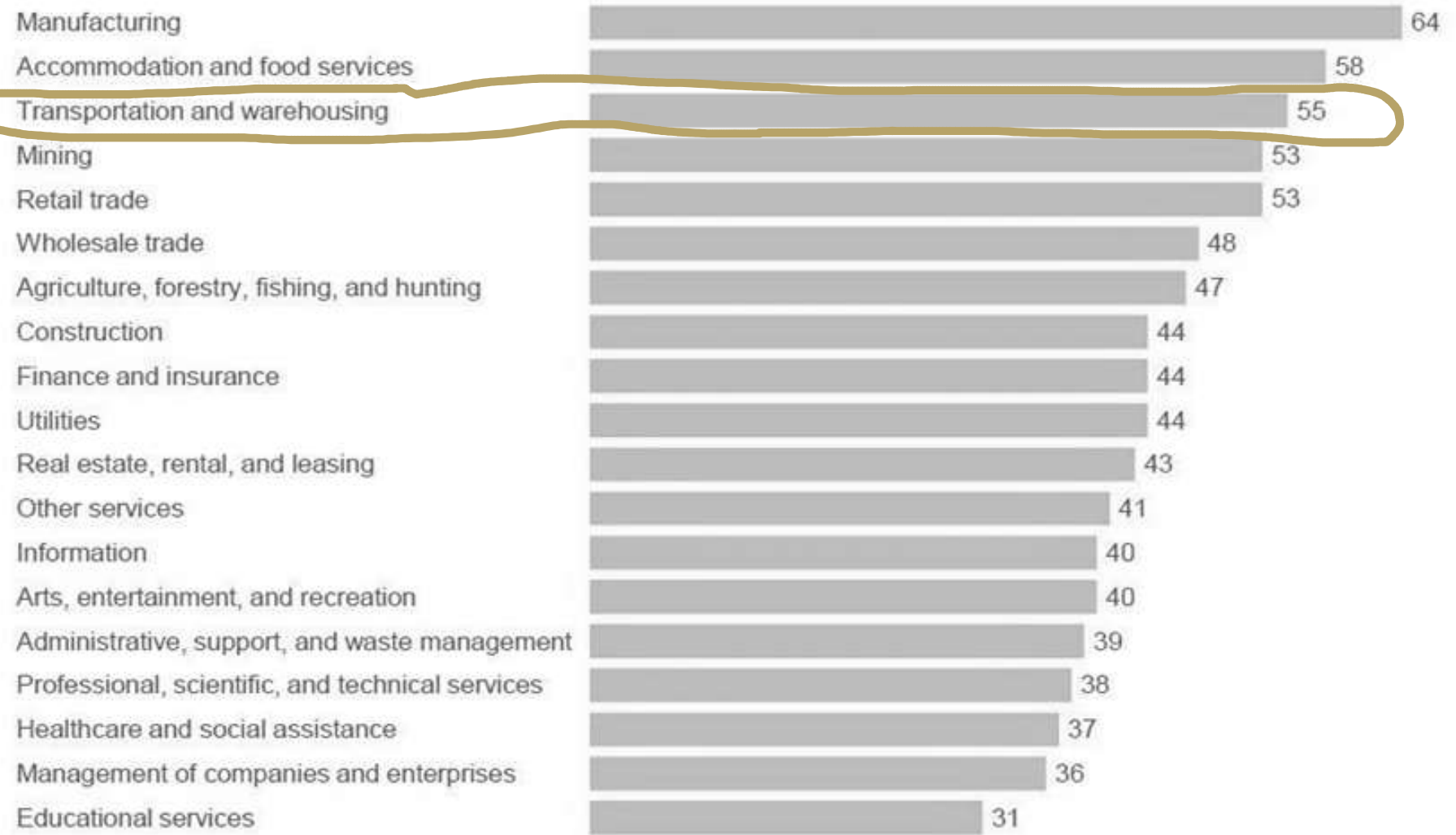
32,000 1.8 ▲

12,800 3.8 ▲

AUTOMATIZATION BY SECTORS

Impact of automation by industry in the United States

FTE weighted % of technically automatable activities by industry in the United States



1 We define automation potential by the work activities that can be automated by adapting currently demonstrated technology.

SOURCE: MGI Global Automation Impact Model; IMF; WTO; OECD; UNCTAD; McKinsey Global Institute analysis

LOGISTECHS - IMPACT

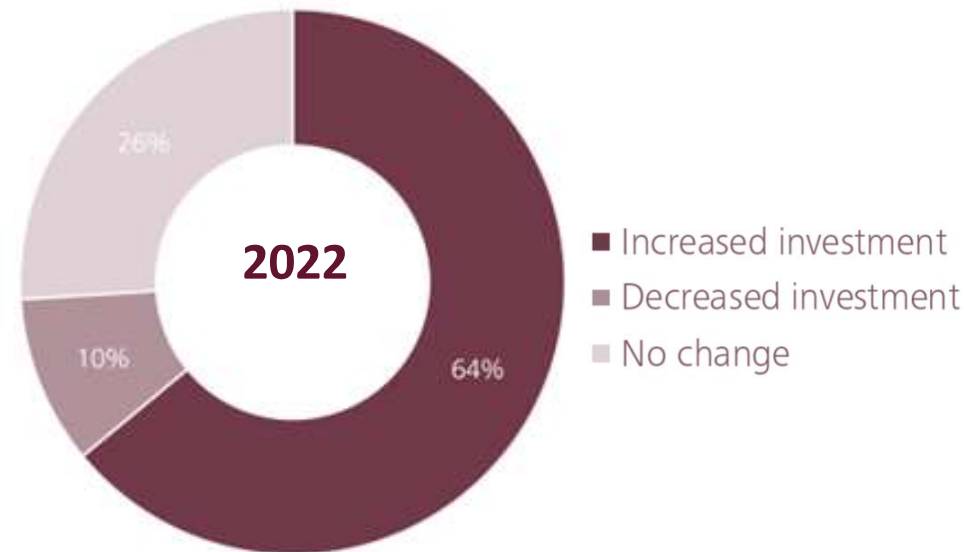
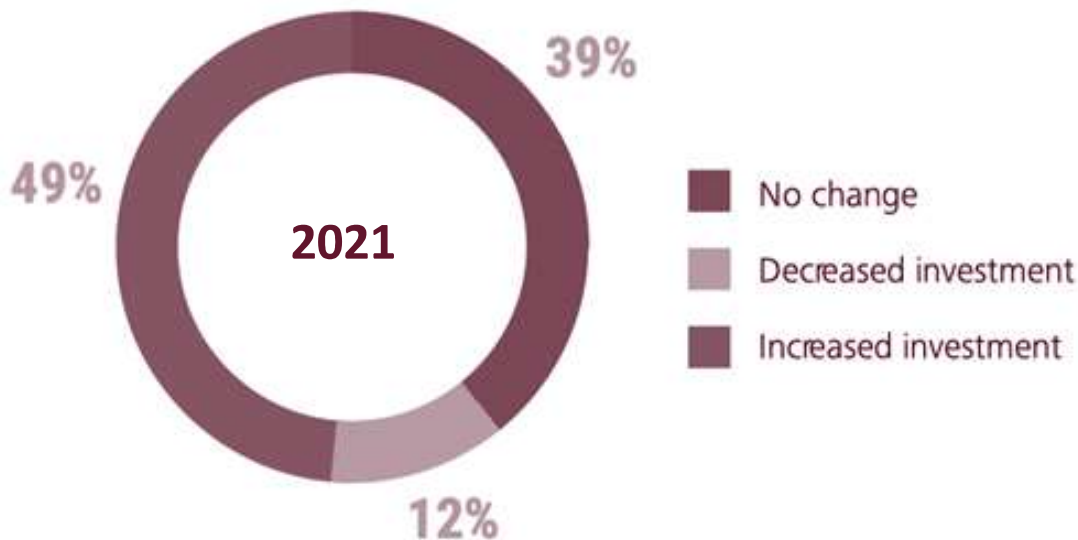
Investment in Innovation in Supply Chains (1000 companies surveyed)



87% say that the pandemic has altered the strategic importance of supply chain operations



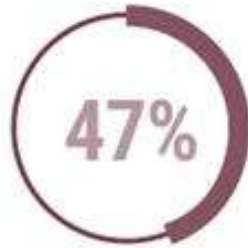
78% say supply chain transformation has accelerated due to the pandemic



LOGISTECHS - IMPACT

PREPARING FOR DISRUPTION

Actions taken by companies to prepare for disruption in the next ten years



Partnering with vendors to understand applications



Began piloting new technologies



Increased investment for innovative technologies

LOGISTECHS - IMPACT

Money is the biggest concern in digitizing supply chains, but talent and tech also are challenges

48%

Budget constraints

30%

Difficulty getting employees and teams to work differently

30%

Lack of understanding of business and technical capabilities

29%

Software and hardware systems don't enable analytical and process capabilities

27%

Don't have the right infrastructure in place (such as cloud-based tech)

23%

Difficulty attracting and developing "digital native" talent

22%

Setting performance goals for digitization

22%

Lack of support from other areas of the business

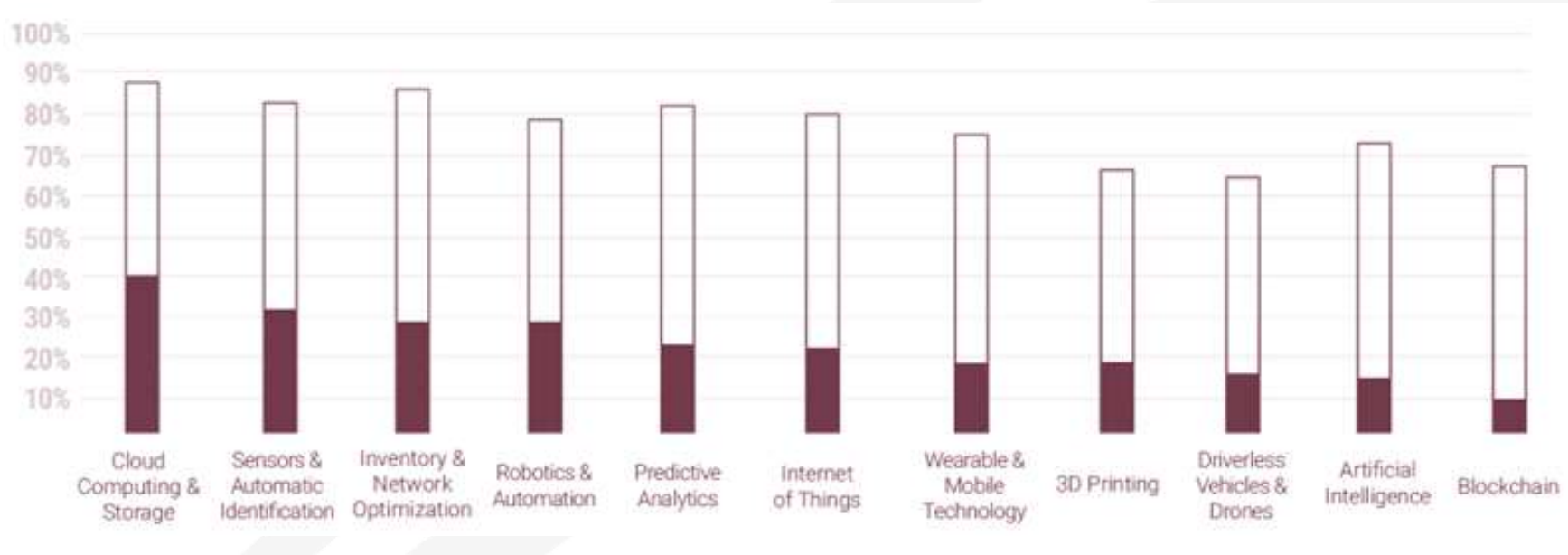
Lack of clear business case was the **#1** biggest barrier to adoption for every technology

8	8	8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9	9	9
1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3

LOGISTECHS - IMPACT

ADOPTION TRENDS - INTENDED USE

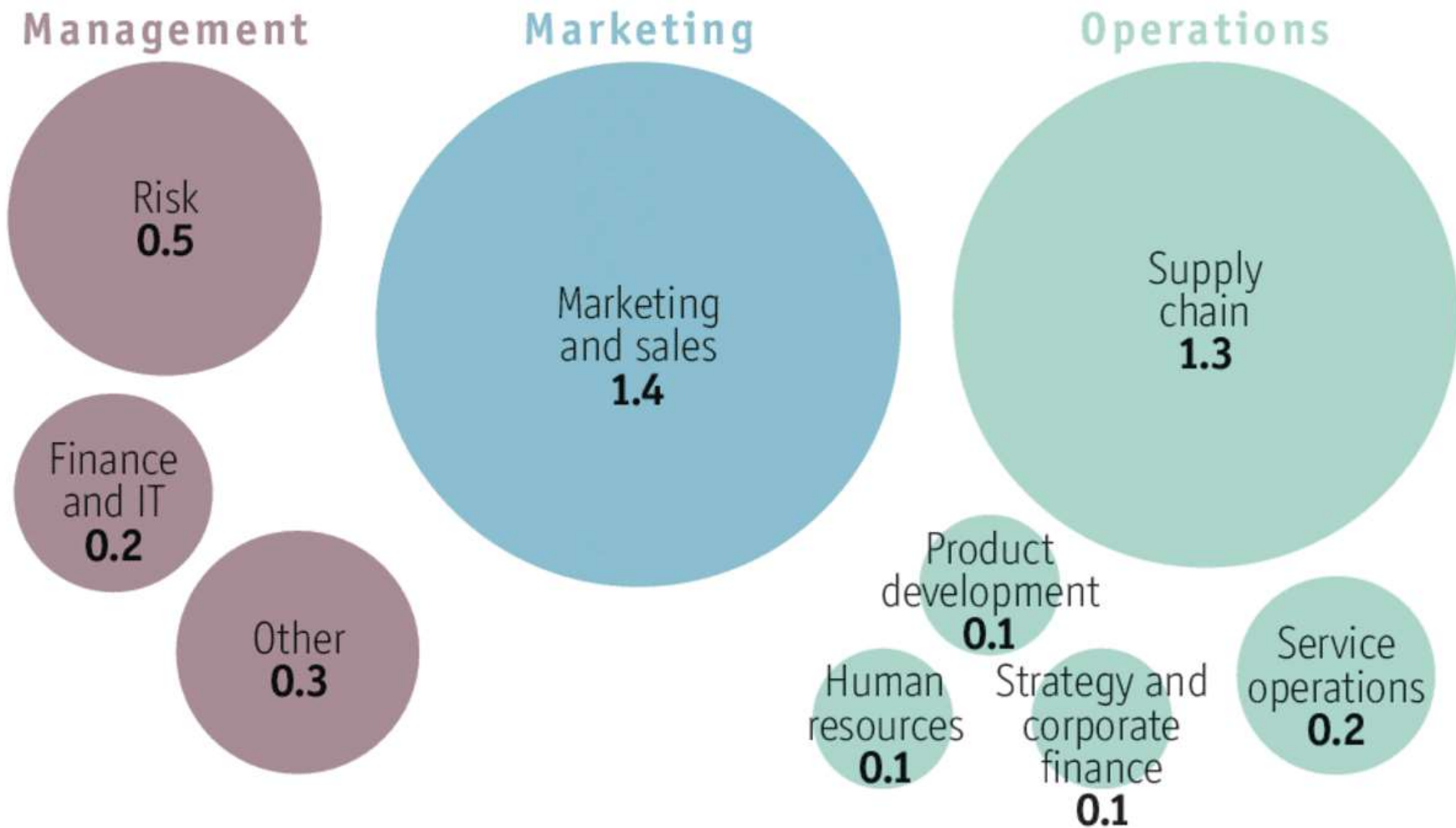
Technologies that are in use today vs. their projected use in 5 years



LOGISTECHS - IMPACT

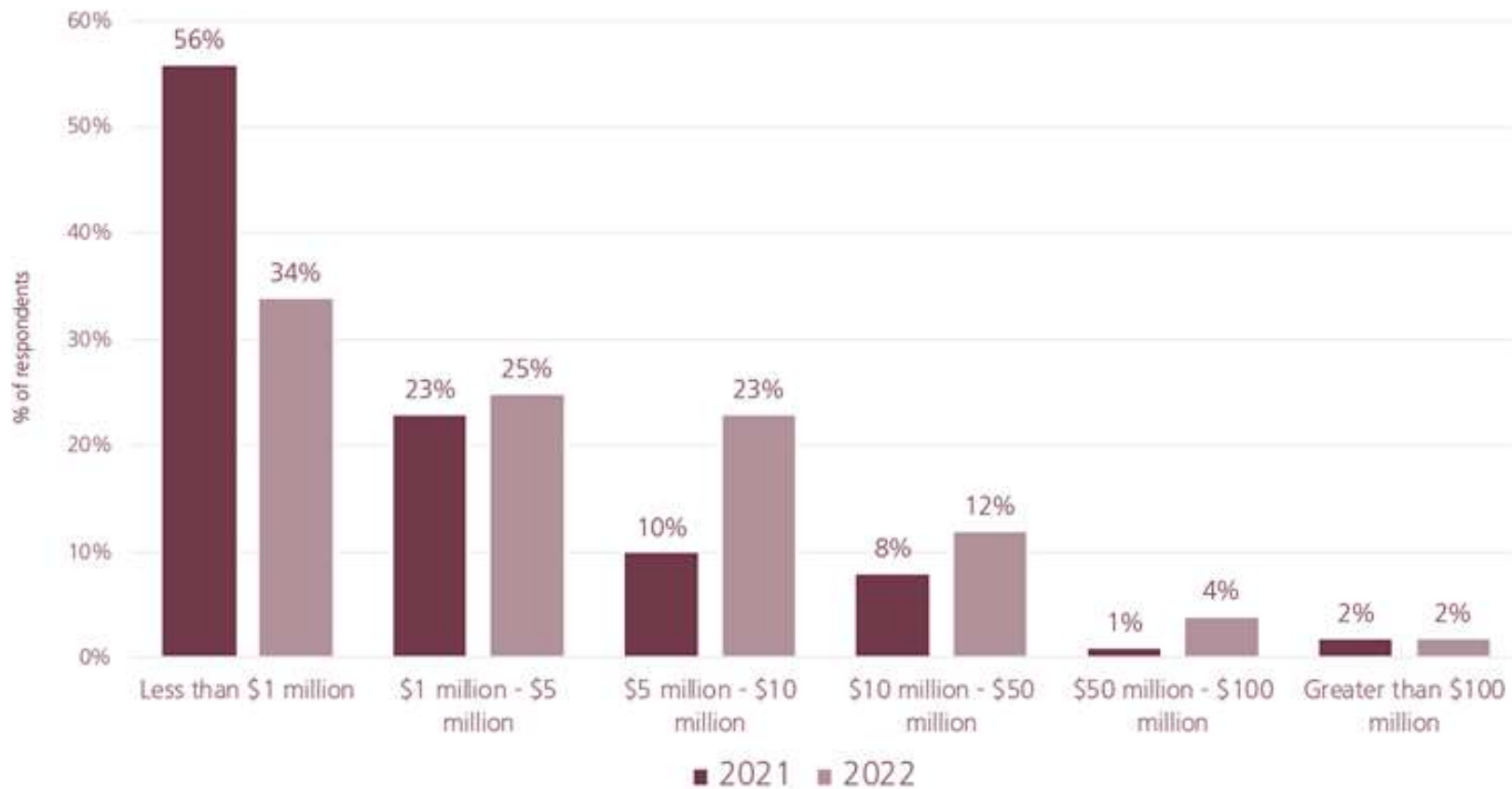
Potential economic-value creation from AI in the next 20 years

\$trn



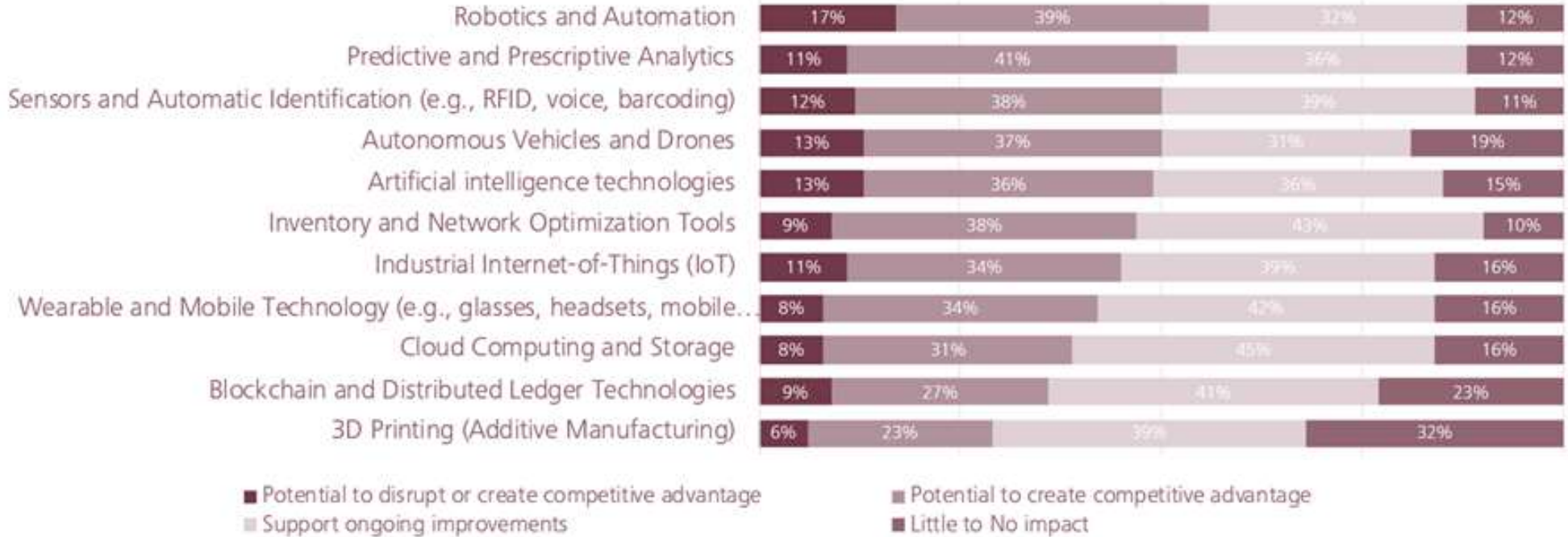
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Comparison of estimates of investment in innovations in supply chains during the next two years



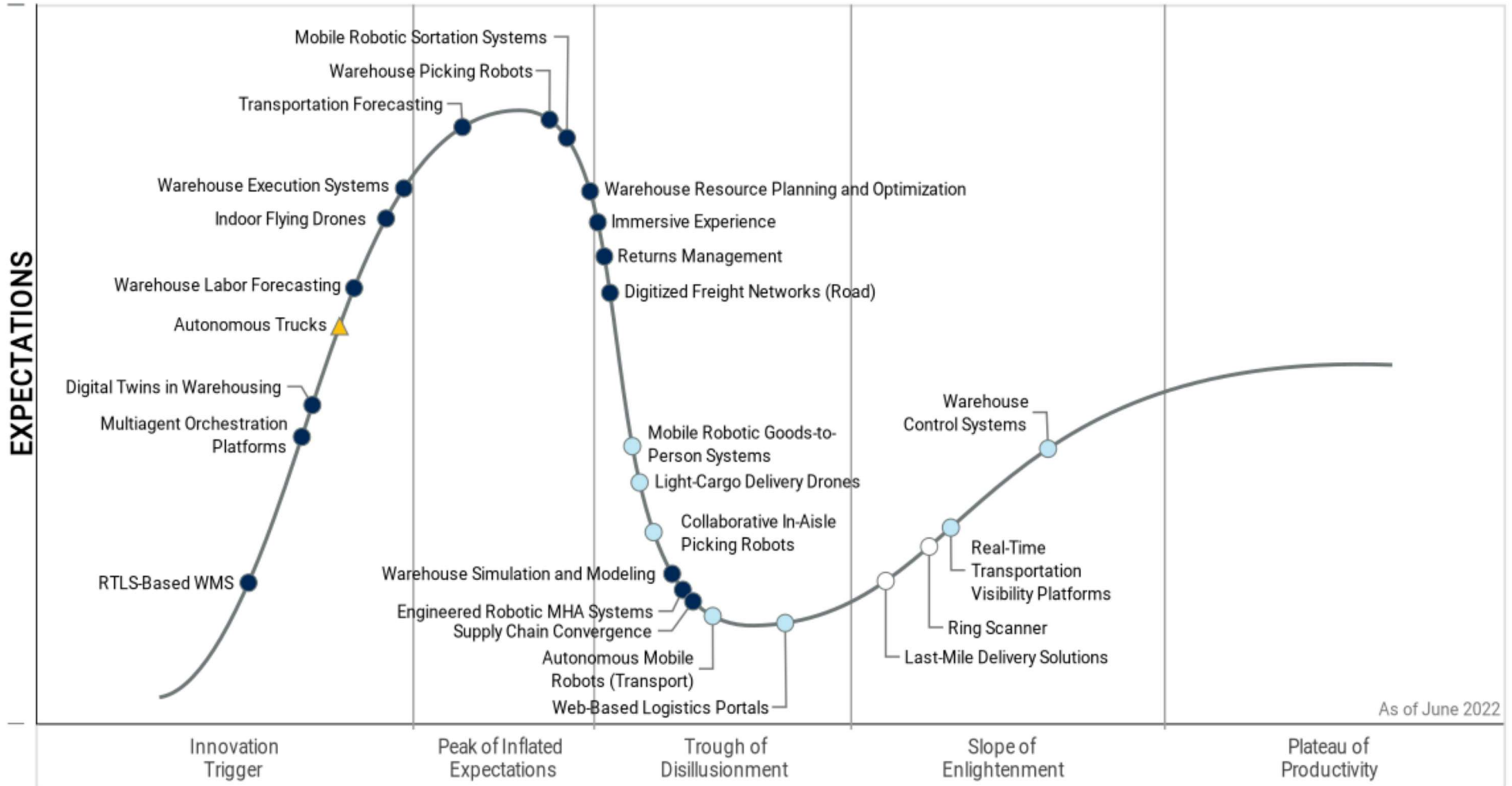
LOGISTECHS - IMPACT

Impact of Logistechs on supply chains



LOGISTECHS - IMPACT

Hype Cycle for Supply Chain Execution Technologies, 2022



As of June 2022

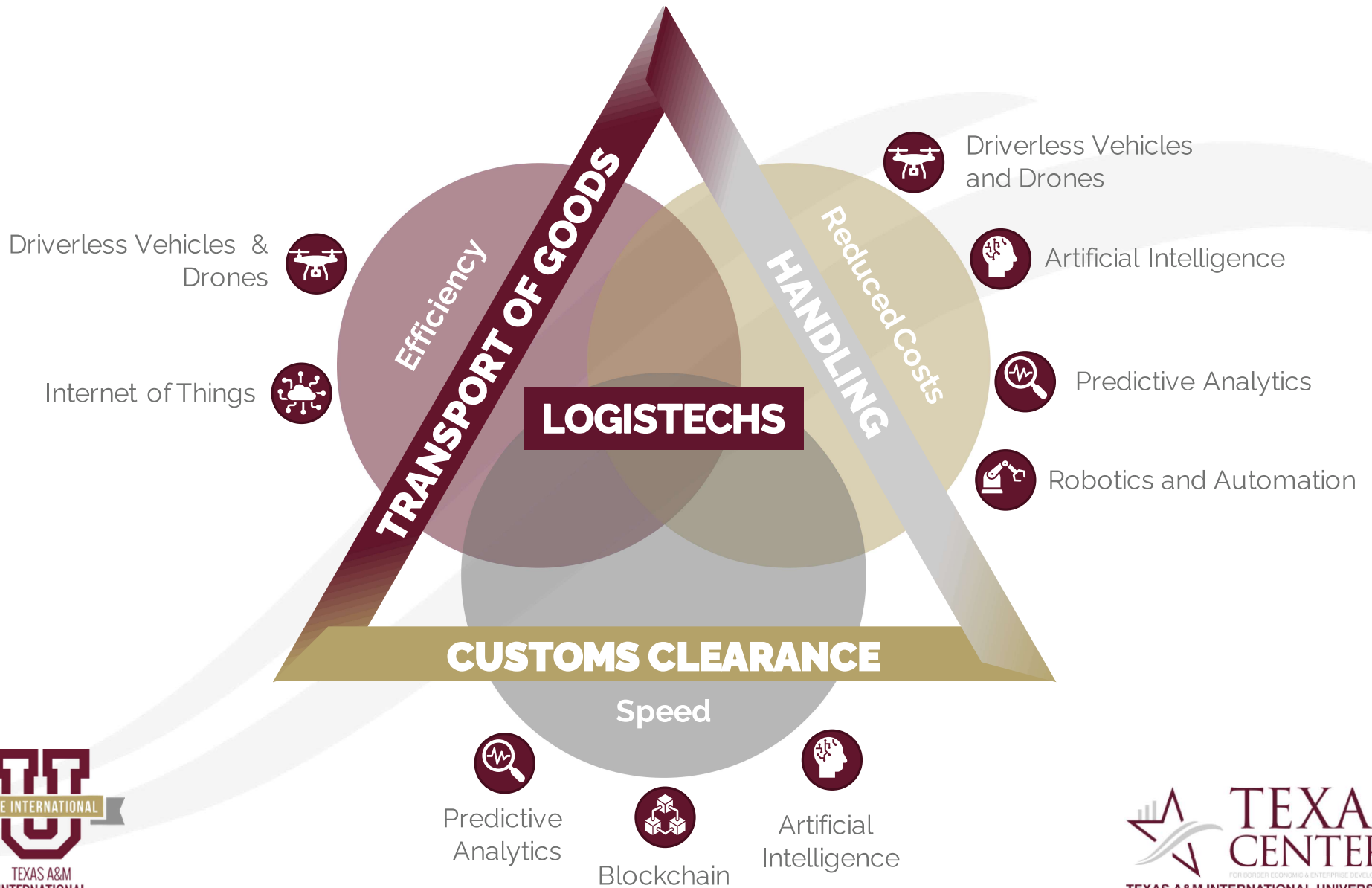
Plateau will be reached: ○ <2 yrs. ● 2-5 yrs. ● 5-10 yrs. ▲ >10 yrs. ✗ Obsolete before plateau

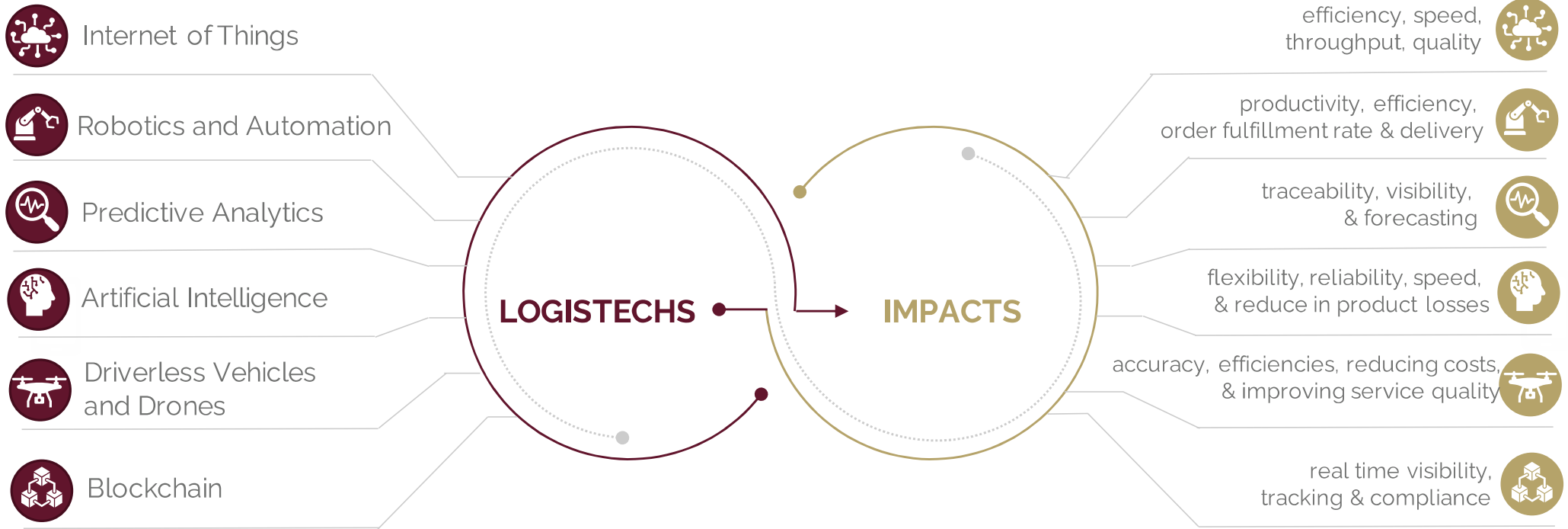


lo · gis · techs

represent the impact that exponential technologies have on logistics and can be classified as the technologies that support the transport of goods, those that improve their handling, and the ones that expedite their customs clearance.

LOGISTECHS





TAMIU
LOGIST  **CHS**
LIVING LAB



TAMIU Logistechs Living Lab: Pilot-Test Projects

The Texas A&M International University (TAMIU) Logistechs Living Lab is a research and development facility focused on improving the efficiency and competitiveness of cross-border trade and transportation.

- **Pilot-Test Project 1: Unified Trailer Interchange Database Webapp**
- **Pilot-Test Project 2: IoT sensor comparison for Traceability**



TAMIU Logistechs Living Lab: Unified Trailer Interchange Database Webapp

A web platform where **trucking, logistics, and freight forwarding companies** can **efficiently and securely** interchange trailer information to:

**Enhance supply
chain security**

Providing better traceability

**Increase speed
of logistics
process**

by permitting faster data entry
and inspection of trailers

**Increase trailer
lifespan**

by applying predictive
maintenance

TAMIU Logistechs Living Lab: IoT sensor comparison for Traceability



The screenshot displays a fleet management dashboard for a trailer named "GWF3-MS5-CND". The interface includes a sidebar with navigation options: Search, Overview, Assets, Coverage Map, Proximity, Safety, Compliance, Maintenance, Dispatch, Fuel & Energy, and Reports. The main area shows a map of Mexico with a location pin at "Calle Ponientes 146, Mexico City, DIF, 02300" and a timestamp of "Jan 3, 2023 10:58 PM". Below the map, there are sections for "Sensors", "Gateway", and "Check-in History". The map shows various cities and roads in the region, including Toluca, Mexico City, and surrounding areas.



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