

106 Years of Service



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The Manufacturers Alliance



106 Years of Service



KEY INITIATIVES

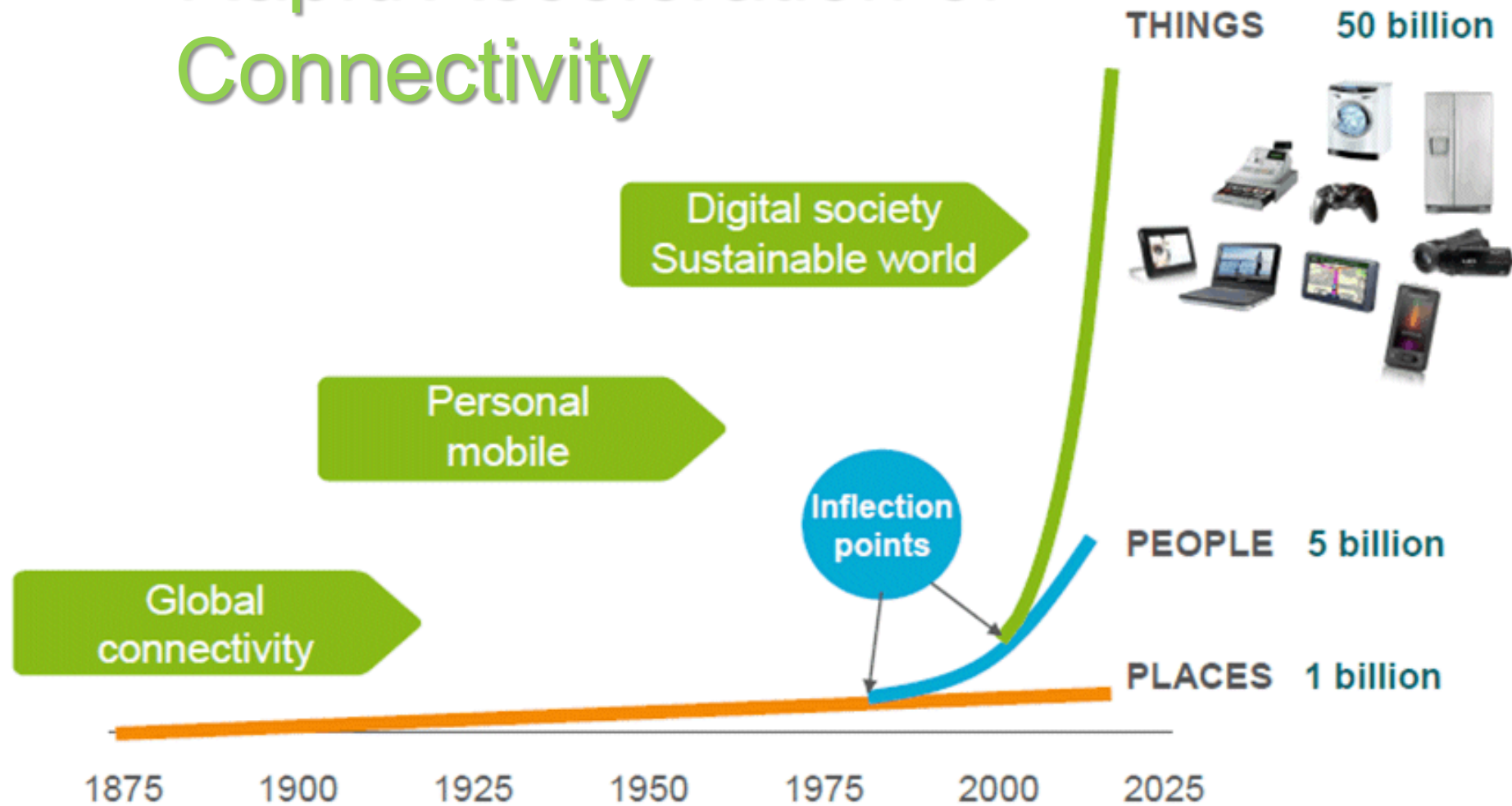
- » Individual Learning & Memberships
- » Leader Learning & Services
- » Digital Content Creation & Delivery
- » Workforce Solutions & Partnerships
- » Apprenticeships & Pre-Apprenticeships
- » Statewide Advocacy & Service Networks



Economic Expansion

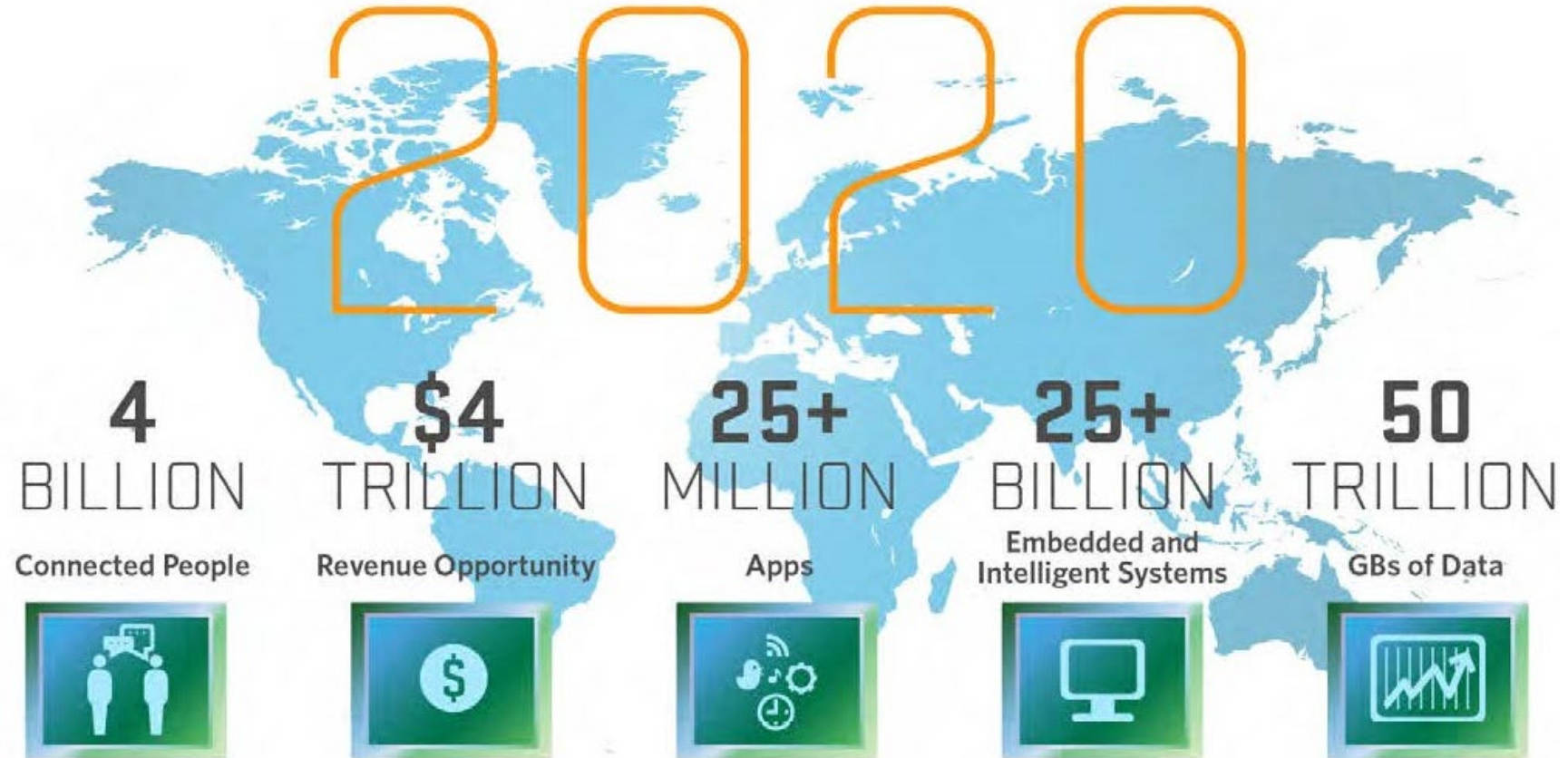
“longest in U.S. history”

Rapid Acceleration of Connectivity



Source: Ericsson AB, "Infrastructure Innovation - Can the Challenge be met?," Sept 2010

Internet of Things

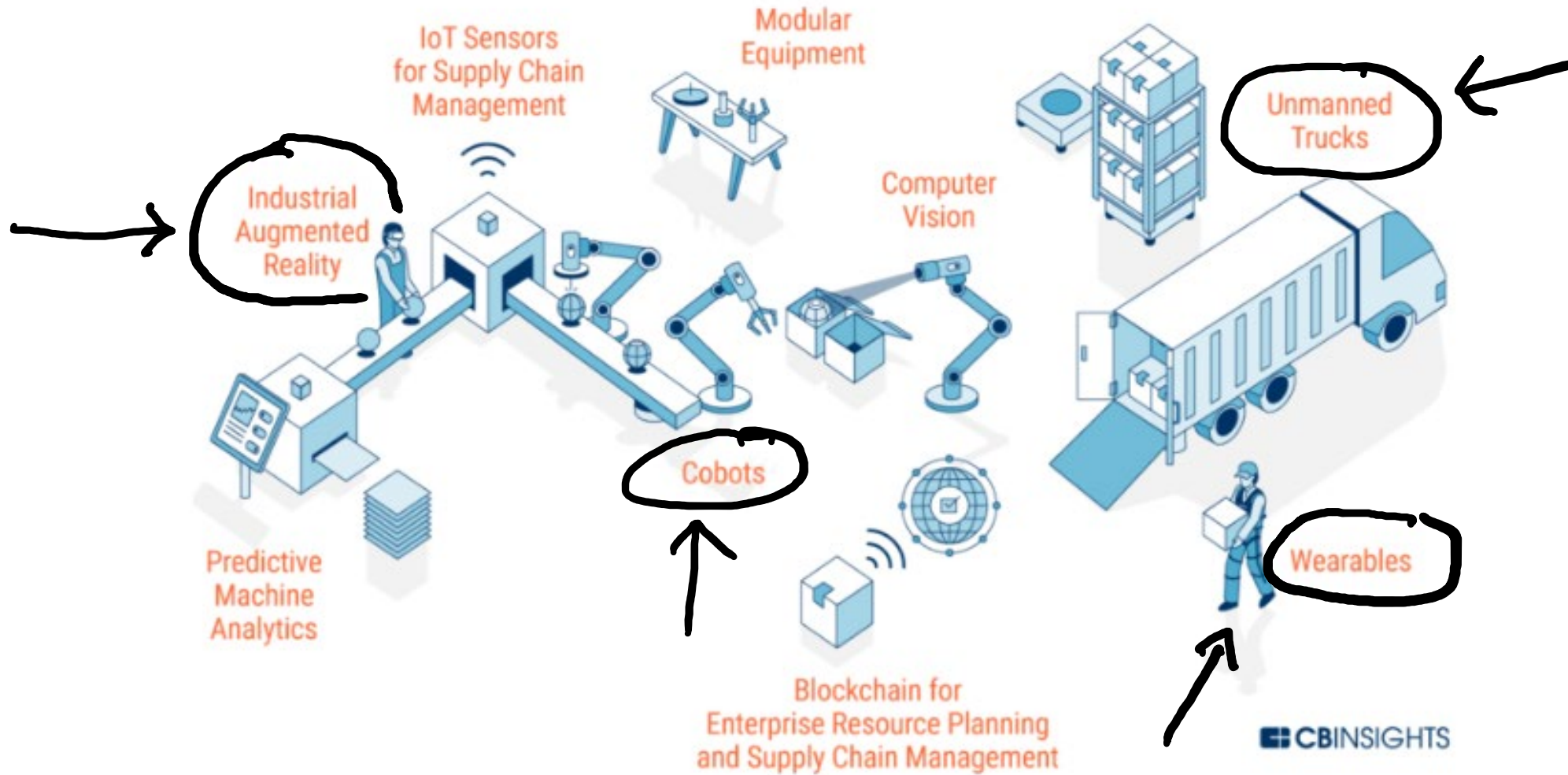


source: Mario Morales, IDC

The Future Exists Now -

It's Just Not Widely Distributed

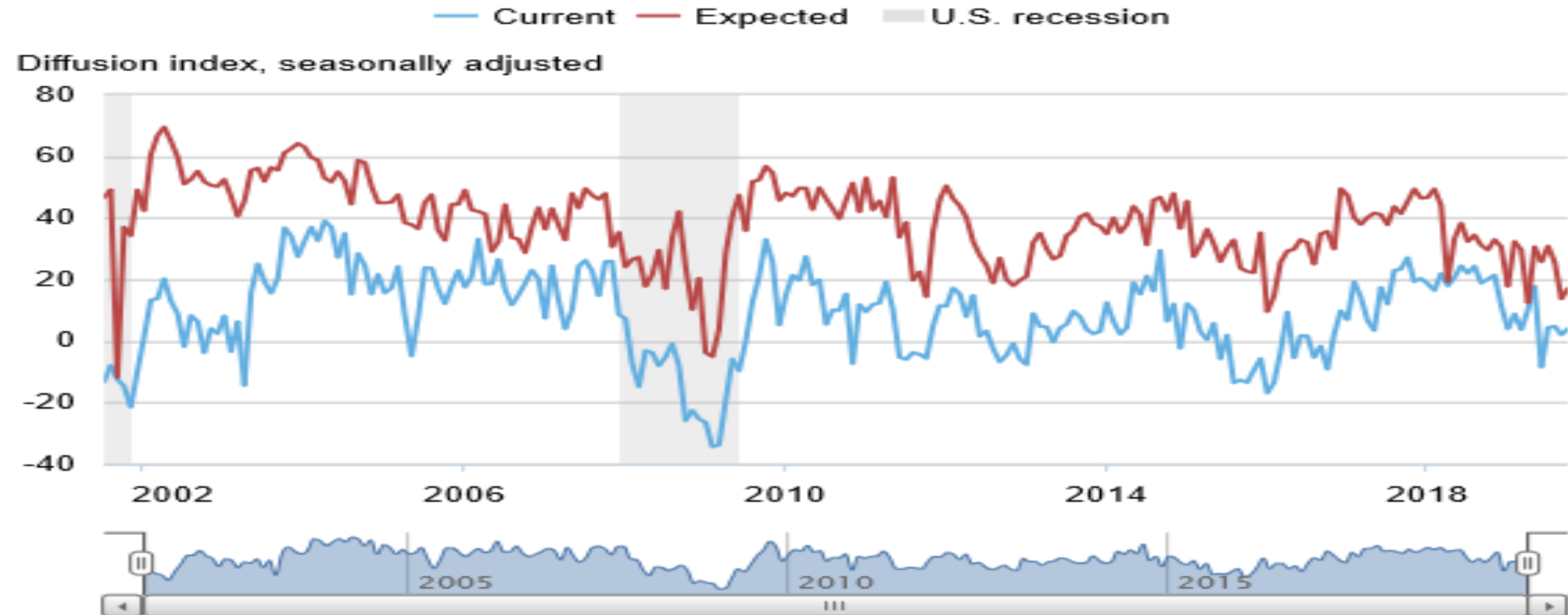
FACTORY OF THE FUTURE



Top Ten Trends in Manufacturing

- **Workforce is Tech Savy and Diverse**
- **Manufacturing as Service**
- **IoT Explosion and 5G Assimilation**
- **Cyber Security**
- **Industry-University Collaboration**
- **Supply Chain Leveraging and Blockchain**
- **AR and VR Growth**
- **Data Analytics, AI and Machine Learning**
- **Shifting Focus from B2B to B2B2C**
- **Reshoring and Increase in Made in USA**

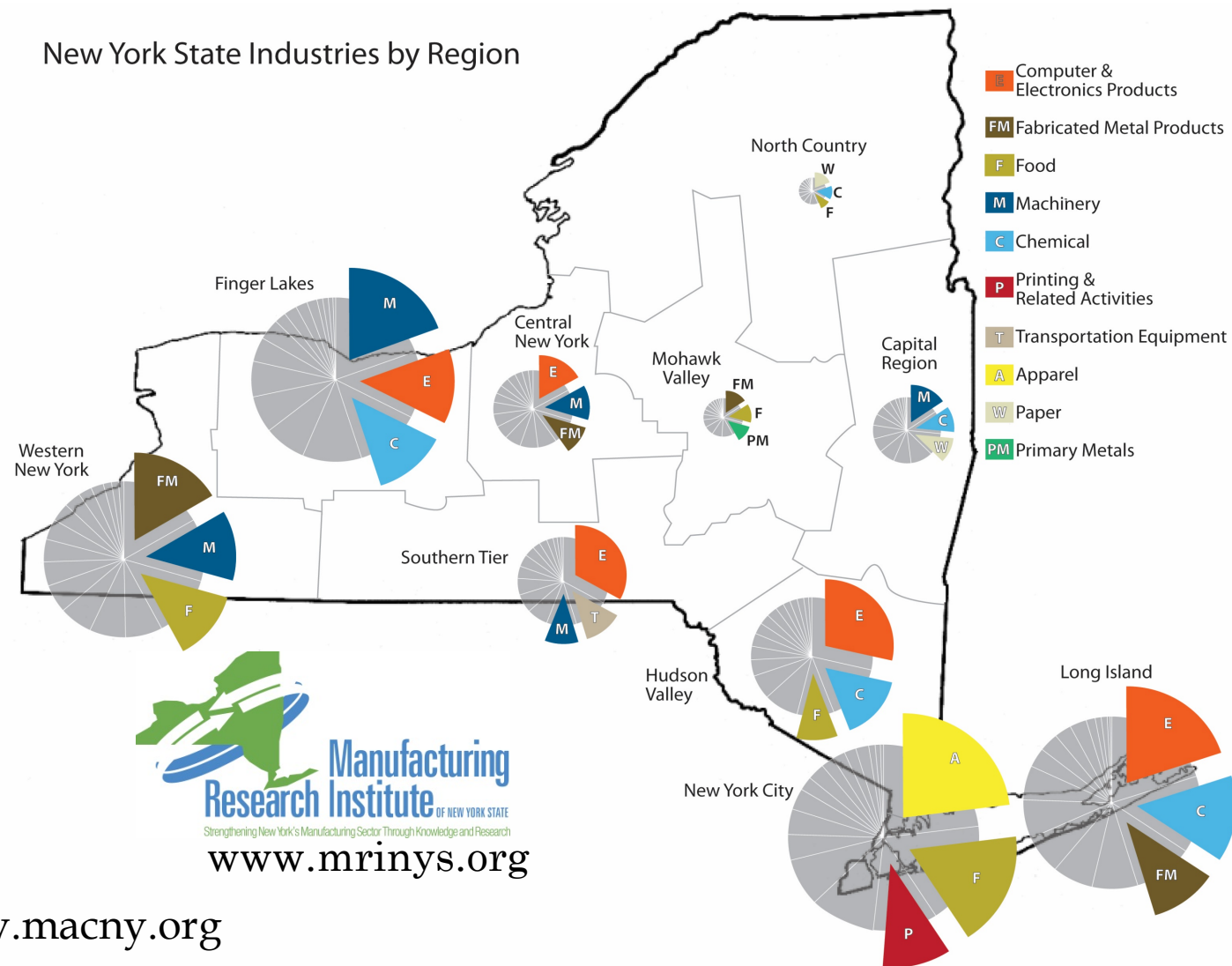
General Business Conditions



New York Manufacturing

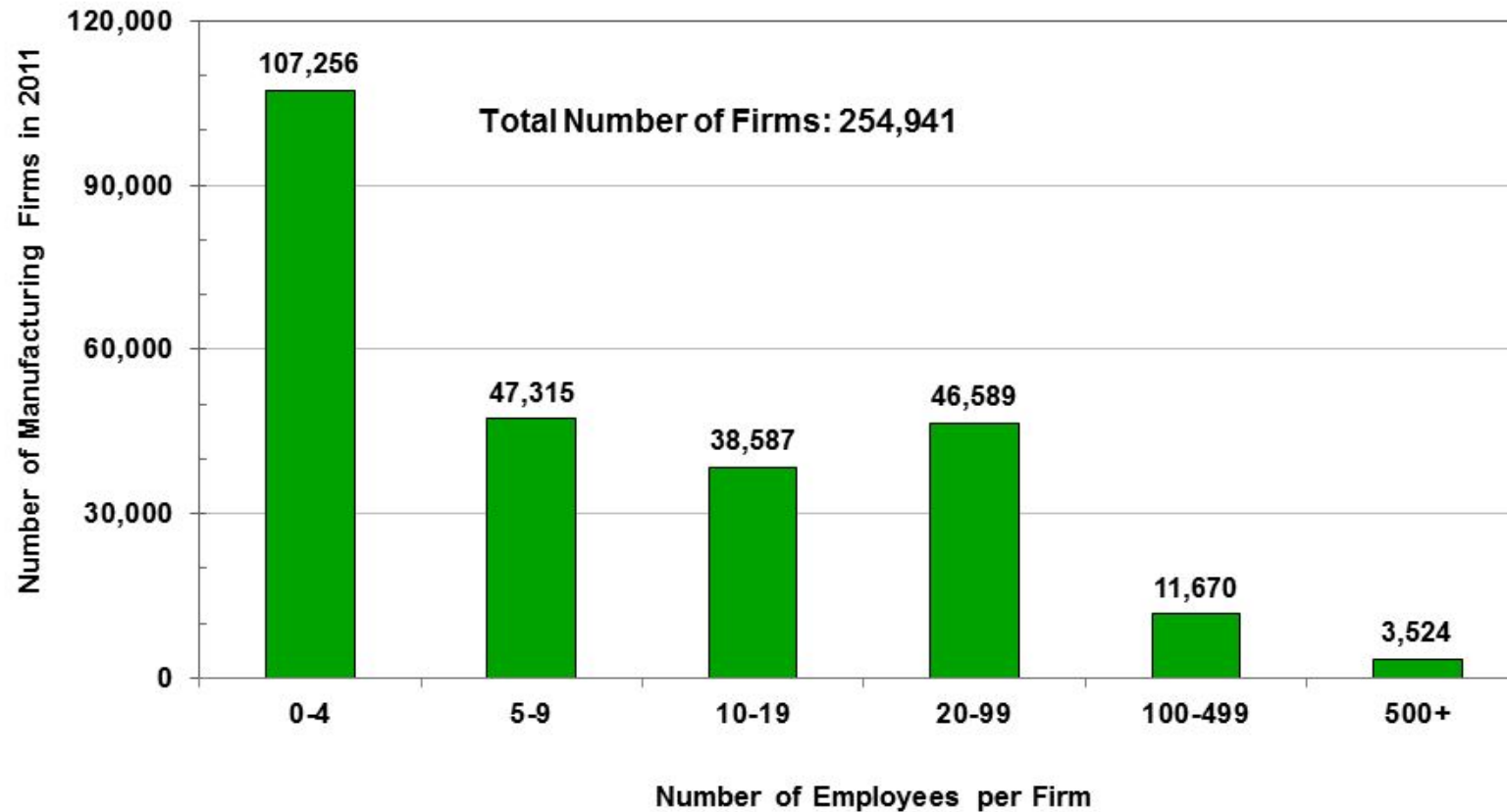


New York State Industries by Region



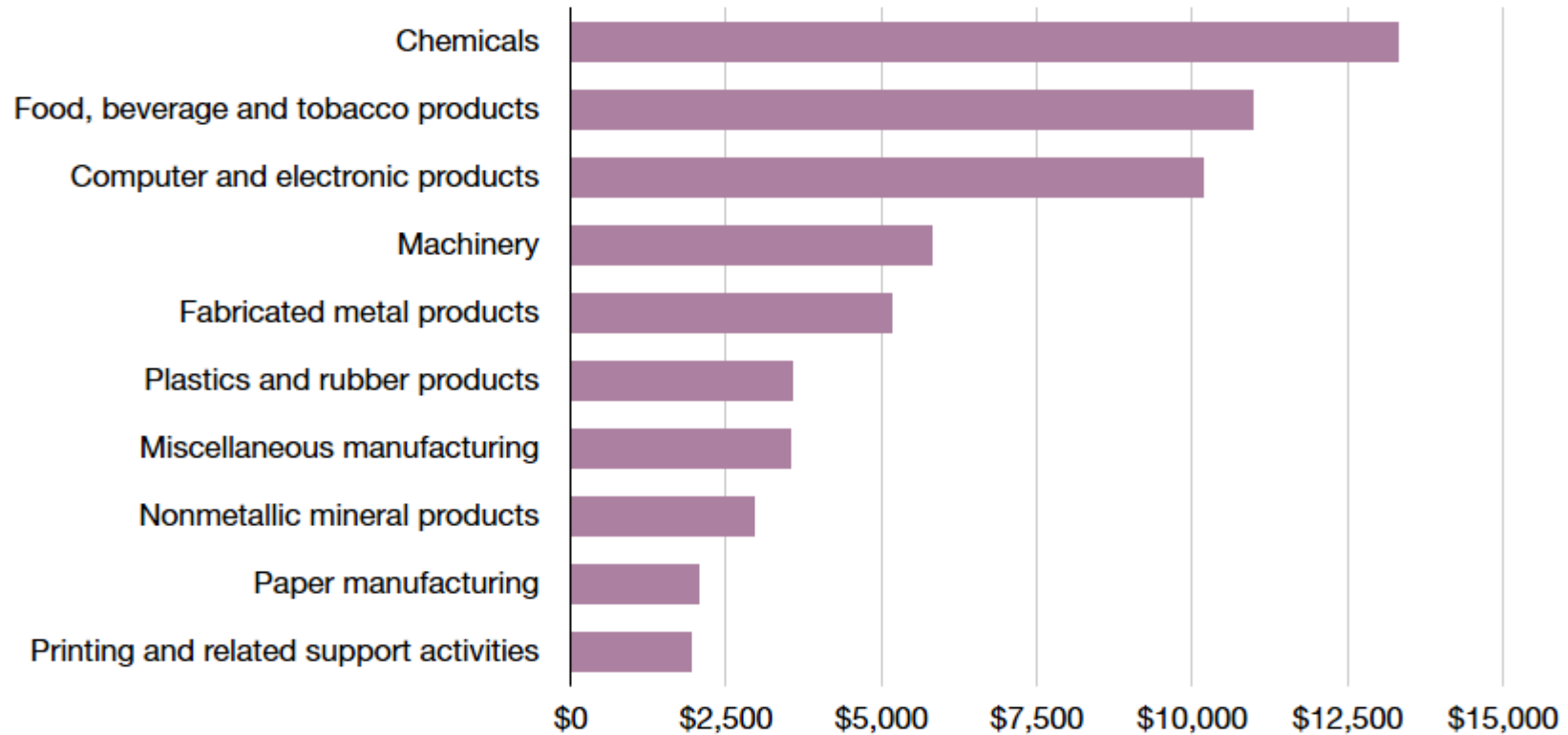


Manufacturing Firms by Number of Employees (Updated April 2014)



Source(s): U.S. Census Bureau and MAPI

**Top 10 New York Manufacturing Sectors, in Millions of Dollars,
2016**



Source: NAM

NAM MANUFACTURERS' OUTLOOK SURVEY
THIRD QUARTER 2019
 SEPTEMBER 23, 2019

<p>Percentage of Respondents Positive About Their Own Company's Outlook</p> <p style="text-align: center;">67.9% <i>(June: 79.8%)</i></p> <p>Small Manufacturers: 64.8% <i>(June: 85.2%)</i> Medium-Sized Manufacturers: 74.1% <i>(June: 79.5%)</i> Large Manufacturers: 62.5% <i>(June: 76.1%)</i></p>	<p>Overall Facts About the Survey</p> <p>Number of Responses: 448 In the Field: August 20 to September 4, 2019</p> <p>Small Manufacturers: 91 responses Medium-Sized Manufacturers: 189 responses Large Manufacturers: 168 responses</p> <hr/> <p>NAM Manufacturing Outlook Index¹</p> <p style="text-align: center;">45.2 <i>(June: 53.3, revised)</i></p>
<p>Expected Growth Rate for <u>SALES</u> Over the Next 12 Months</p> <p style="text-align: center;">↑ 2.1% <i>(June ↑ 3.4%)</i></p>	<p>Expected Growth Rate for <u>PRODUCTION</u> Over the Next 12 Months</p> <p style="text-align: center;">↑ 1.8% <i>(June: ↑ 3.4%)</i></p>
<p>Expected Growth Rate for <u>FULL-TIME EMPLOYMENT</u> Over the Next 12 Months</p> <p style="text-align: center;">↑ 0.9% <i>(June: ↑ 1.6%)</i></p>	<p>Expected Growth Rate for <u>EMPLOYEE WAGES</u> Over the Next 12 Months</p> <p style="text-align: center;">↑ 2.0% <i>(June: ↑ 2.3%)</i></p>
<p>Expected Growth Rate for <u>CAPITAL INVESTMENTS</u> Over the Next 12 Months</p> <p style="text-align: center;">↑ 1.1% <i>(June: ↑ 2.2%)</i></p>	<p>Expected Growth Rate for <u>EXPORTS</u> Over the Next 12 Months</p> <p style="text-align: center;">↑ 0.2% <i>(June: ↑ 0.4%)</i></p>
<p>Expected Growth Rate for <u>PRICES OF COMPANY'S PRODUCTS</u> Over the Next 12 Months</p> <p style="text-align: center;">↑ 1.7% <i>(June: ↑ 2.0%)</i></p>	<p>Expected Growth Rate for <u>RAW MATERIAL PRICES AND OTHER INPUT COSTS</u> Over the Next 12 Months</p> <p style="text-align: center;">↑ 2.4% <i>(June: ↑ 3.1%)</i></p>
<p>Expected Growth Rate for <u>INVENTORIES</u> Over the Next 12 Months</p> <p style="text-align: center;">↓ 0.8% <i>(June: ↓ 0.1)</i></p>	<p>Expected Growth Rate for <u>HEALTH INSURANCE COSTS</u> Over the Next 12 Months</p> <p style="text-align: center;">↑ 6.2% <i>(June: ↑ 6.5%)</i></p>

Figure 3: Primary Current Business Challenges, Third Quarter 2019



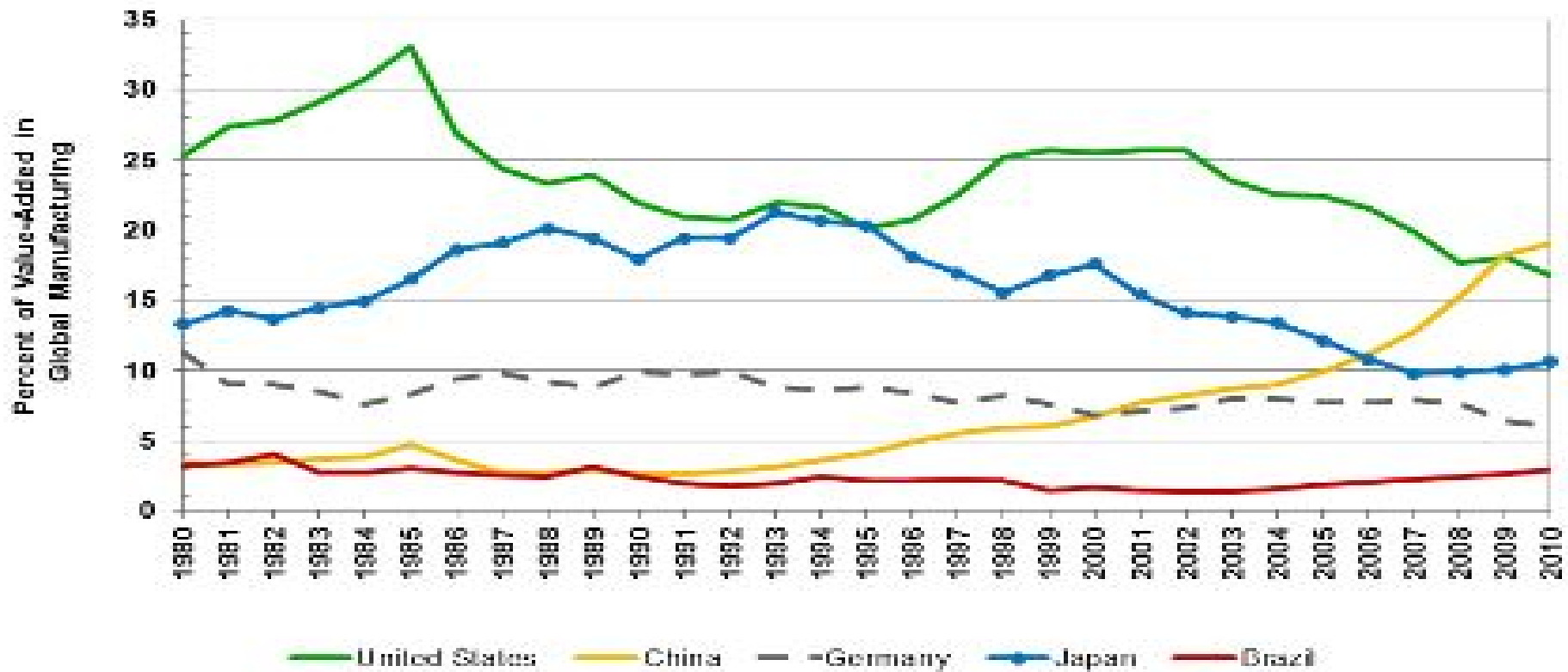
Note: Respondents were able to check more than one response; therefore, responses exceed 100 percent.

Figure 5: How Firms Are Addressing the Skills Shortage, Third Quarter 2019



Note: Respondents were able to check more than one response; therefore, responses exceed 100 percent.

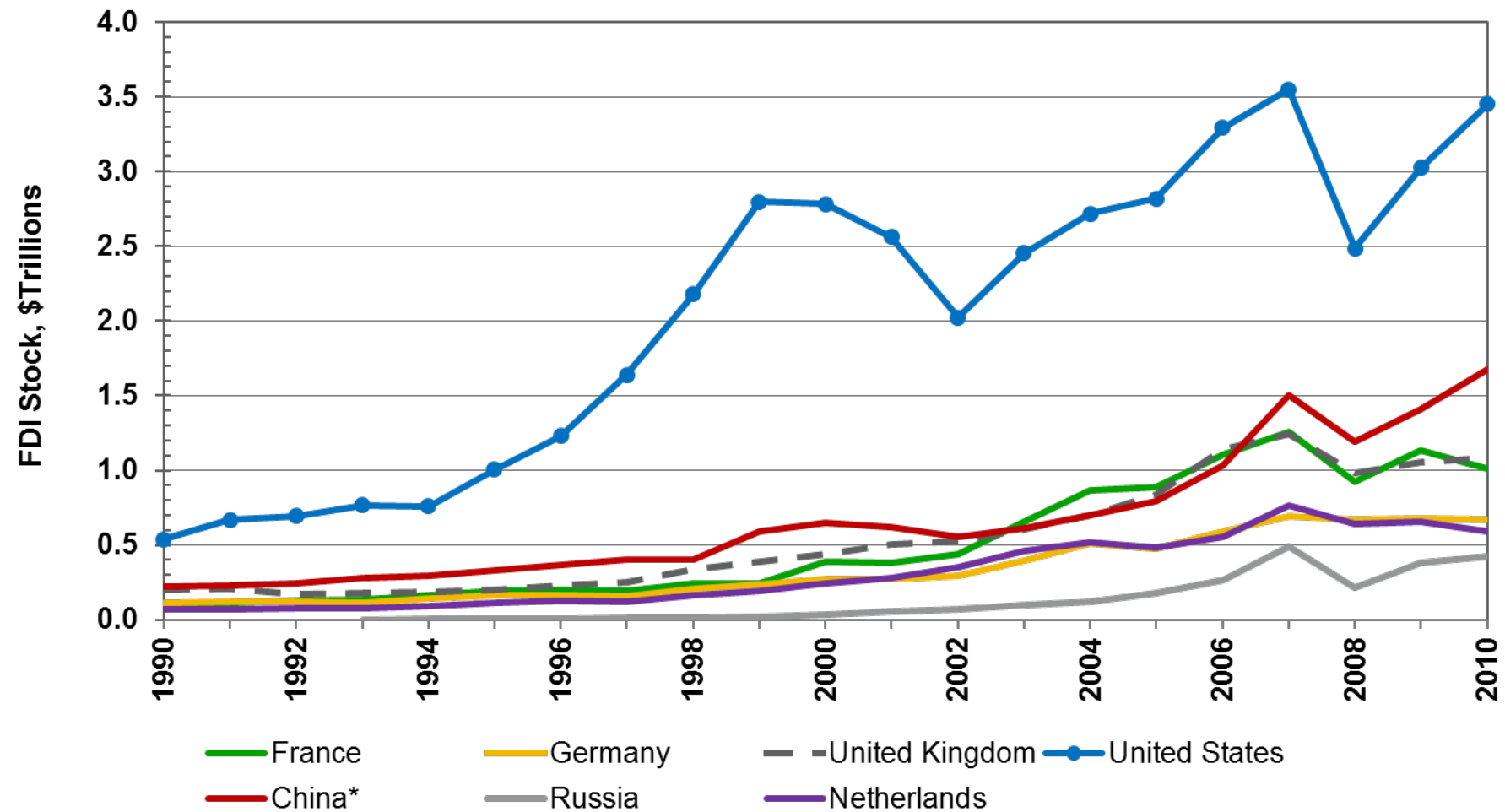
According to the World Bank, U.S. and China are Comparable
(Updated March 2014)



Source(s): World Bank, WDI and GDF databases and MAPI



Figure 35 – The U.S. Is the #1 Destination for Foreign Direct Investment



* Includes Hong Kong

Source(s): UNCTAD World Investment Report



4 Trends Shaping Advanced Manufacturing

- The World as the Market
- Technology Explosion
- Brains Not Brawn
- Clusters of Industries

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The World as the Market



B. Rich
HEDGEYE

Instruments of Trade Control

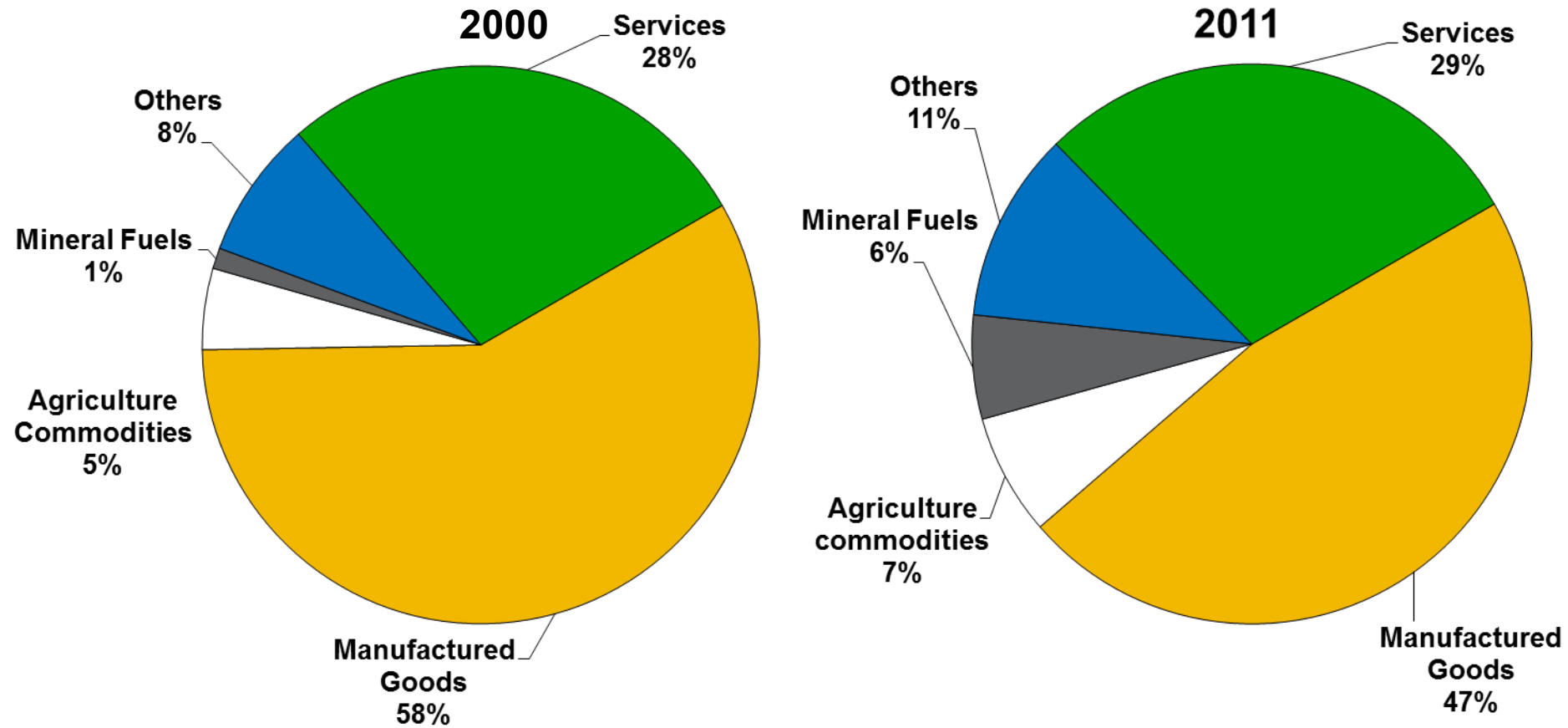
Tariff Barriers

- Import tariffs
- Export Tariffs
- Transit Tariffs

Non – Tariff Barriers

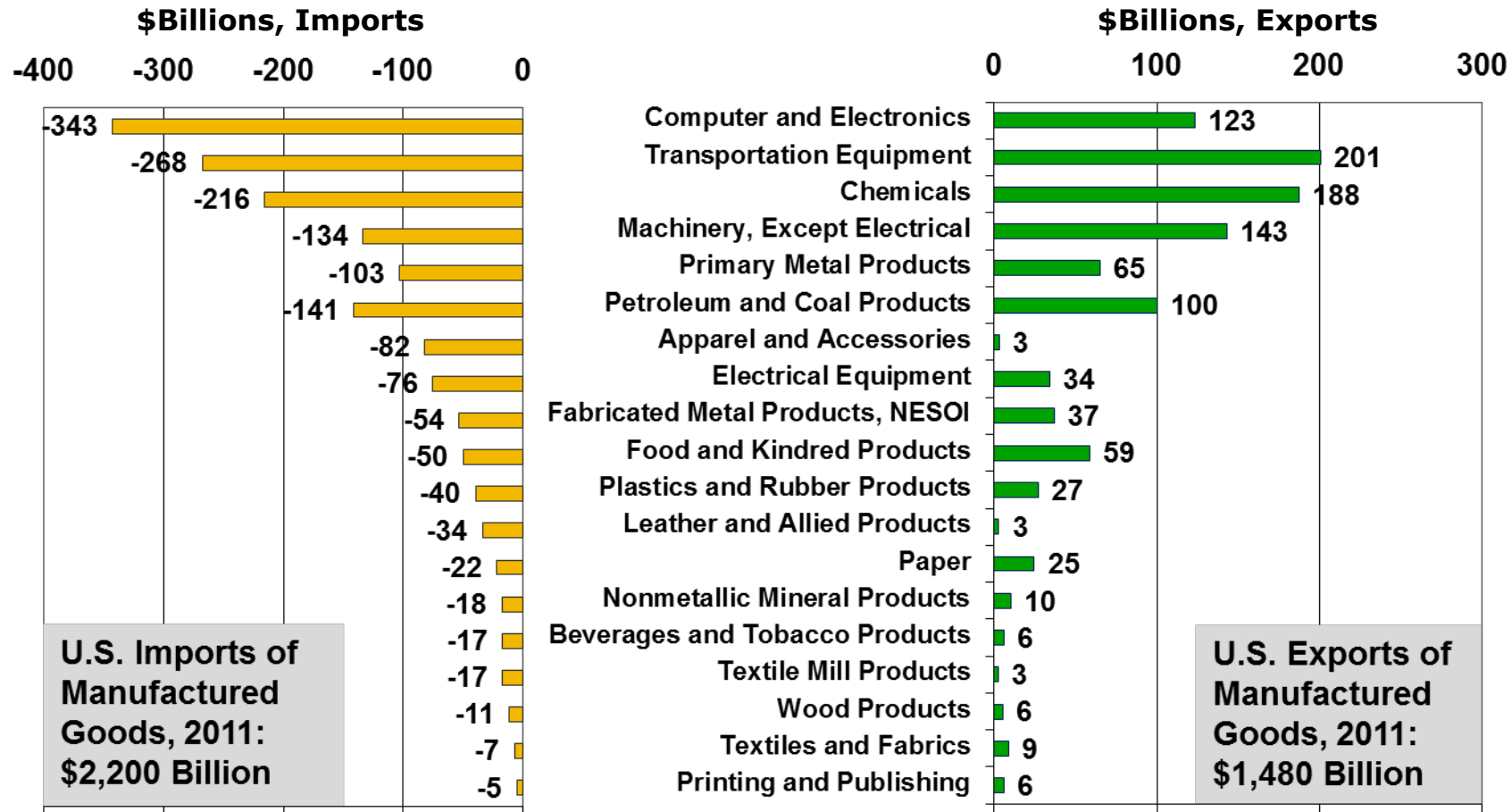
- Subsidies
- Tied Aids
- Minimum Sale Price
- Quotas
- Embargoes
- Buy – Local Legislation
- Specific Permissions Required

Figure 32 – Manufacturing Still Dominates U.S. Exports, But Its Share Is Declining



Source(s): U.S. Census Bureau and MAPI calculations

Figure 65 – A Few Core Industries Dominate Foreign Trade in Manufacturers

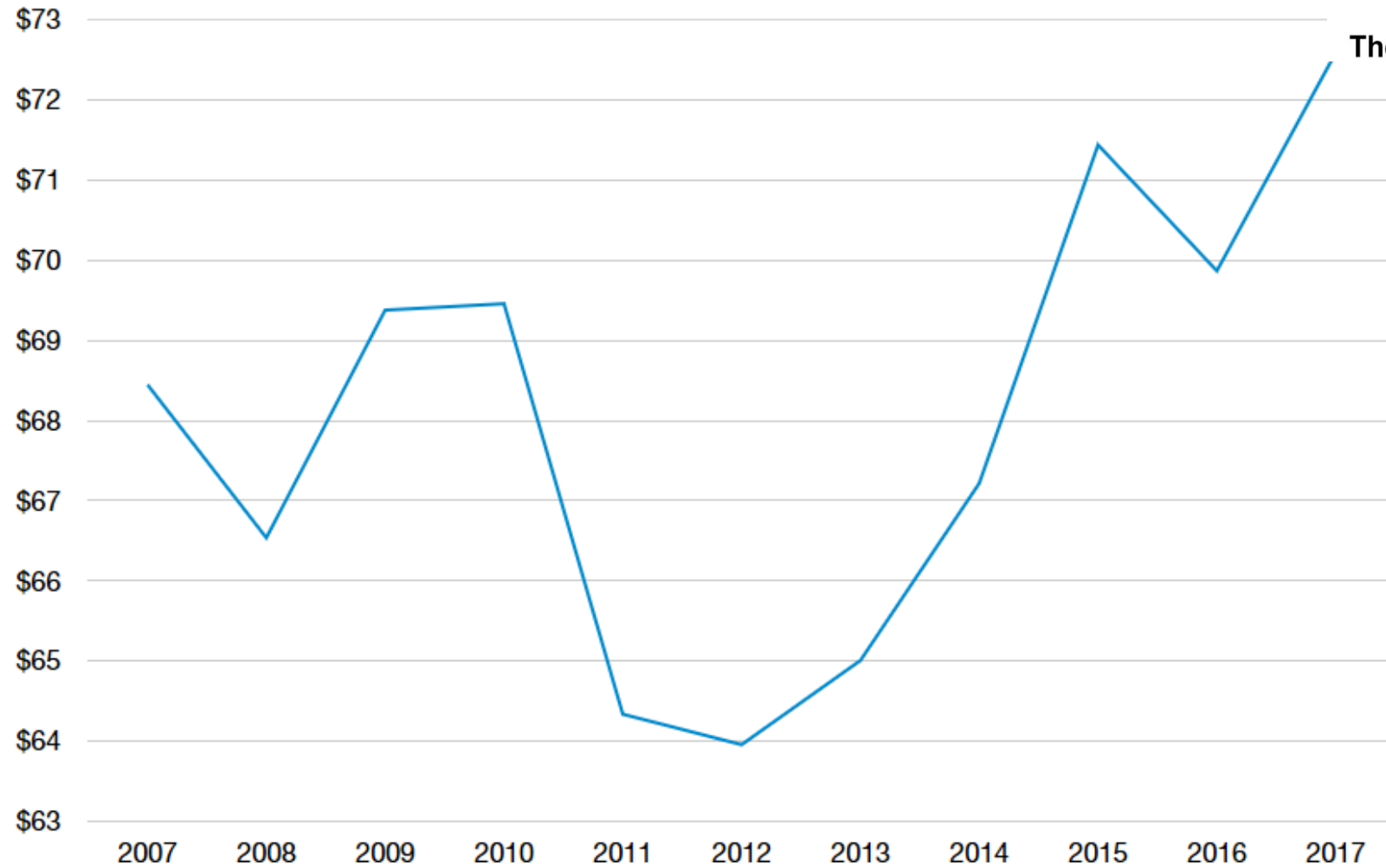


Source(s): U.S. International Trade Commission and MAPI



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New York Manufacturing Output, in Billions of Dollars, 2005–2017





The Manufacturers Association

In Brief: New York's Manufacturing Trade and Employment Data

\$73 Billion in Total Manufacturing Output (2017)

Total Manufactured Goods Exports:

\$63 billion

To World (2018)

\$12 billion

To Canada/Mexico (2018)

Manufacturing Firms:

15,304

Total Manufacturing Firms
(2015)

3,657

Manufacturing Firms Exporting
to Canada/Mexico

Employment:

443,800

Total Manufacturing
Employment (2018)

21,158

Manufacturing Employment
Tied to Exports to Canada/
Mexico

Average Annual Compensation:

\$74,579

Manufacturing (2016)

\$60,079

Nonfarm Business (2016)

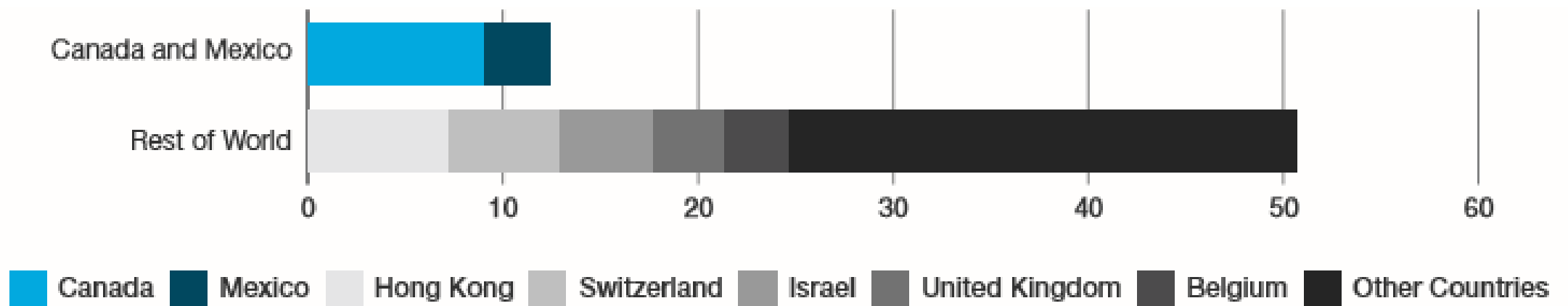
Source: NAM analysis of data reported by the U.S. Department of Commerce



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Canada and Mexico purchase nearly one-fifth of New York's total global manufacturing exports

New York Manufactured Goods Exports, in Billions of U.S. Dollars, 2018



Source: U.S. Department of Commerce

New York's Top Exports to Canada and Mexico: chemicals; other nonferrous metals; engine, turbine and power transmission equipment; paper products; food and beverages; miscellaneous manufactured commodities; aluminum; fabricated metal products; motor vehicle parts; computer equipment.



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50% BIGGER

New York's engine, turbine and power transmission equipment exports to Canada and Mexico have increased by nearly 50 percent over the last decade.

20% BIGGER

New York's food and beverages exports to Canada and Mexico have increased by more than 20 percent over the last decade.

SMEs = WINNERS

New York's small- and medium-sized businesses comprise 84 percent of the state's exporters of machinery to Canada and Mexico, and 85 percent of the state's exporters of food products to Canada and Mexico.

ONE OUT OF FOUR

**New York Manufacturing Firms
Export to Canada and Mexico**

- 3,657 firms
- 82 percent are small- and medium-sized businesses supporting local economies

MORE THAN 21,100

**New York Manufacturing Jobs Depend on
Manufacturing Exports to Canada and Mexico**

- Export-dependent jobs are usually full time, pay higher-than-average wages and offer real career opportunities to middle-class workers.
- New York manufacturing workers make on average \$74,579 in total annual compensation compared to \$60,079 for workers across all private nonfarm industries.

www.nam.org/trade



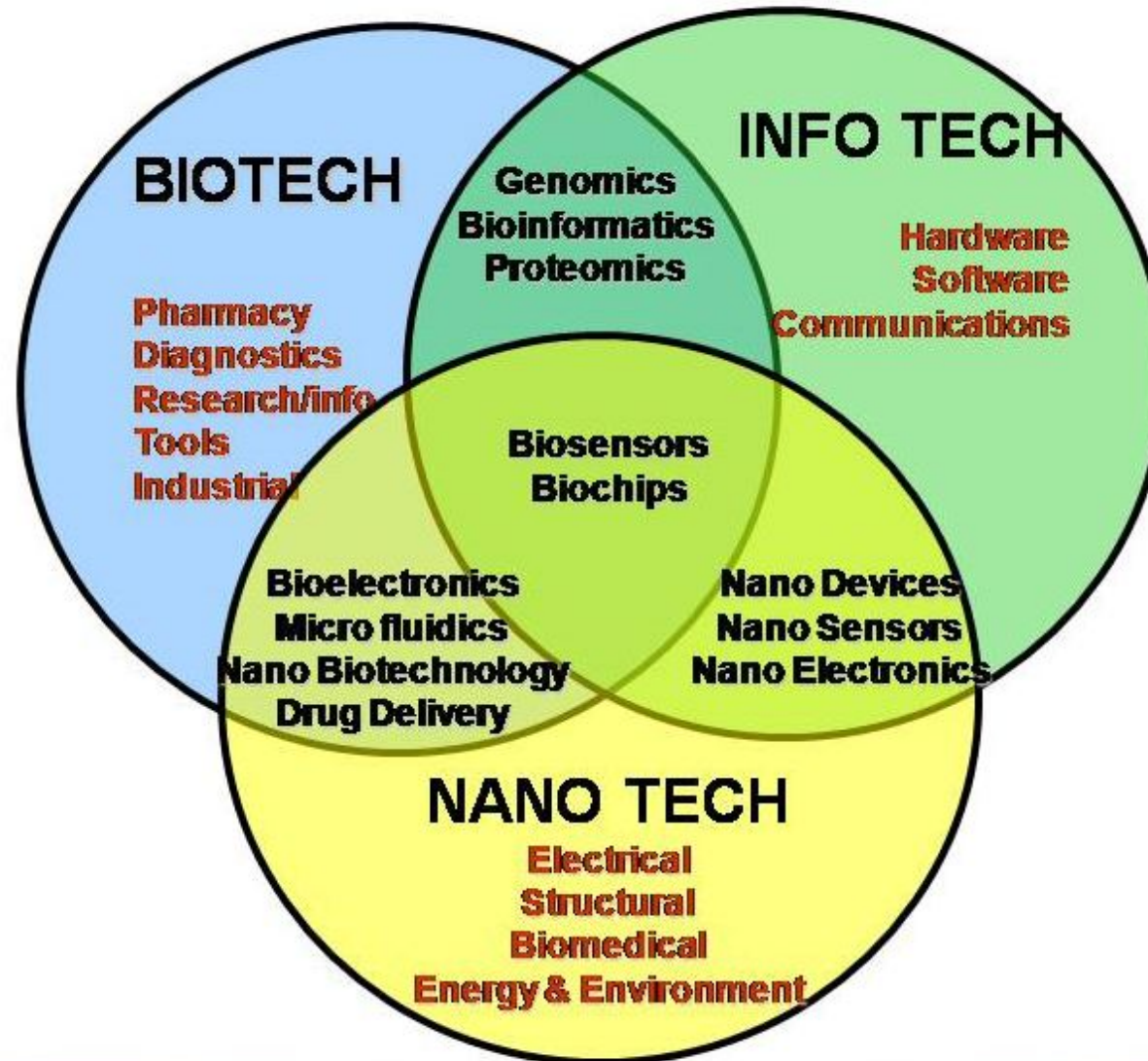
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Technology Explosion

CONVERGENCE OF TECHNOLOGIES

BIO-INFO-NANO



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Brains not Brawn

Brains not Brawn



**Talent has never been
more important!**

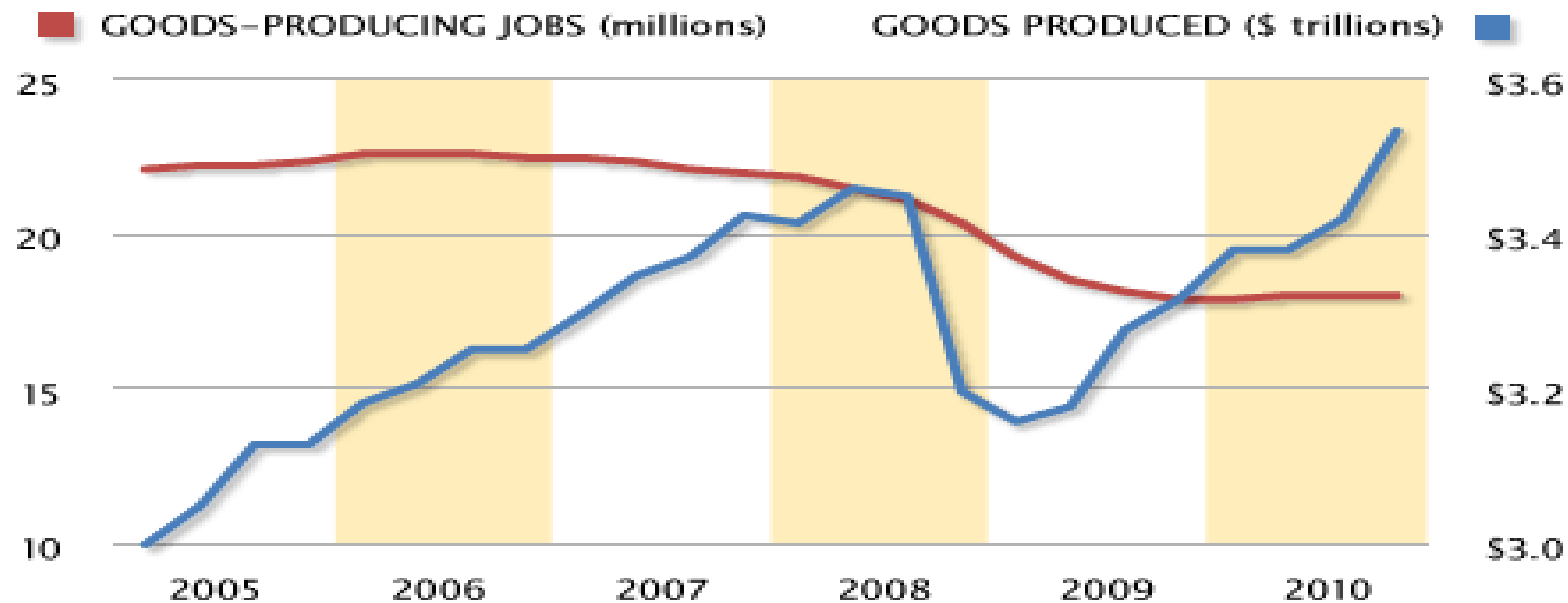
**Skill most desired by
Global CEO's –
Creativity!**

Every Job is Changing

Where have all the jobs gone?

Missing manufacturing jobs

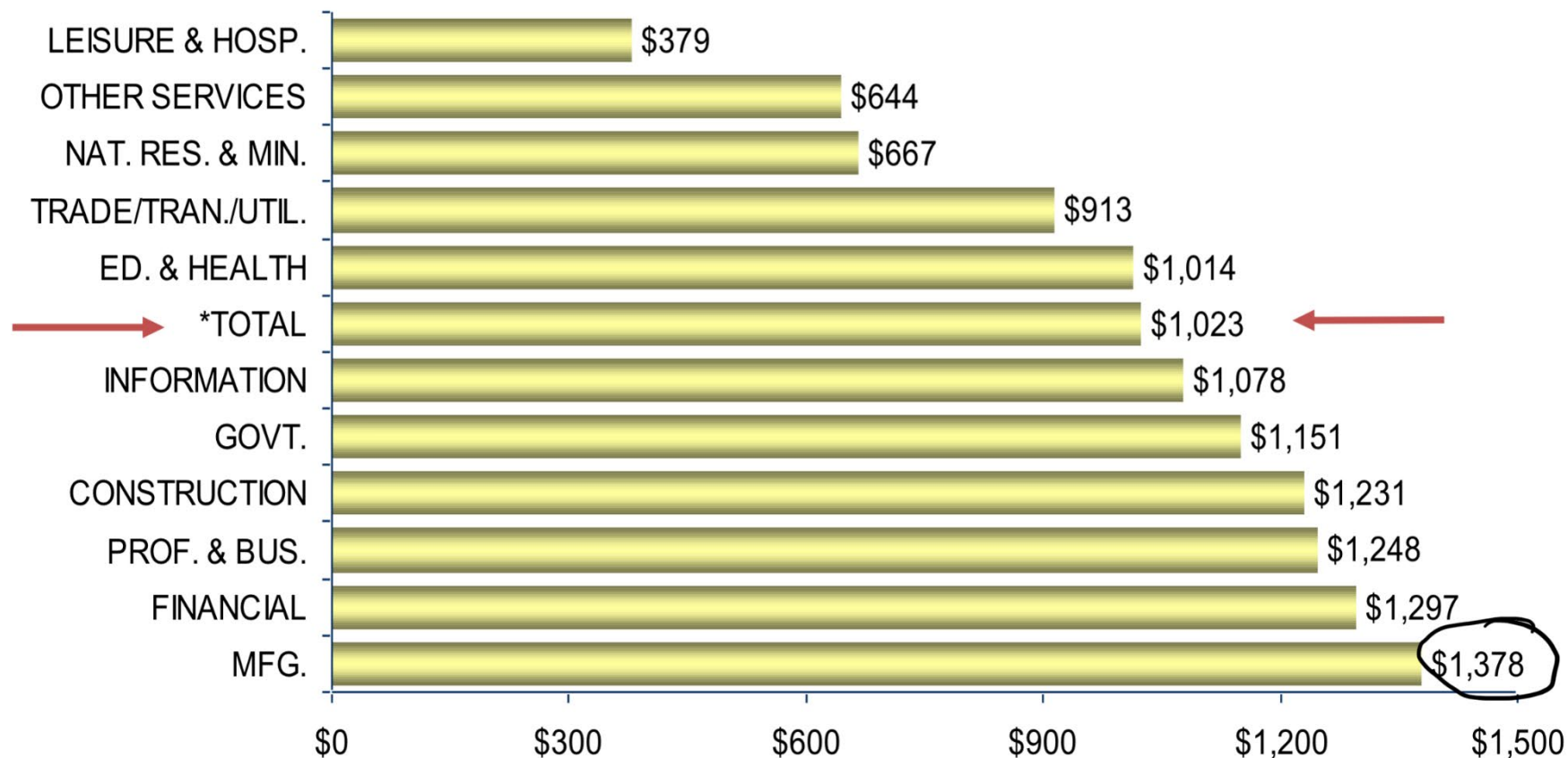
Despite a strong rebound in manufacturing industries since the recession, hiring has not kept pace.



SOURCE: BEA, BLS

msnbc.com

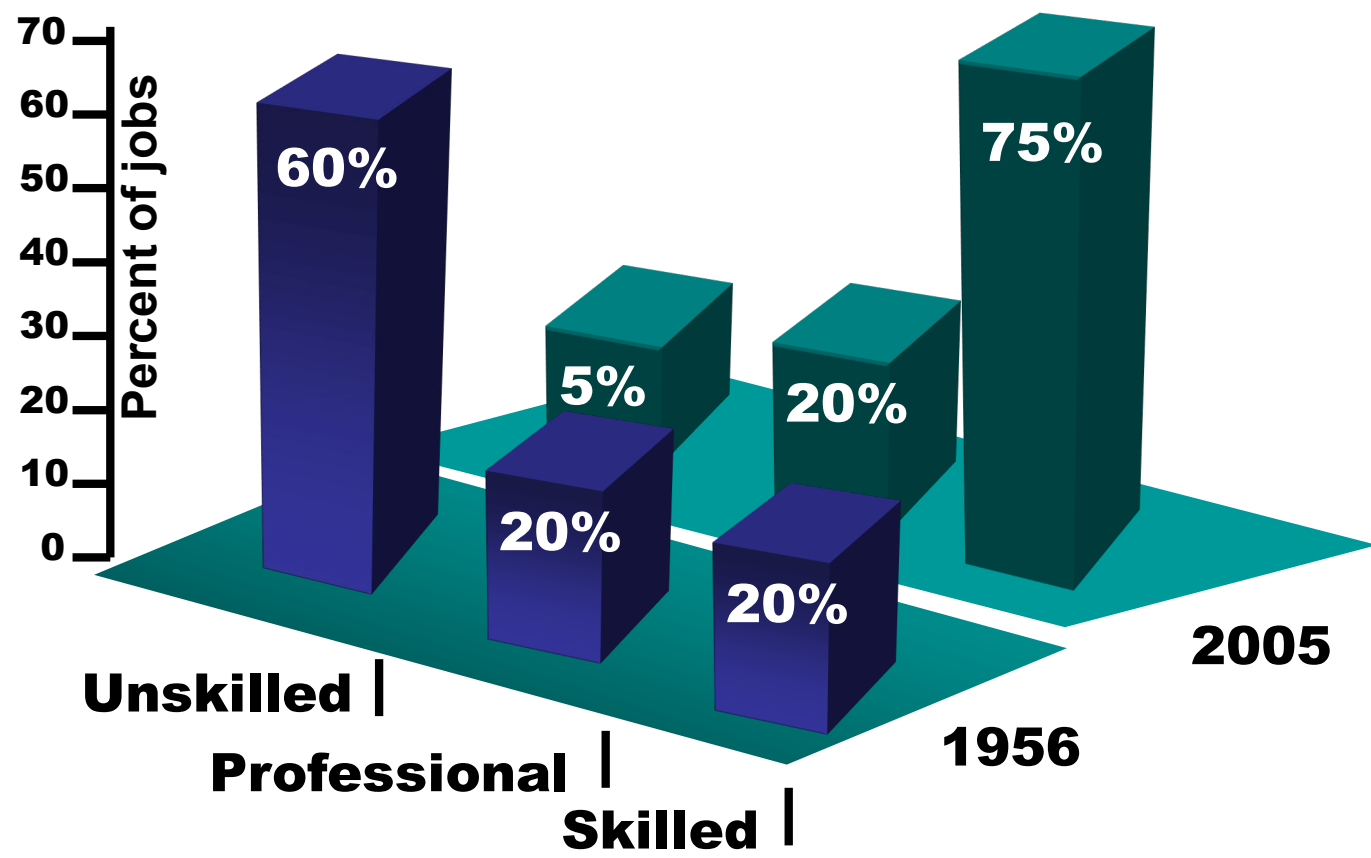
Average Weekly Wage by Industry, 4th Quarter 2018



Source: QCEW

* The Syracuse MSA includes Onondaga, Madison & Oswego counties.

Workforce Skills Level Needed



Our Pathways approach...

Middle School

- Increasing career exploration
- CNY Innovation Challenge
- Pre-CTE
- Coding Camp- girls

High School

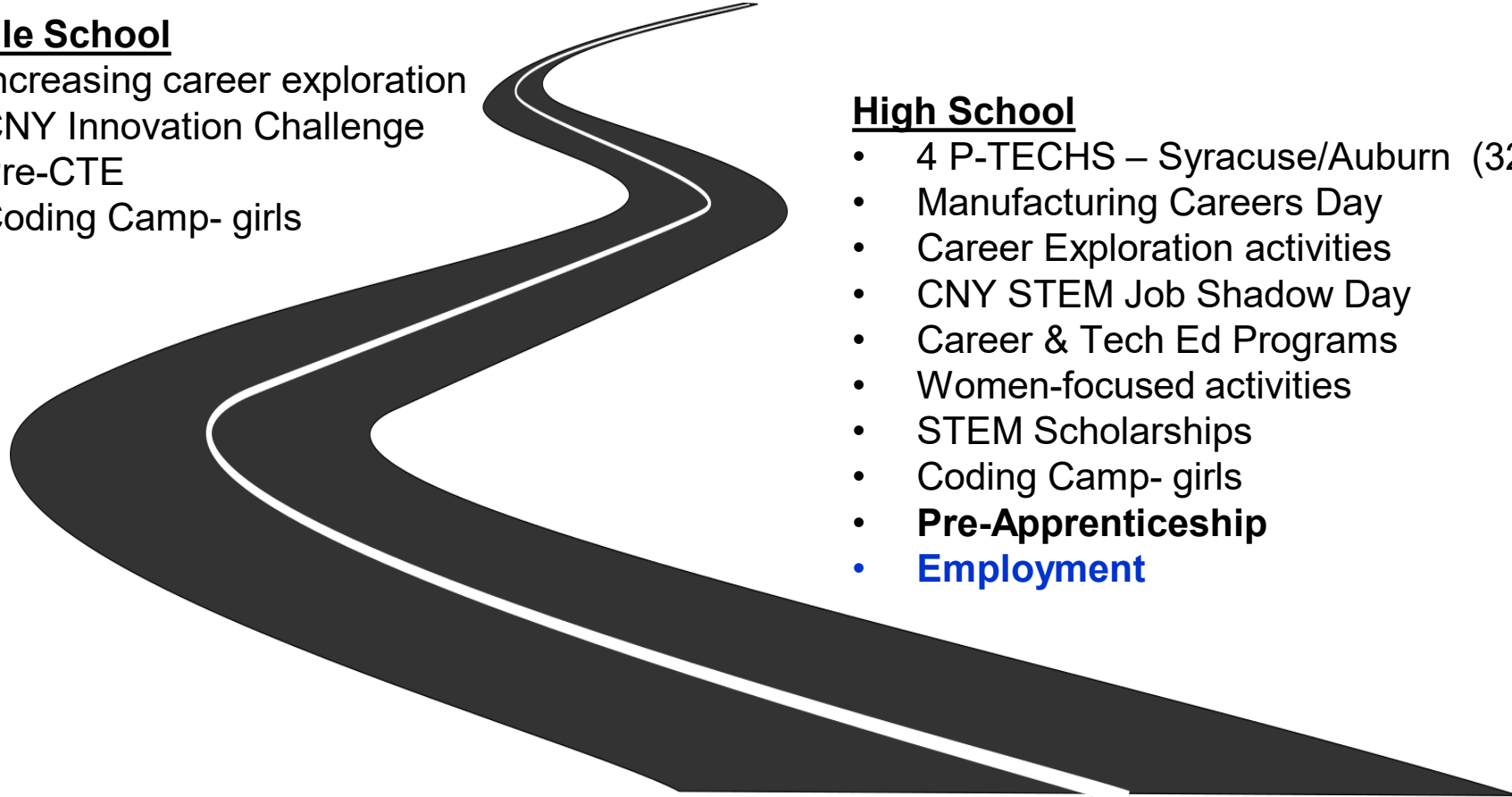
- 4 P-TECHS – Syracuse/Auburn (325)
- Manufacturing Careers Day
- Career Exploration activities
- CNY STEM Job Shadow Day
- Career & Tech Ed Programs
- Women-focused activities
- STEM Scholarships
- Coding Camp- girls
- **Pre-Apprenticeship**
- **Employment**

Supports

- Annual Awards Program- June 12
- MACNY Newsletter/Website
- CNY STEM Hub/CNY Tech Sector
- Mentoring/Career Coaching at all levels

Post-secondary/Career

- STEM Scholars Connection
- Internships
- **Employment- JOB SIGNING DAY**
- Apprenticeships



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Clusters of Industries

What are Clusters?

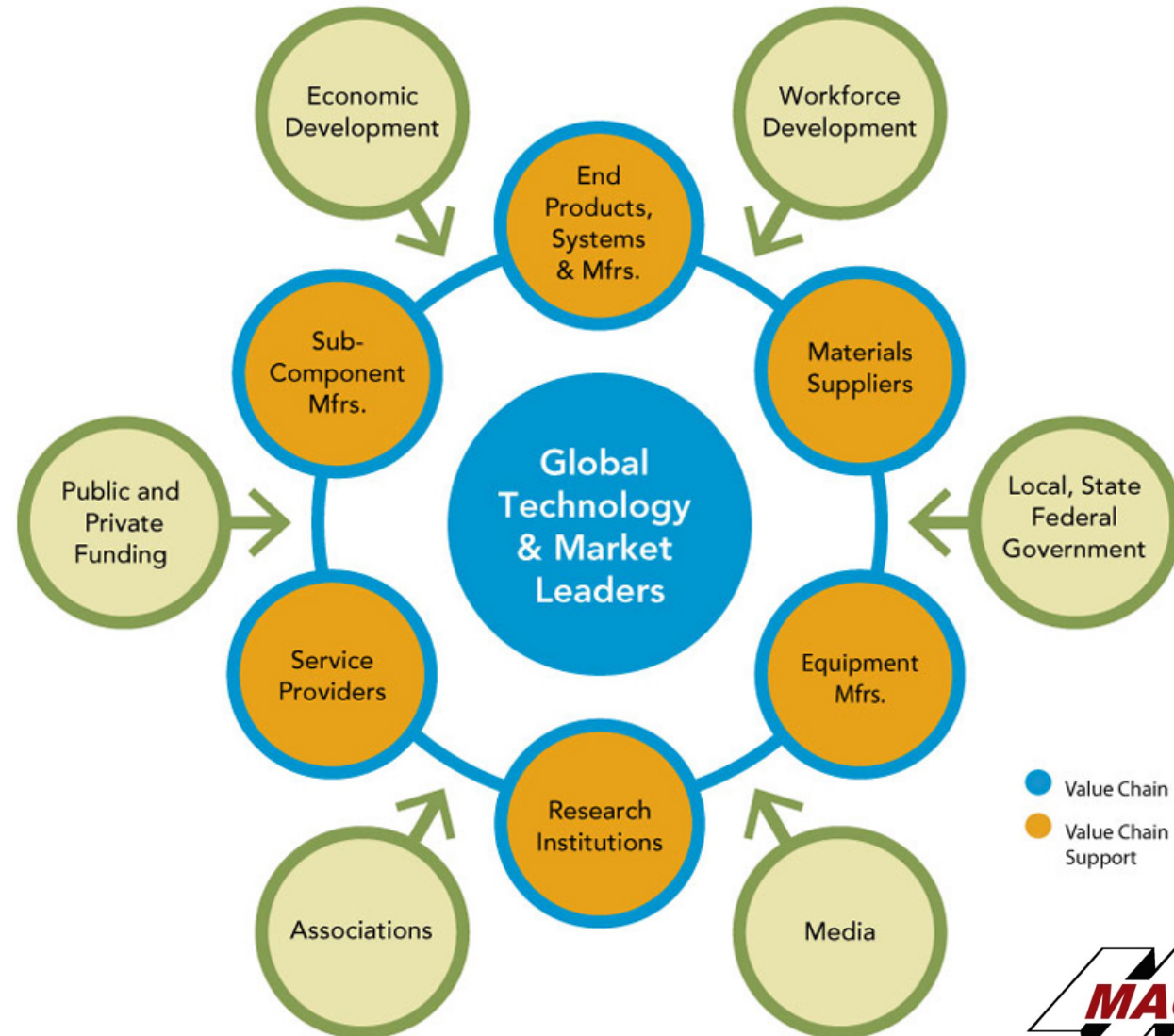


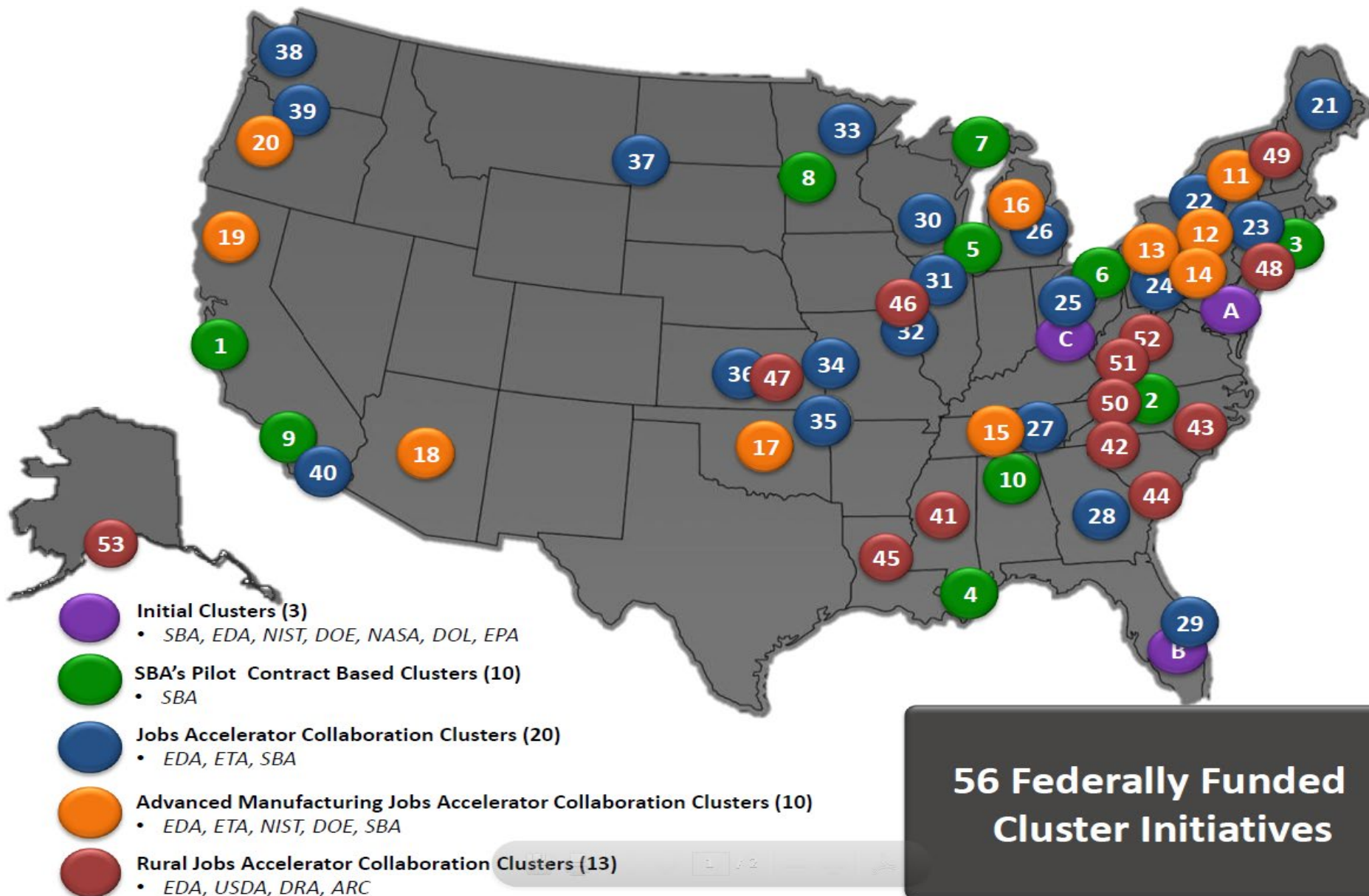
Clusters are geographic concentrations of interconnected businesses, suppliers, service providers, and associated institutions in a particular sector.

As defined by The Brookings Institution,



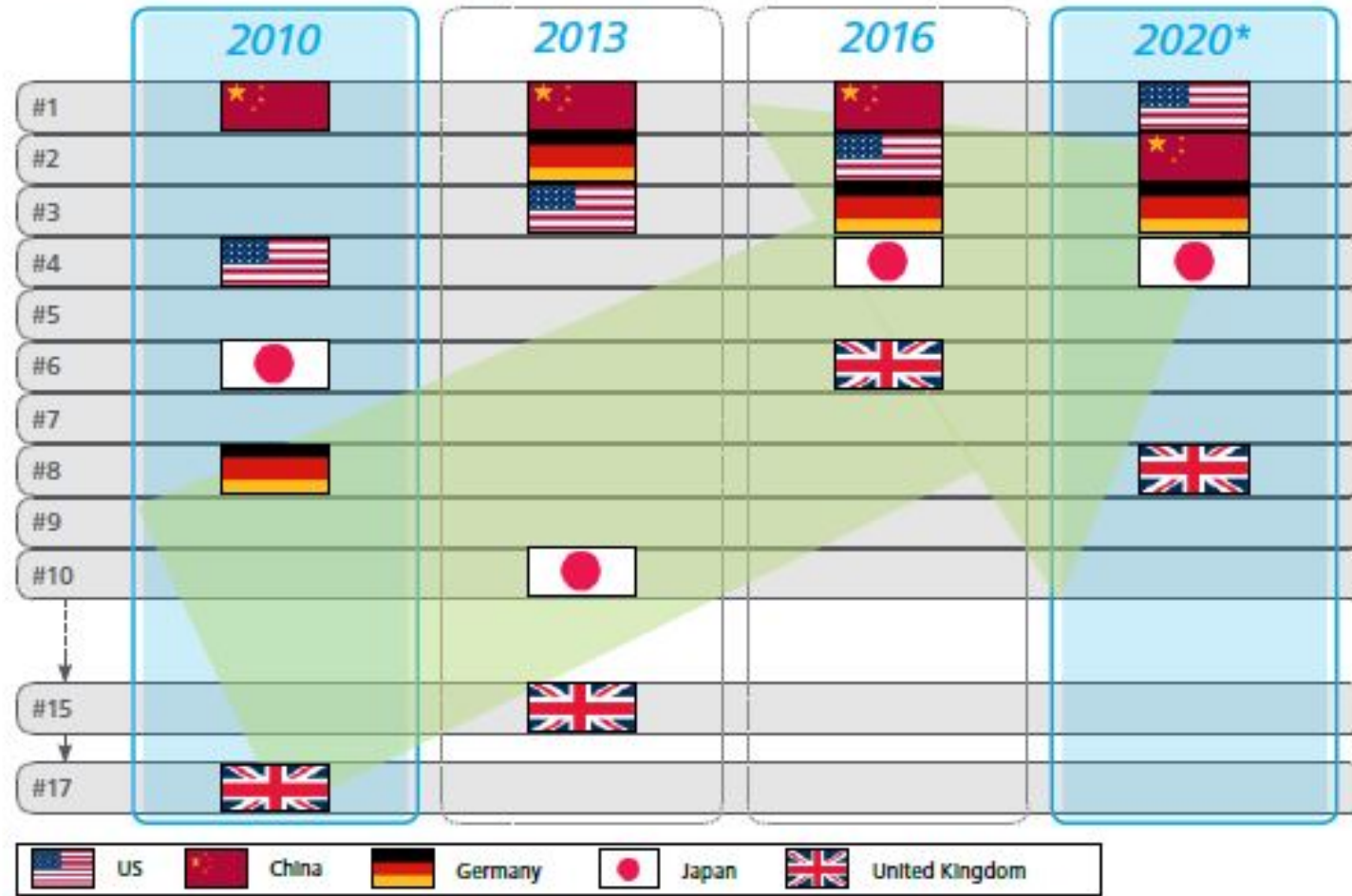
What is a Cluster?





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Figure 1: Global CEO survey: Manufacturing powerhouse rank trending and future forecast

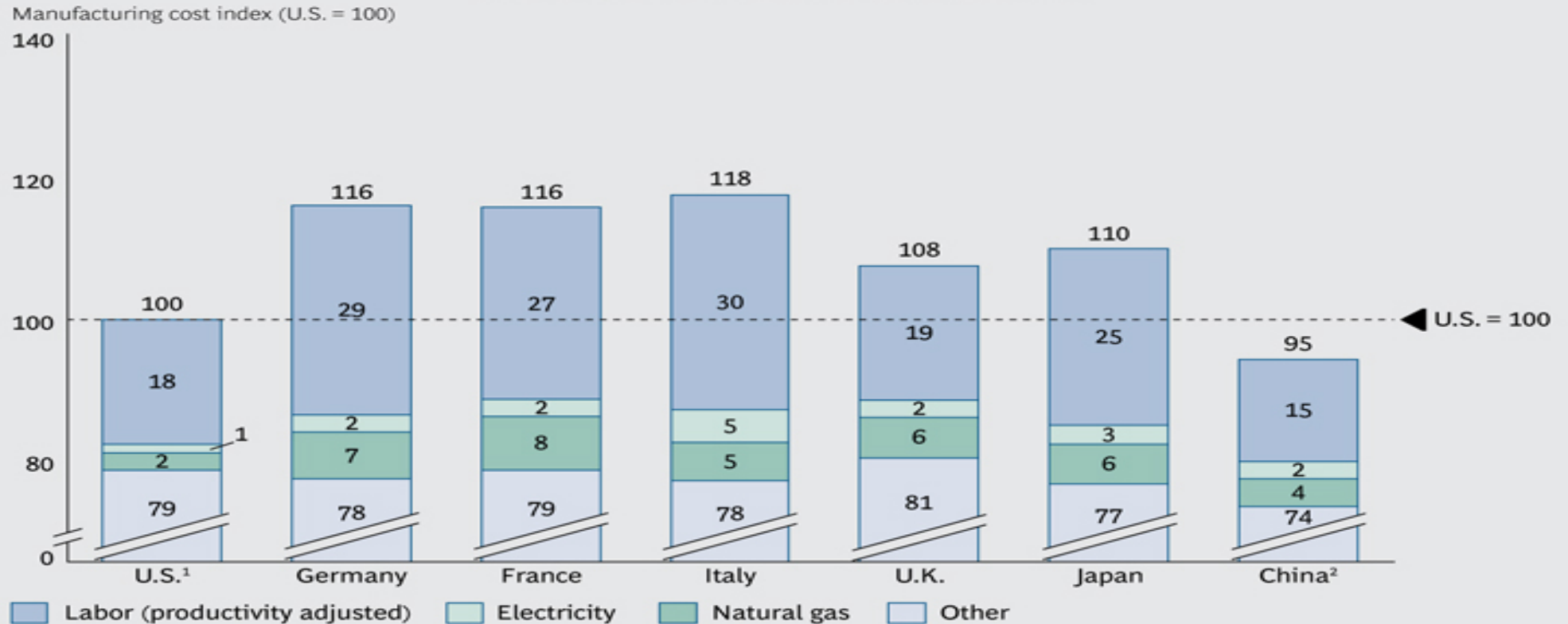


Source: Deloitte and US Council on Competitiveness, 2016 Global Manufacturing Competitiveness Index
* represents projected 2020 ranks

US as Low Cost?

EXHIBIT 1 | Labor and Energy Cost Advantages Will Make the U.S. One of the Developed World's Lowest-Cost Countries

Average projected manufacturing cost structures of the major exporting nations relative to the U.S., 2015



Sources: U.S. Economic Census; U.S. Bureau of Labor Statistics; U.S. Bureau of Economic Analysis; International Labour Organization.

Note: Cost structures were calculated as a weighted average across all industries. No difference was assumed in "other" costs (e.g., raw materials inputs and machine and tool depreciation). Differences in values are a function of the industry mix of each exporting country.

¹U.S. figures represent costs in a set of select lower-cost states specified in previous publications.

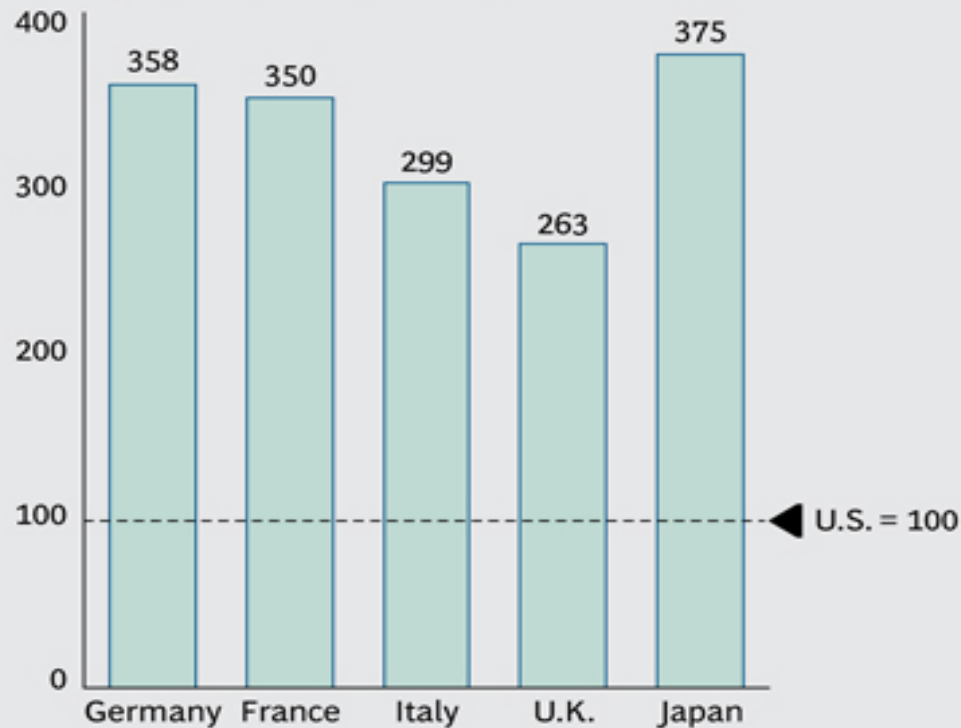
²Chinese figures represent the Yangtze River Delta region.

Abundant Natural Gas

EXHIBIT 3 | Abundant Natural Gas Has Led to a Large Energy-Cost Advantage for Domestic Manufacturers in the U.S.

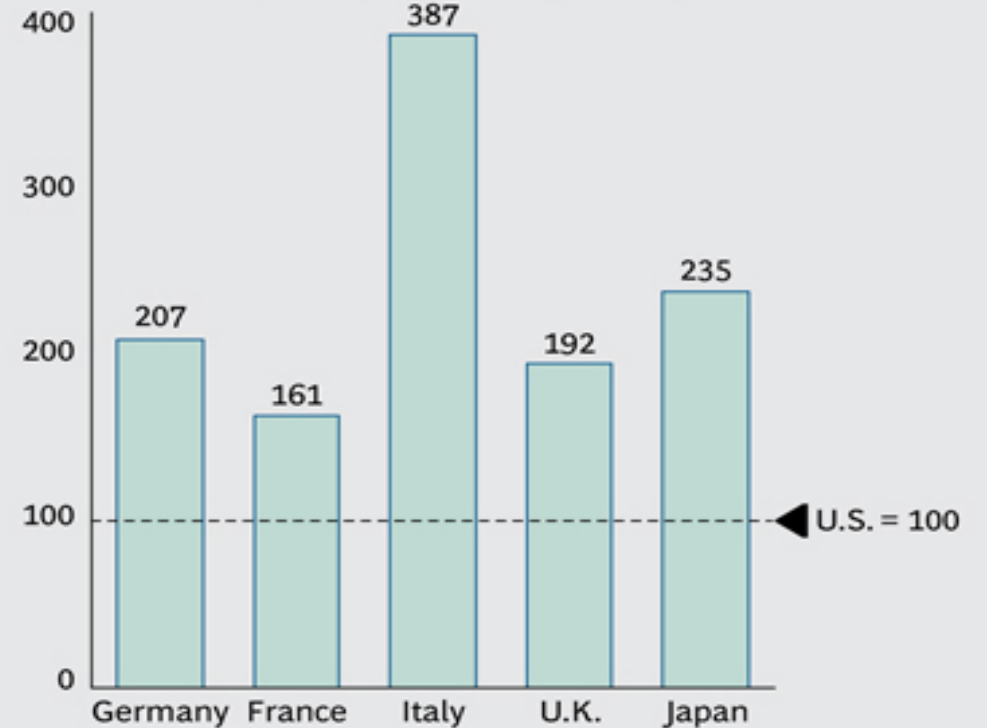
Natural gas prices in other major manufacturing economies are around 2.6 to 3.8 times higher than in the U.S....

Natural gas prices (indexed, U.S. = 100)



...and industrial electricity prices are around 1.6 to 3.9 times higher

Industrial electricity prices, 2012 (indexed, U.S. = 100)





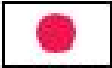

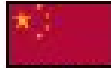







Sources: International Energy Agency quarterly energy price and tax statistics; BCG analysis.

Note: Energy prices based on 2012 averages.

Linking drivers of competitiveness and country performance

Table 6: Global CEO survey: Focus country performance by key competitiveness drivers

Selected country manufacturing competitiveness drivers

	 United States	 Germany	 Japan	 South Korea	 China	 India
 TALENT	89.5	97.4	88.7	64.9	55.5	51.5
 INNOVATION POLICY AND INFRASTRUCTURE	98.7	93.9	87.8	65.4	47.1	32.8
 COST COMPETITIVENESS	39.3	37.2	38.1	59.5	96.3	83.5
 ENERGY POLICY	68.9	66.0	62.3	50.1	40.3	25.7
 PHYSICAL INFRASTRUCTURE	90.8	100.0	89.9	69.2	55.7	10.0
 LEGAL AND REGULATORY ENVIRONMENT	88.3	89.3	78.9	57.2	24.7	18.8

Most competitive

Least competitive

Source: Deloitte Touche Tohmatsu Limited and US Council on Competitiveness, 2016 Global Manufacturing Competitiveness Index

GROWTH CLUSTERS IN CNY

According to Battelle's findings, the clusters with the greatest prospects for growth are:

- (1) biosciences
- (2) digital and electronic devices
- (3) environmental systems (AMTEC)
- (4) packaging
- (5) precision metalworking

For all but the biosciences cluster, the potential clusters are at least 40 percent more concentrated in the region than they are nationally, with environmental systems four times more concentrated.

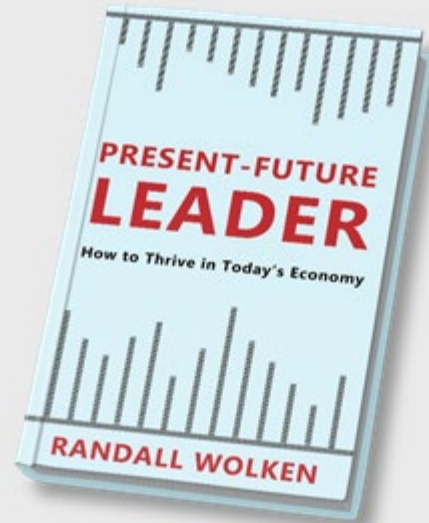
CHALLENGES FACING NYS MANUFACTURERS

- » **Global Competition**
- » **Use of Unfair Trade Practices**
- » **Increases in Costs Burden on Manufacturing (ie. Taxes and Regulations)**
- » **Speed of Technological Change**
- » **Shifting of growth markets to Developing World**
- » **Growing Skills Gap and Difficulty in Finding Talent**

OPPORTUNITIES IN MANUFACTURING

- » Global Growth Opportunities
- » Direct Foreign Investment in the US
- » Increasing cost competitiveness of US Manufacturing
- » Use of Technology
- » Conversation concerning use of Fair Trade Practices

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THANK YOU

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