TANGENTS

Business Location Strategy: The What, Where and How of Being Competitive....Today

BOB HESS
Vice Chairman and Managing Principal
Newmark Knight Frank, Global Strategy Practice

Newmark Knight Frank

AGENDA

- Who’s Bob?
- What is Changing?
  - Office and Industrial Environments
  - Factors in US Business Climate
- Perspectives for the Future……and You
- Questions

Newmark Knight Frank

Bob's a special kind of friend.
The kind that drives you crazy.

What about BOB?

No really….**what about Bob**?

M.B.A, B.A. in Geography and Urban Planning

Exec Education MIT, Oxford, Wharton and Northwestern

+150K flight miles annually (ouch!)

30+ years: corporate location, site selection & real estate

275 corporate + 50 economic development engagements

75 speaking engagements + interviews + publishing

UMD
University of Minnesota Duluth
Driven to Discover



THE FANTUS COMPANY
Location Consultants

SITE SELECTORS GUILD

Newmark Knight Frank

The Mighty Carnac: *"I see….maybe….could be….you never know!"*

Nestlé

NOVARTIS

NIKE

thyssenkrupp

KOHL'S

SAMSUNG

GAP Gap

McAfee

Panasonic

AK Steel

amazon NEW YORK STATE

asos

BOEING

CORNING

Framework

Where will talent reside?
Changing suburbs
Demographic shift

What are universities doing?
What is OSU doing?

Office Environments

Talent
Is there a crunch?
Jobs of tomorrow
Office of tomorrow

Flexibility
Coworking

Players
Developers
Brokers
Occupiers

Industrial Environments

Workforce
Humans and A.I.
Automated factories
A.I. related jobs

eCommerce
A.I. In retail
The Amazon effect

Green Tech
Automotive sector
Logistics
Power generation

Energy Systems + Infrastructure
Quality of a Sites
Business Climate/Regulations: Tariffs + Trade Wars

Where will industry go?
Smart factories
Disperse or consolidate?

Community Colleges
Workforce of tomorrow?

OFFICE ENVIRONMENT

Newmark
Knight Frank

Workplace flexibility is here to stay

Newmark Knight Frank

No one likes open offices. No one ever did.

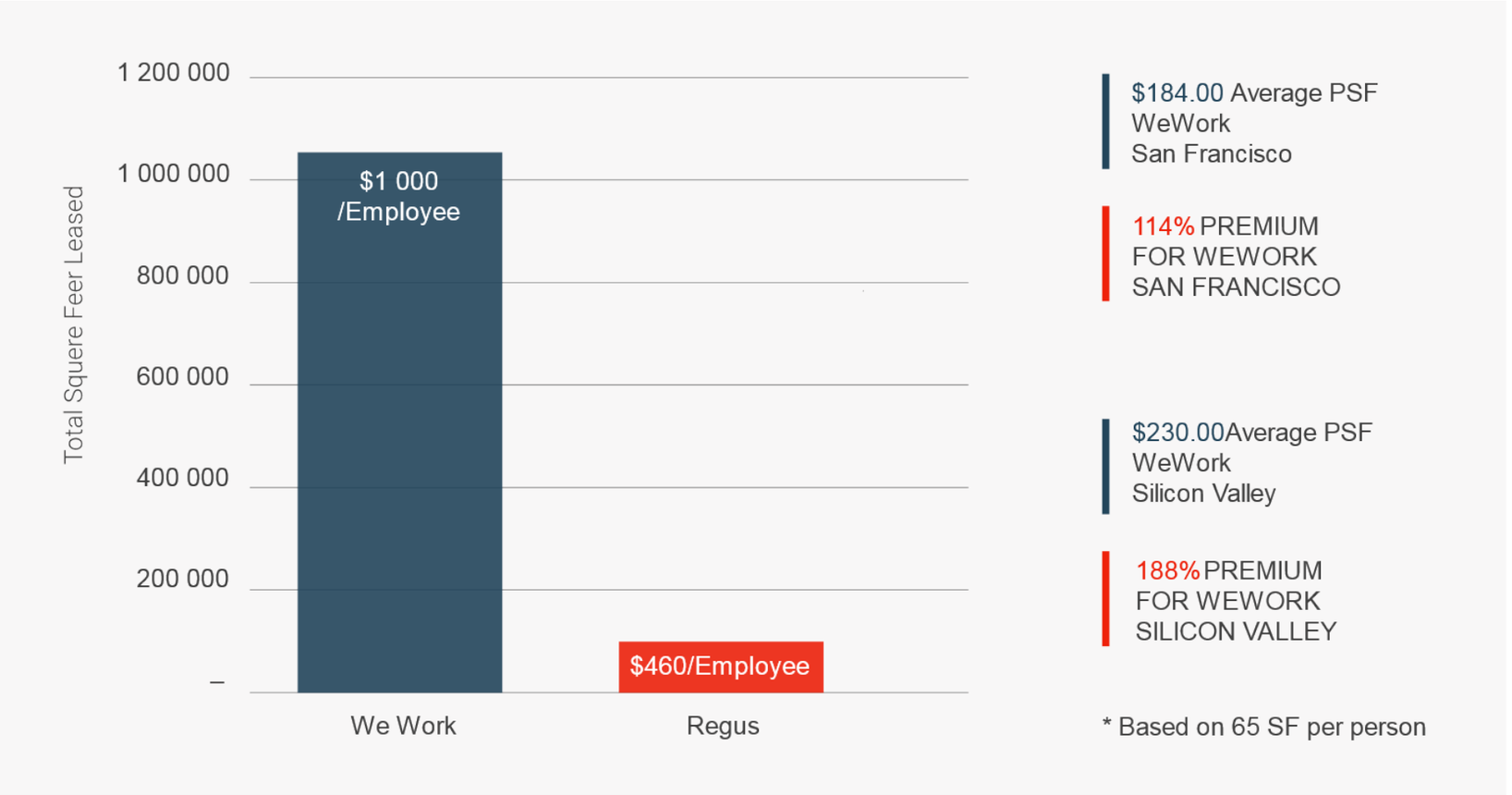
The open office plan is not new. Employees hated them in 1900; they still hate them.

They are touted by CEOs as spaces that promote interaction. They never say that it is just to keep the occupancy cost down.

Focused work is difficult in open offices as distractions make most employees less productive.

They may give an illusion of being flexible, but open offices are not necessarily that. They just allow for greater density and lower cost.

What did coworking change?



Source: NKF Research

Variety of space – when, where, and how people work

Flex leases to manage uncertainty

User data mined for customization and marketing

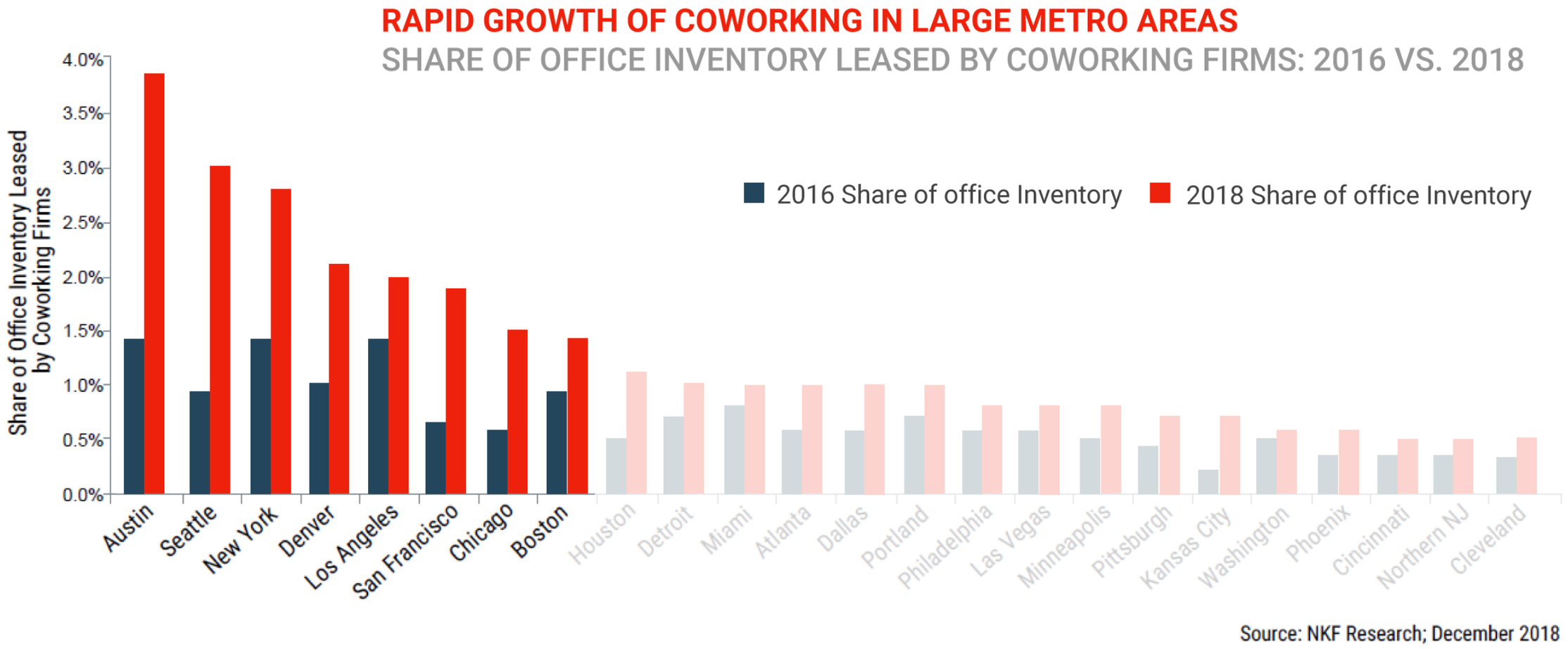
But it doesn't come cheap.

If long-term horizon is known, then a regular office lease is a lot cheaper.

However, coworking environment is here to stay.

Flex office is most valued in tech markets

Flex solutions are a good fit for hyper-growth and unpredictability of early stage tech companies.



Source: NKF Research; December 2018

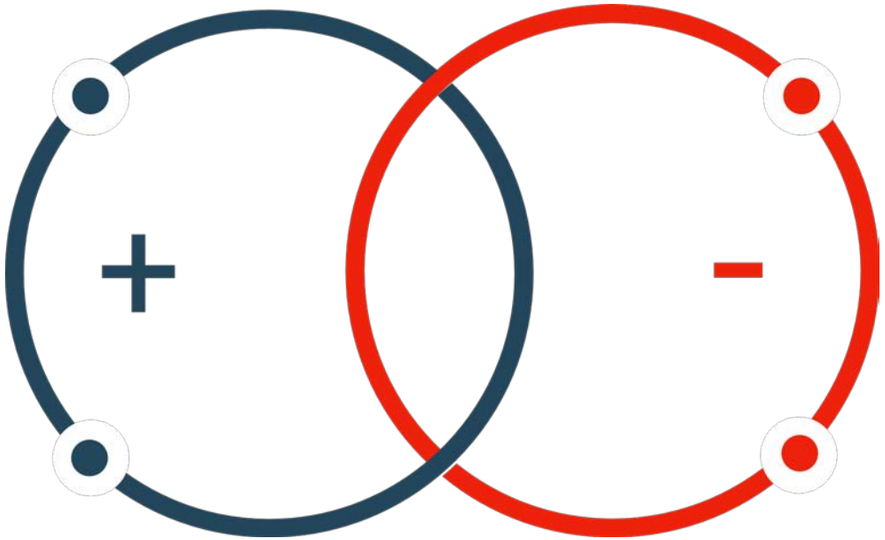
Pros and cons of coworking spaces

Most users report greater job satisfaction due to social nature of coworking spaces.

Source: Harvard Business Review

74% users report greater productivity due to mobility and variety of spaces.

Source: Harvard Business Review



Coworking space doesn't save space per person because of the high percent of collaborative and specialized spaces.

Source: Newmark Knight Frank Workplace Team

Due to interconnected Internet of Technology (IoT) devices, data privacy concerns are increasing. Can employers access their employees' personal data?

Source: Newmark Knight Frank Workplace Team

Is there a shortage of talent?

Newmark Knight Frank

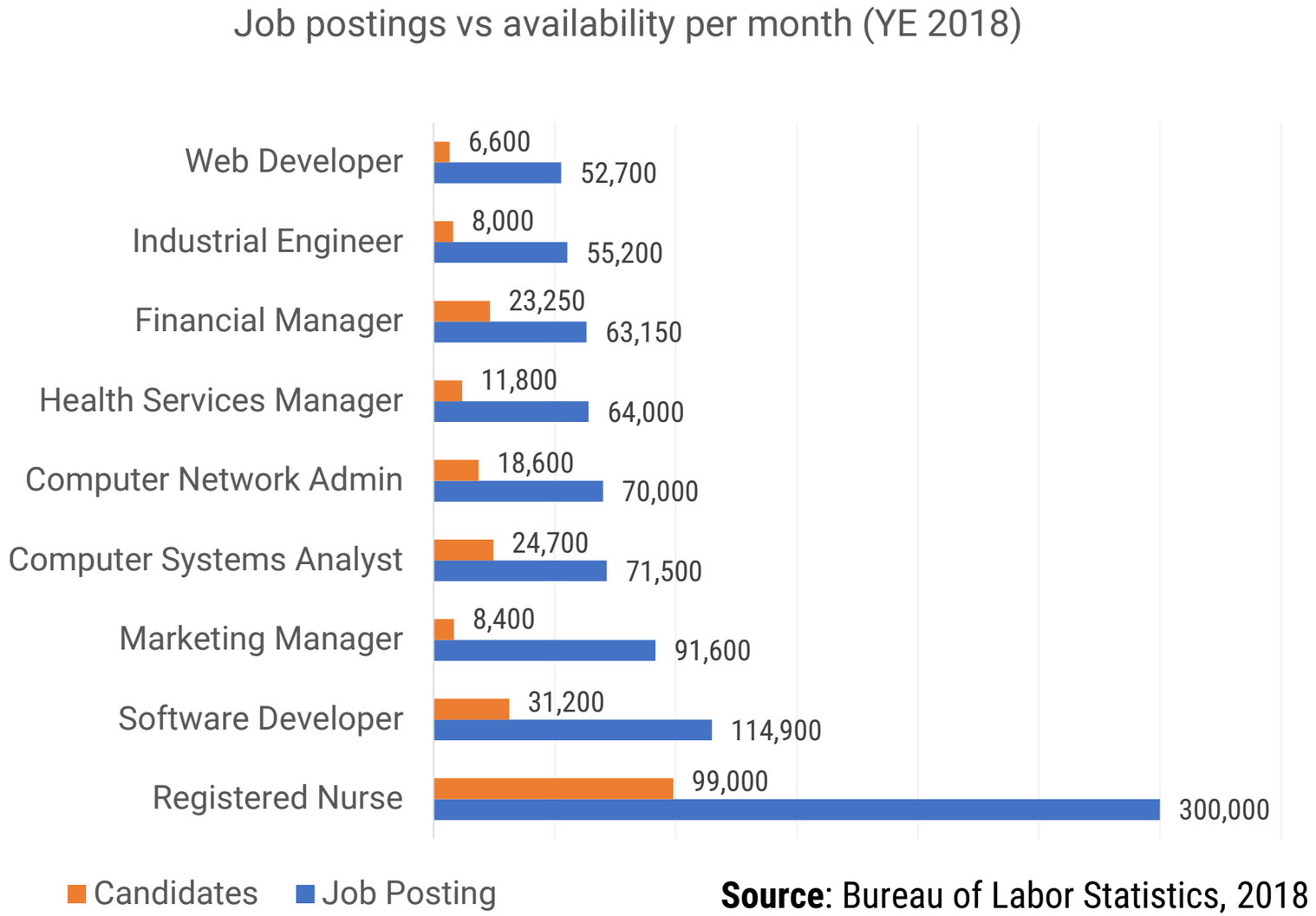
Tech and healthcare professionals are in short supply

College-educated people have just **2.2% unemployment.**

Technology and healthcare professionals are in **high demand.**

Cybersecurity is projected to have the greatest demand in tech occupations.

As the population ages, demand for **nurses** will become increase.



Source: Bureau of Labor Statistics, 2018

Non-STEM grads today are more likely to be unemployed

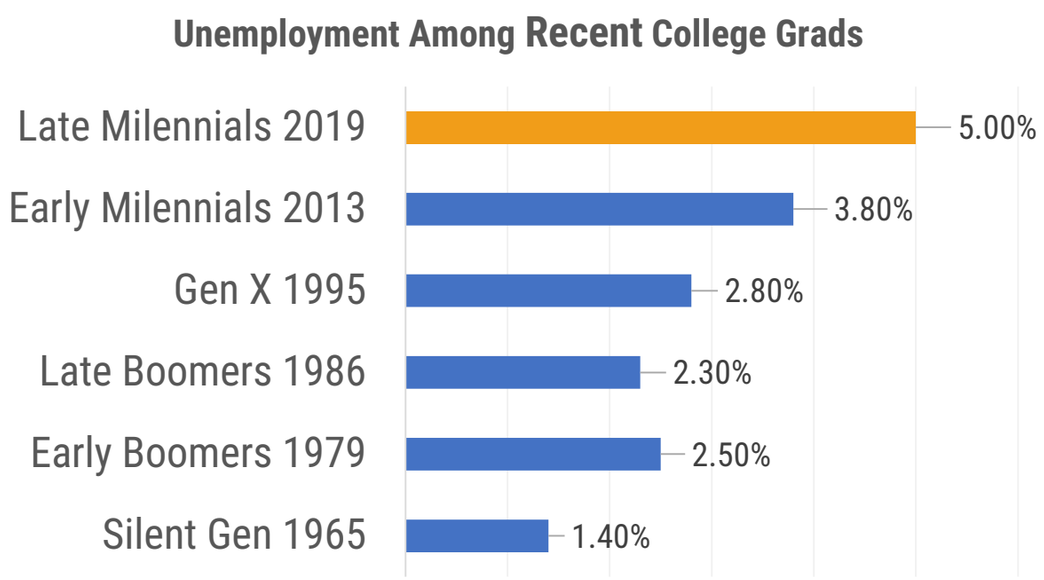
College graduation has grown from 13% in 1965 to 35% among 21-35 year old youth.

More 21-35 year old youth with non-STEM college degrees are without jobs today than ever before.

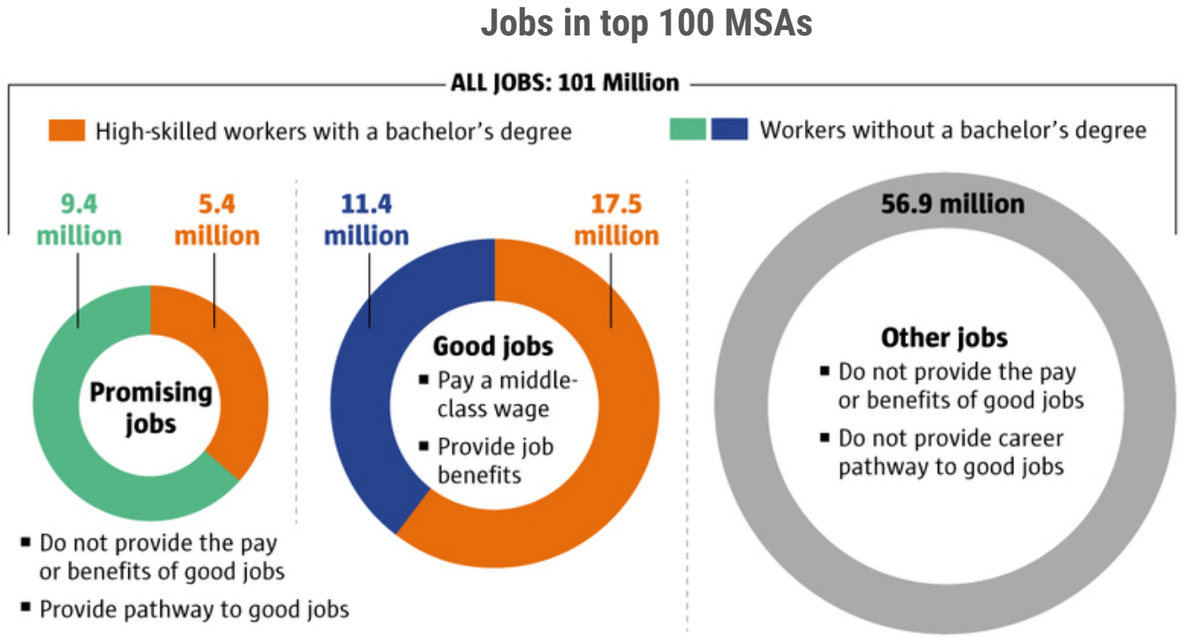
Unemployment is low nationally, but 3 out of 5 jobs don't qualify as "good" or "promising".

These are the jobs that could go away with automation and the rise of A.I.

Those who lose these jobs will be the least prepared to adapt to the new economy.



Source: Bureau of Labor Statistics, Jan 2019



Source: Brookings Institute, Feb 2018

Rural job creation hasn’t kept pace with metro areas

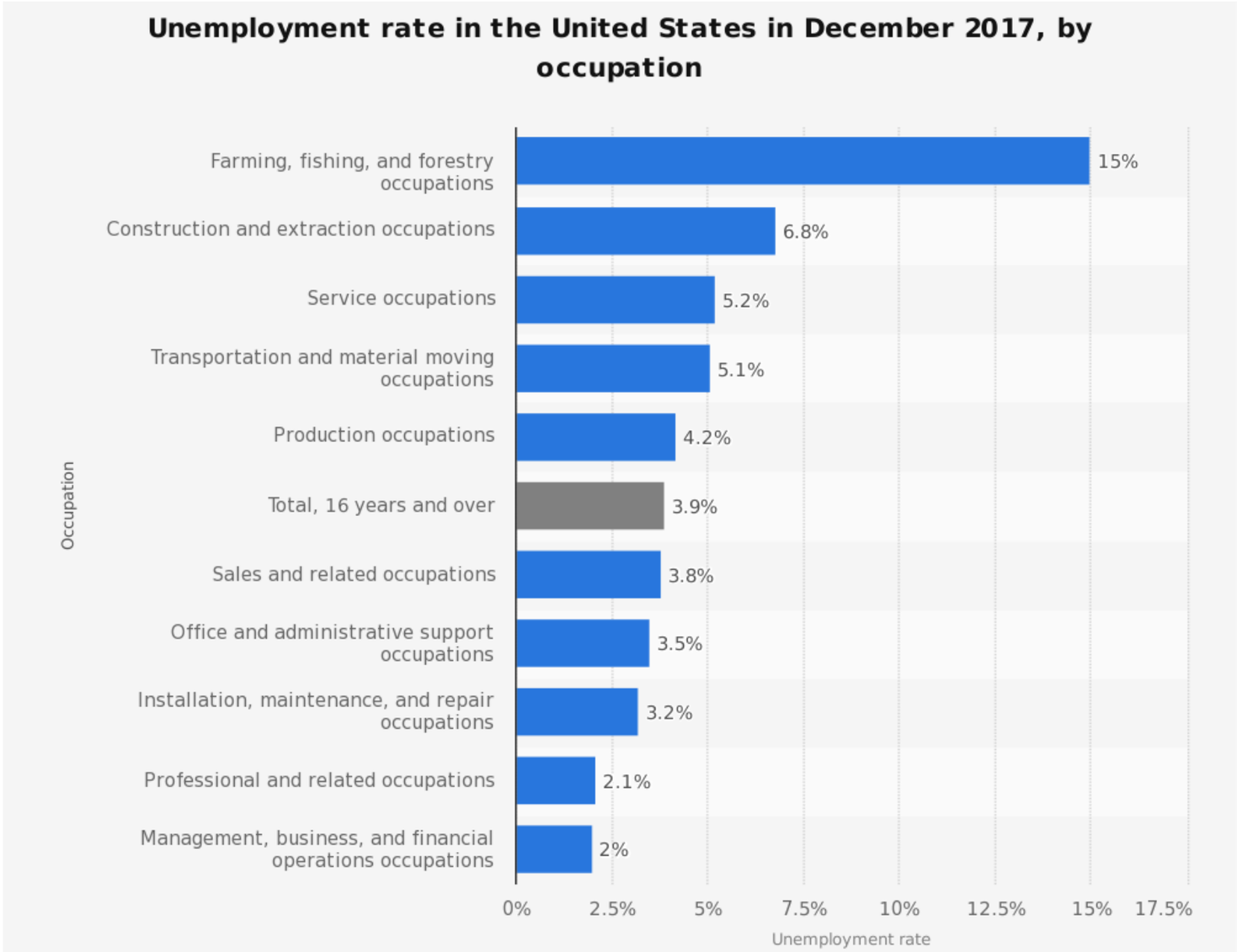
Aging population and outmigration has reduced the population and workforce.

Lower fertility rate has maintained the population decline.

Opioid crisis has disproportionately affected rural populations.

Immigration policies have reduced access to migrant farm workers but the rural unemployed don’t take those jobs.

Rural youth attend college in lower numbers. Most new jobs require college or technical education



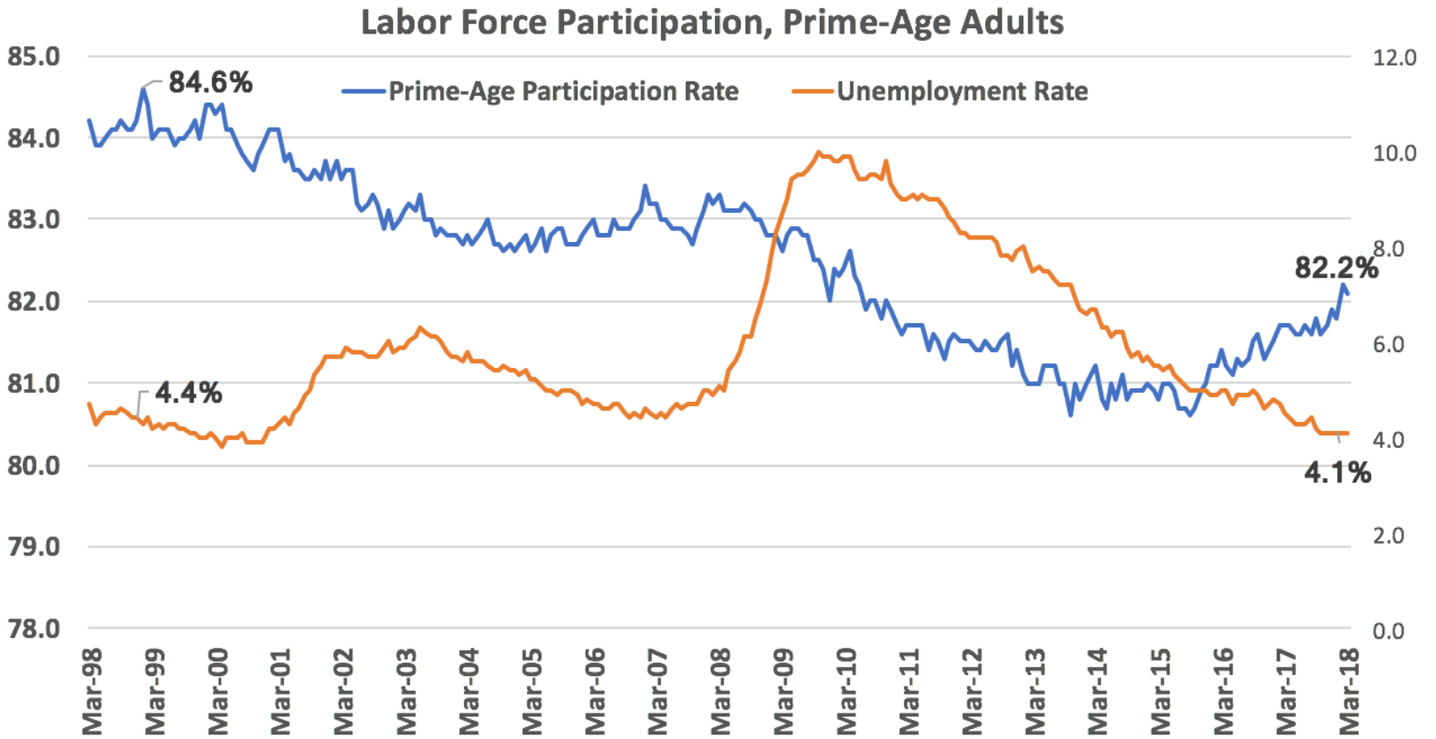
Newmark Knight Frank

Labor participation is low for a “full employment” economy

Mismatch between where jobs are and where people live.

New jobs require higher education or training and rural areas don’t have access to such opportunities.

“Temp” or “gig” jobs are not considered full-time jobs and this segment is growing rapidly both at the high and low end of earning.



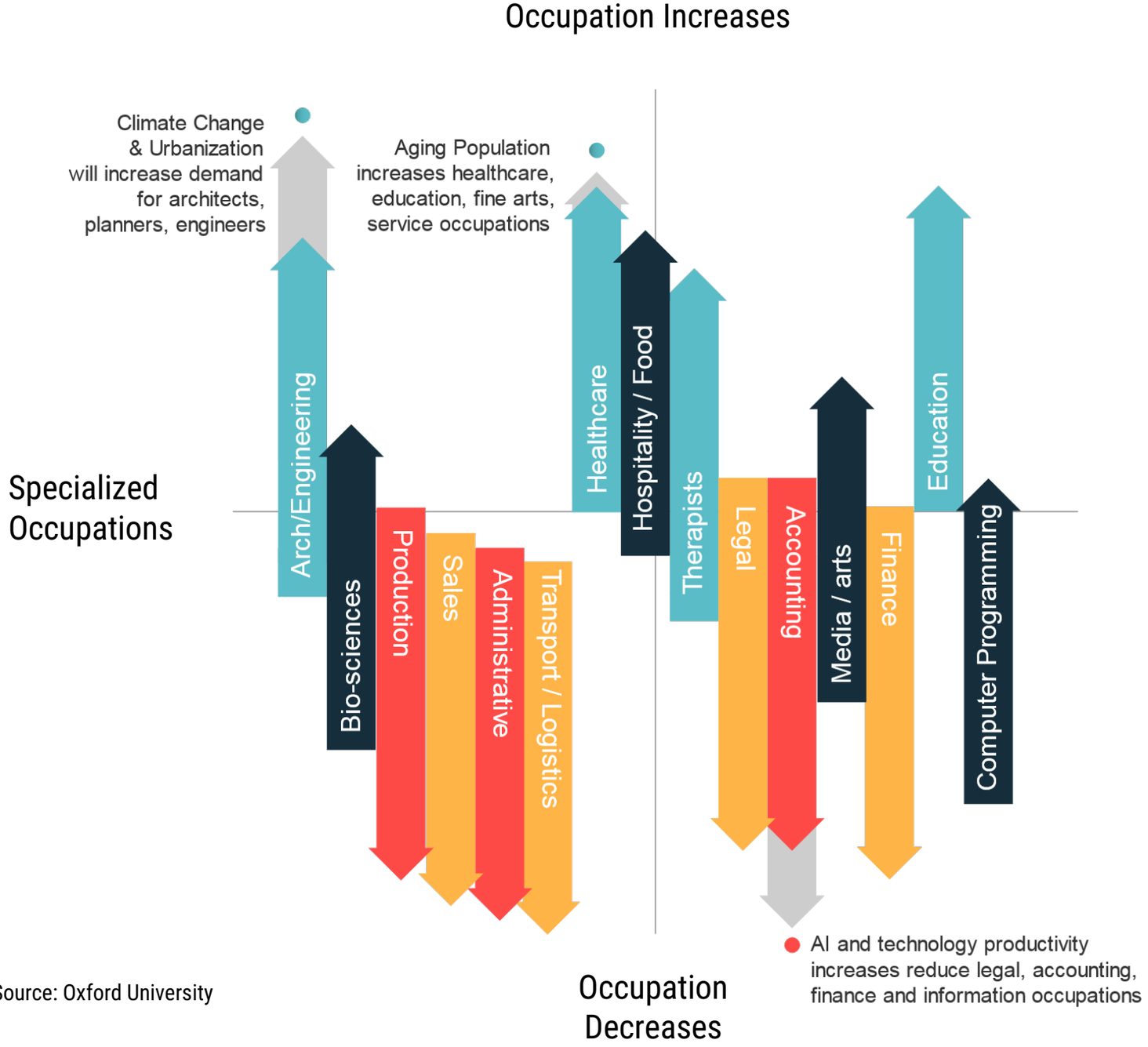
Note: “Prime-age” adults are adults ages 25 to 54.
Source: U.S. Bureau of Labor Statistics

Source: US Bureau of Labor Statistics, March 2018

AI impacts on jobs

Repeatable actions and codified occupations (legal, accounting, finance) could be replaced by technology.

Engineering, healthcare, education and occupations requiring human judgement will be more valued.



Source: Oxford University

Characteristics of the jobs of the future

Problem solving, critical thinking and creativity will be the most desired traits in future jobs.

Liberal Arts will see a revival as people management, philosophy, languages and communication will become highly valued.

in 2015	in 2020
1. Complex Problem Solving	1. Complex Problem Solving
2. Coordinating with Others	2. Critical Thinking
3. People Management	3. Creativity
4. Critical Thinking	4. People Management
5. Negotiation	5. Coordinating with Others
6. Quality Control	6. Emotional Intelligence
7. Service Orientation	7. Judgment and Decision Making
8. Judgment and Decision Making	8. Service Orientation
9. Active Listening	9. Negotiation
10. Creativity	10. Cognitive Flexibility

Source: Future of Jobs Report, World Economic Forum

What will humans do in the age of automation and A.I.?

How do we transition the workforce and teach new skills?
Countries that don't manage this well could see political instability.

A.I. will eliminate many existing jobs but will create more and better jobs for a new generation.

Human intervention will be critical to develop and teach A.I. to do new tasks.

A.I. will allow more independent / contract careers than regular jobs.

TRAINERS

People who will teach A.I. to mimic human behavior

EXPLAINERS

People who will bridge the gap between technology and users

SUSTAINERS

People who will monitor A.I. to avoid unintended consequences

Source: MIT Sloan Business Review, 2017

There is a serious shortage of blue-collar workforce

REASONS

- Youth are becoming more educated and moving to the cities. They don't find blue-collar jobs attractive.
- Boomers are retiring. The workforce is shrinking.
- Disability due to drug addiction is disproportionately affecting blue-collar and rural labor.
- There are tighter restrictions on immigration.

IMPLICATIONS

- Blue collar wages have gone up and are rising.
- Employees are offering flex schedules which is luring women into blue-collar jobs.
- Economic development in rural areas / small towns is challenging because of the shrinking workforce.
- Employers are making aggressive plans for automation.

Source: Forbes, The Conference Board 2018

How serious is the blue-collar worker shortage?

300,000
Number of welders needed by 2020
They can earn $90K per year.

$165K
Salary that an experienced truck driver can demand
Rookies still start at $50K but it goes up quickly.

22%
Proportion of women in blue-collar workforce; Was 18% in 2016
More would be interested if schedules were flexible.

15%
Percent of workforce with high school education or less disabled due to drug addiction

Source: Forbes, The Conference Board 2018, HR Dive

Where do today's youth want to live and work?

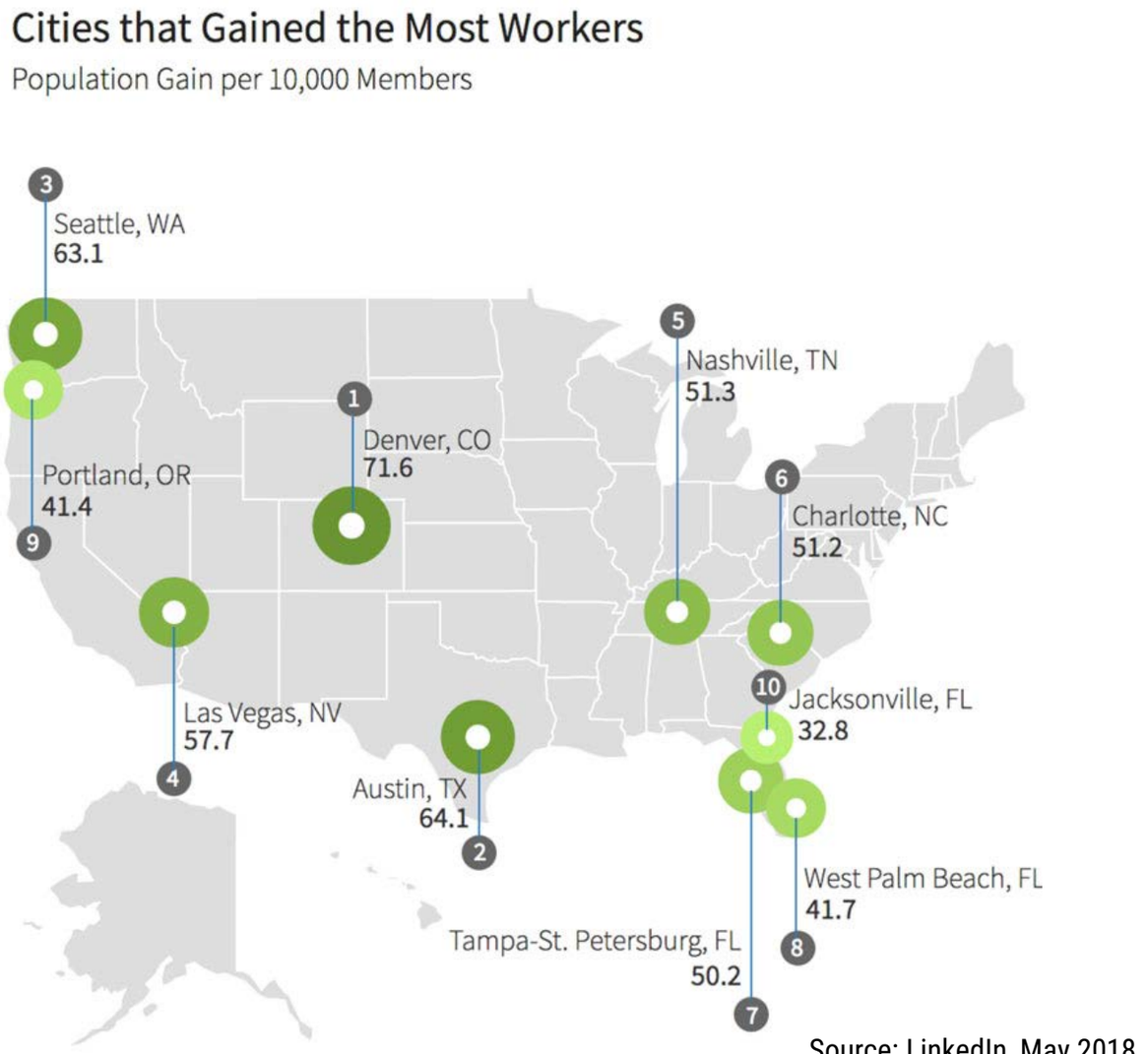
Newmark Knight Frank

Where are the youth going?

Denver, Austin and Seattle gained the most new workers in 2018.

These are the new tech hubs that offer lifestyle and career choices similar to that of the origin cities.

San Francisco, New York and Chicago are the main cities losing their talent to the top three recipient cities.



Source: LinkedIn, May 2018

Which cities are the youth leaving?

The Northeast and the Midwest are losing their youth to the South and the West.

Midwestern cities lose their population primarily to California cities.

Source: LinkedIn, May 2018

Millennials value experiences over buying things

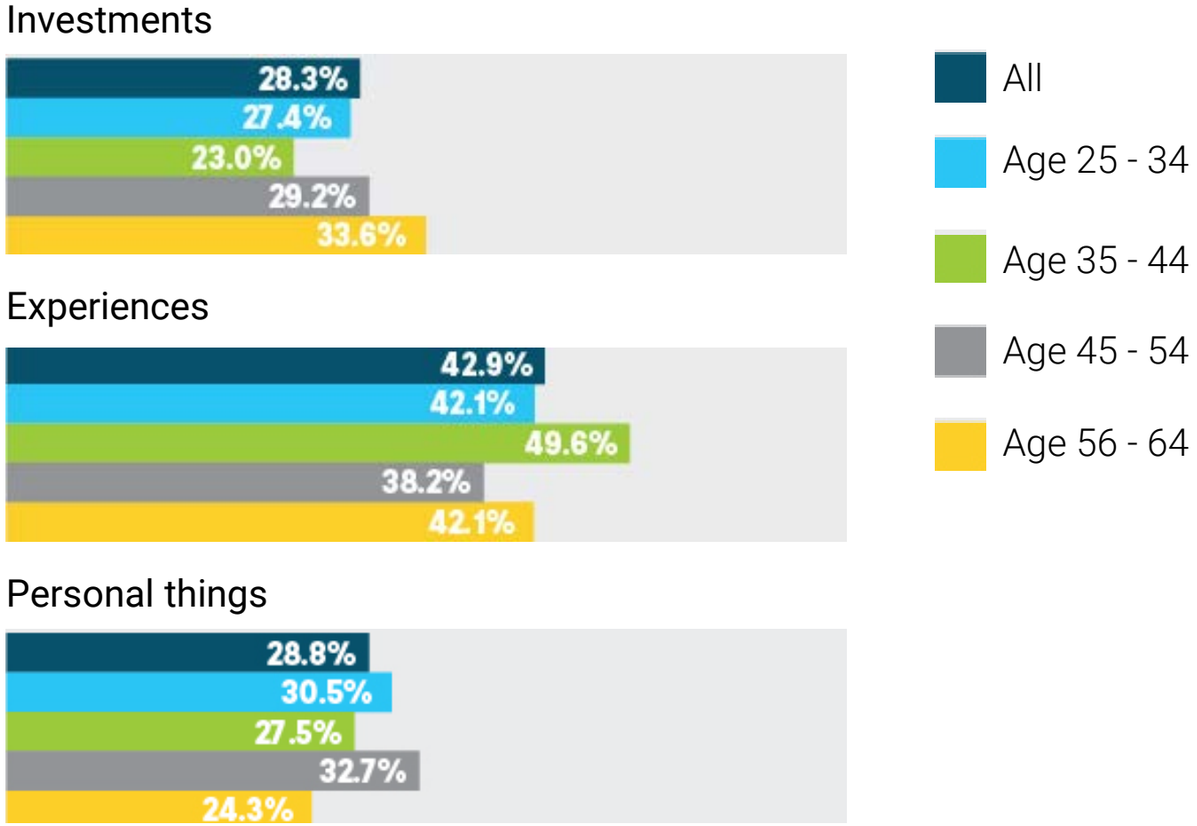
Millennials (Age 24-37) are scarred by the 2008 recession and are choosing to spend modestly on possessions and property.

Bigger cities offer a wider variety of experiences and jobs so the youth are moving to larger cities.

Suburbs are becoming more urbanized as older millennials are moving there but demanding the same lifestyle as they had in the cities.

Diversity and integration in cities is growing.

What do you prefer using money for?
2,081 respondents aged 25-64 across the U.S.



Source: SoFi

Where is the talent coming from?

Newmark Knight Frank

Where is the digital workforce being produced?

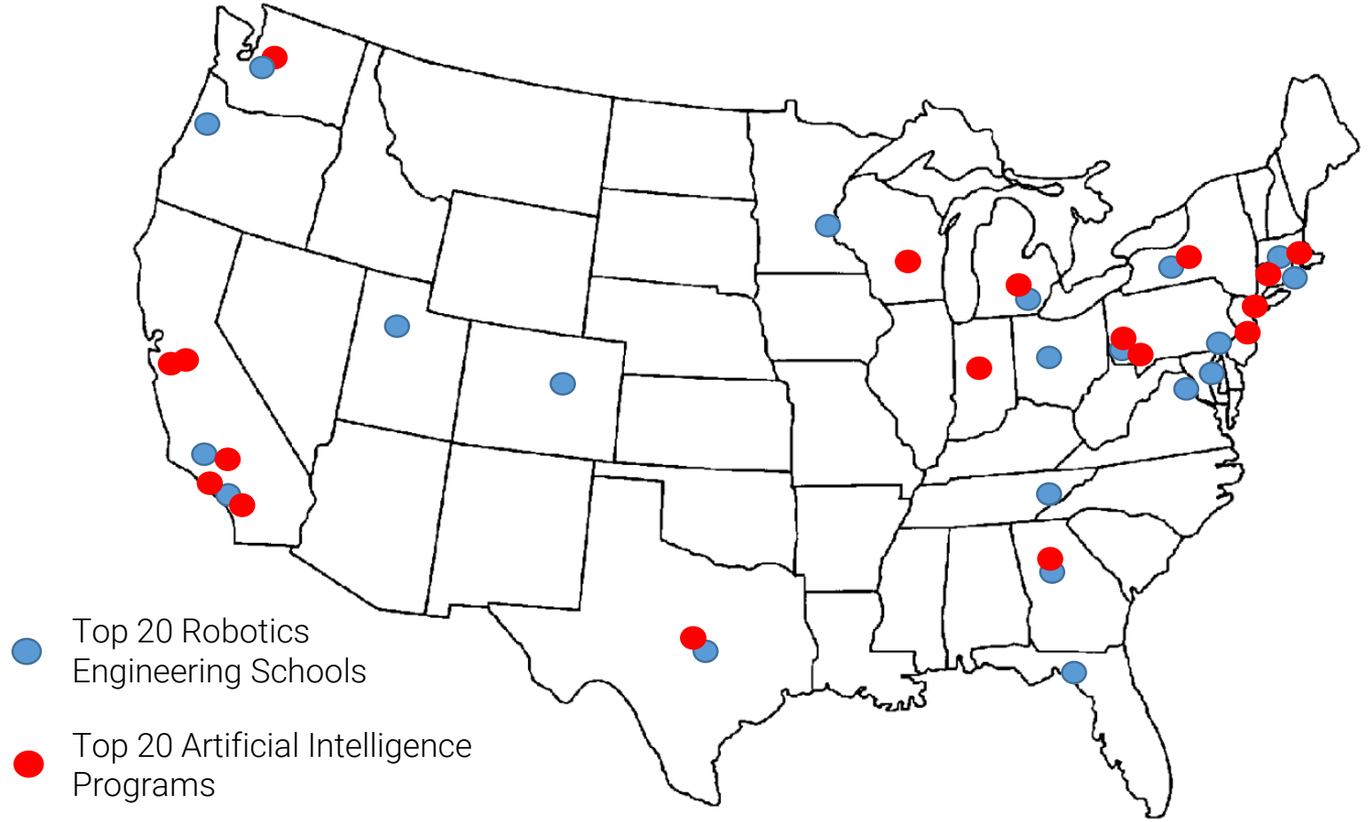
Increase in Robots and AI programs through out the US

2.2% growth in STEM programs (4 year and 2 year)

Industry focused 2 year degrees growing faster than 4 year degree attainment

Few ranked programs in the middle of the country where the effect of automation will be more pronounced

Top ranked robotics and artificial intelligence programs in the US



Source: US News University Rankings 2018

Are community colleges developing talent?

As 4-year degree costs go up, more high school graduates are looking at alternative options.

Industry is focusing on utilizing community colleges programs that offer 2-year certification and apprenticeship programs .

- Google
- Tesla
- Amazon
- IBM

Industry wants trained workforce through pre-certification programs.

Source: The Wall Street Journal, Forbes

Newmark Knight Frank

University incubators drive innovation in communities

- Center of research and innovation
- Studio Concept: VC network participation
- 800 acres in the middle of Columbus
- Startup community is thriving as a result

- A center for commercialization of technologies developed on campus
- Support for student entrepreneurial efforts

Quality of Place and Livability will attract future talent

Newmark Knight Frank

What's your brand?

Boise, ID

Big city amenities in the mountain west

Denver, CO

Transit creates a magnet for Millennials

Greenville, SC

The Main Street attraction

Minneapolis, MN

Where mid-career talent puts down roots

Nashville, TN:

Capitalizing on cool

Pittsburgh, PA:

The Steel City recasts itself for the digital age

Columbus, OH **?**

How do you make a city a “smart city”?

SMART CITY CHALLENGE

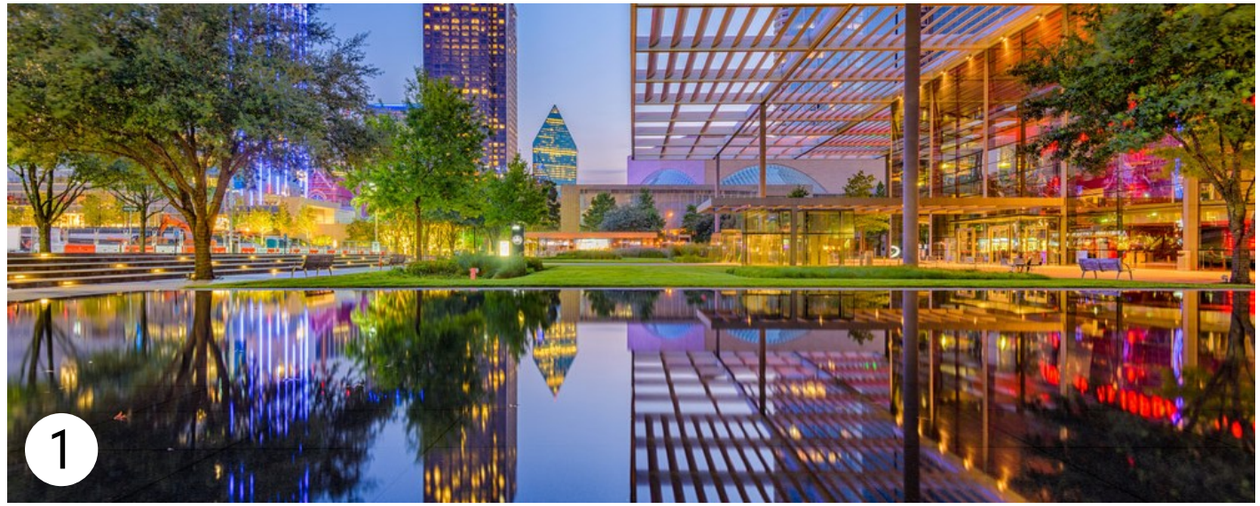
U.S. Department of Transportation

THE WINNER:
COLUMBUS, OHIO

> A livable space from the ground up using innovations in construction techniques, self-driving, climate friendly energy systems and more to build a community that’s affordable and accessible with a focus on connected tech. – Google

Alphabet will turn Toronto into a living laboratory of urban design

Investment in urban core leads to growth



1. Dallas Uptown
2. Indianapolis Downtown
3. Greenville Downtown

INDUSTRIAL ENVIRONMENT

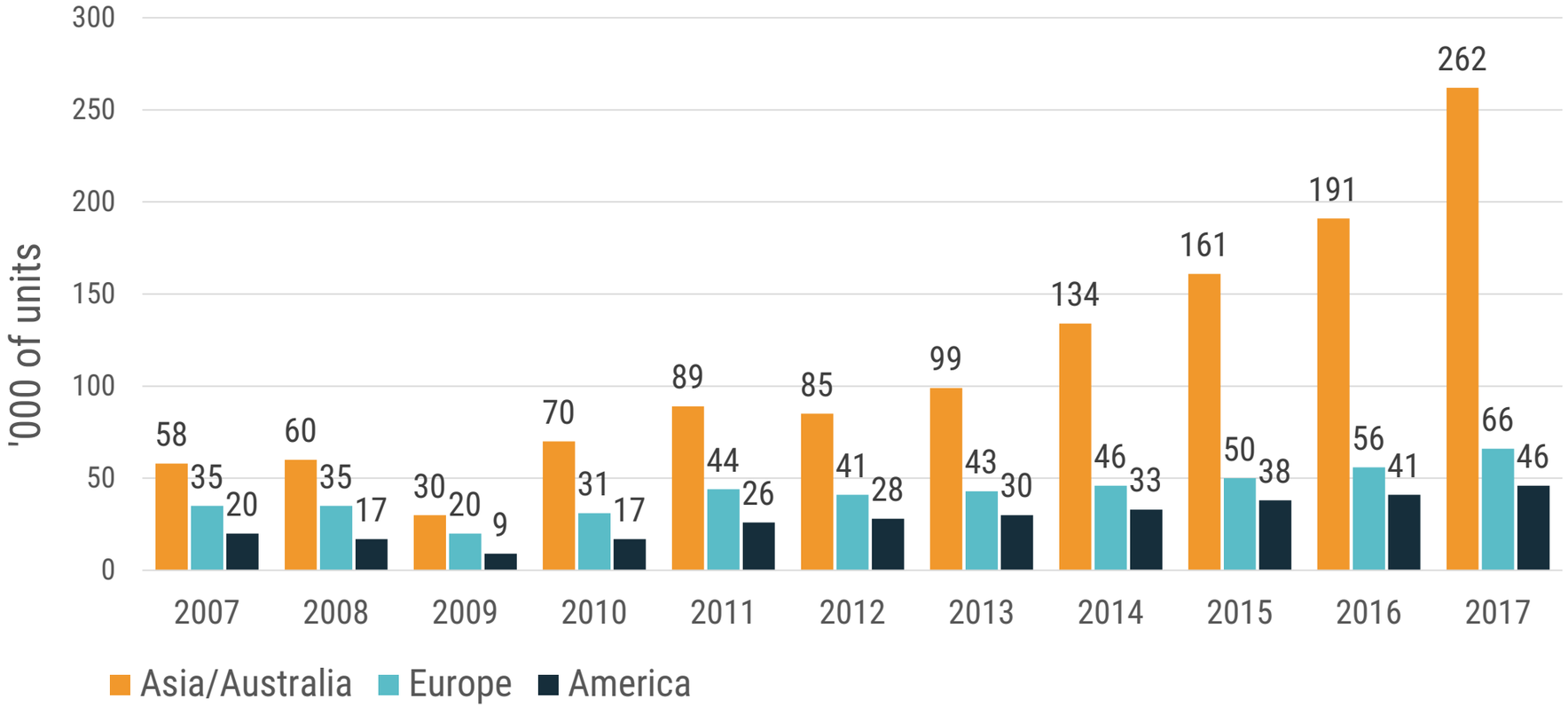
Newmark Knight Frank

China vs US

Estimations of worldwide annual shipments of industrial robots in 2017 show that Asia (262,000 units) bought almost 6x more than the Americas (46,000)

China is deploying the most robots and adopting A.I. faster than any other country. Interestingly, robots are mostly built in Japan and Germany, and much of the leading A.I. research is being done in the US.

Estimated worldwide annual shipments of industrial robots by region



Source: International Federation of Robotics, 2018

Fully automated factories

Adidas Speedfactory in Atlanta
hyper flexible, completely automated and localized manufacturing – only 150 employees in the 74,000 sq ft facility

ABB
ABB to build the world's most advanced robotics factory in Shanghai – US$150m investment – robots manufacturing robots (!)

How are automation and A.I. changing retail?

As a result of consumer spending shifting towards e-commerce (278.1% growth in total electronic shopping and mail-order houses across 10 years), many traditional brick-and-mortar stores are struggling to survive.

There were over 16,000 new non-store retail establishments in 2017 compared to 2001, a majority (52.3%) of which have opened in the last five years. As a result of this, employment across the non-store retailers grew by 140,721 jobs since 2011.

Source: E-Commerce Impacts on the Trucking Industry, ATRI 2019, Bureau of Labor Statistics

How has Amazon changed eCommerce?

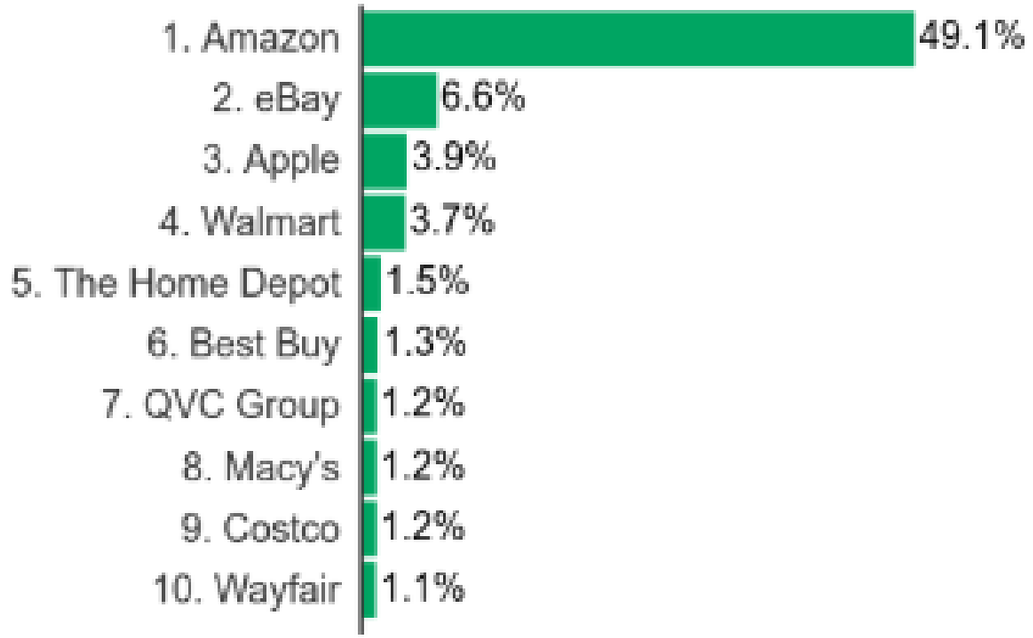
Reduced supply of warehouse space and warehouse workers

Customers have got used to fast delivery times (two-day, next-day, same-day delivery, especially if urban areas)

Customers can choose from a variety of delivery options (pick up in store, deliver to workplace, deliver home)

Due to the variety of distribution channels and shortened delivery windows, complexity of back-office operations increased

Top 10 U.S. Companies based on % of e-commerce sales



Source: eMarketer, July 2018

eCommerce companies need to be agile too

ASOS followed the digital change from shopping on the web to mobile apps for shopping well. The company is agile and willing to adapt to changing shopping habits. ASOS' "Shop before you buy" service launched Christmas 2017 season.

Despite a drop in department stores, ecommerce giants are investing in brick-and-mortar locations.

Highly-automated multi-story warehouses closer to urban centers are on the rise.

FACTORS IN U.S. BUSINESS CLIMATE

Newmark Knight Frank

The US shifts towards clean energy sources

Newmark Knight Frank

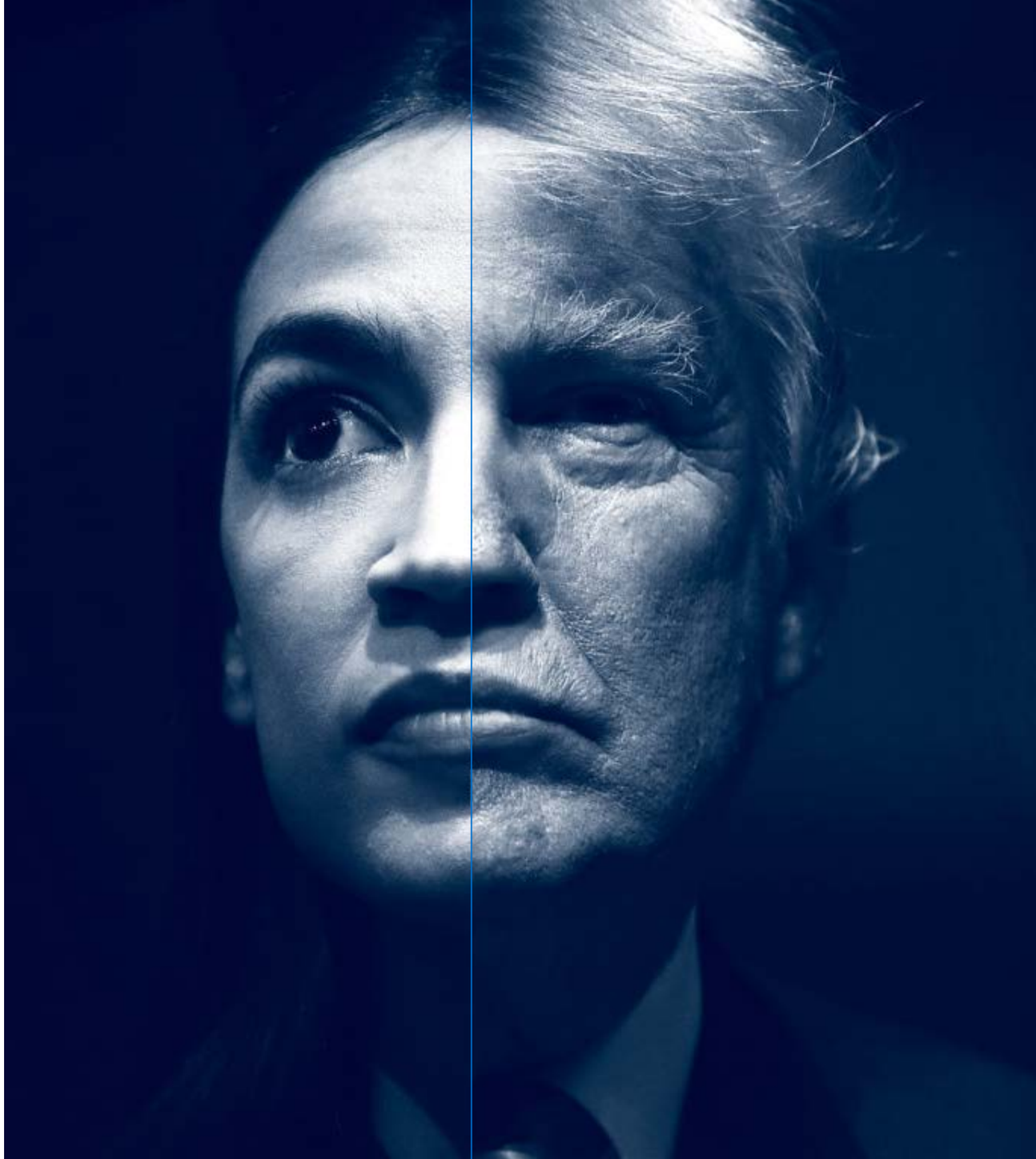
Green New Deal or No Deal: Consumer demand is already driving green solutions

Wind and solar energy production is now on par with coal.

Big power users like Google are demanding 100% renewable energy for their data centers.

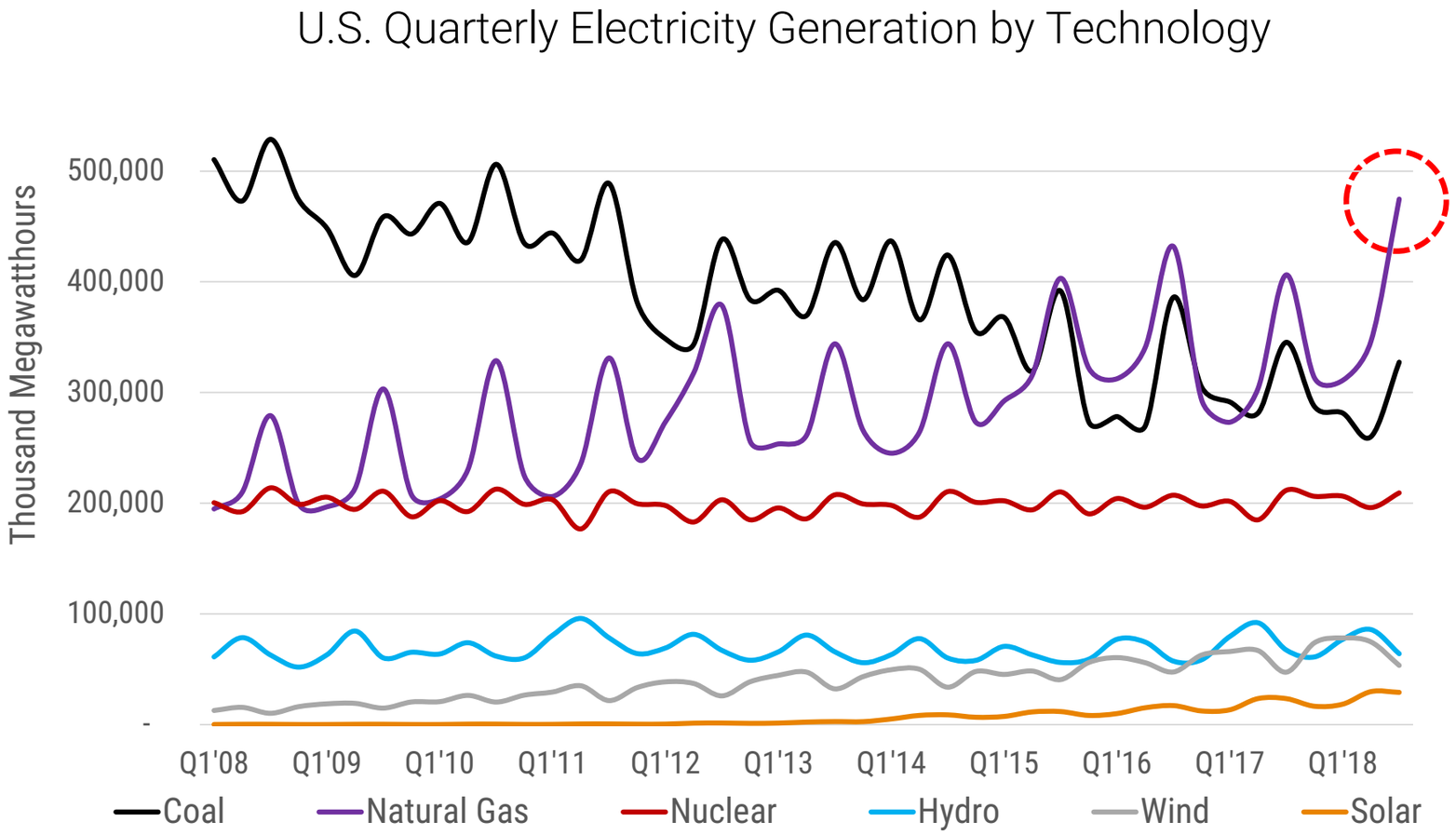
Electric cars are fast becoming popular and volume will bring down their prices.

Whether politicians are for or against green solutions, the market is moving in that direction.



Newmark Knight Frank

Sources of Energy

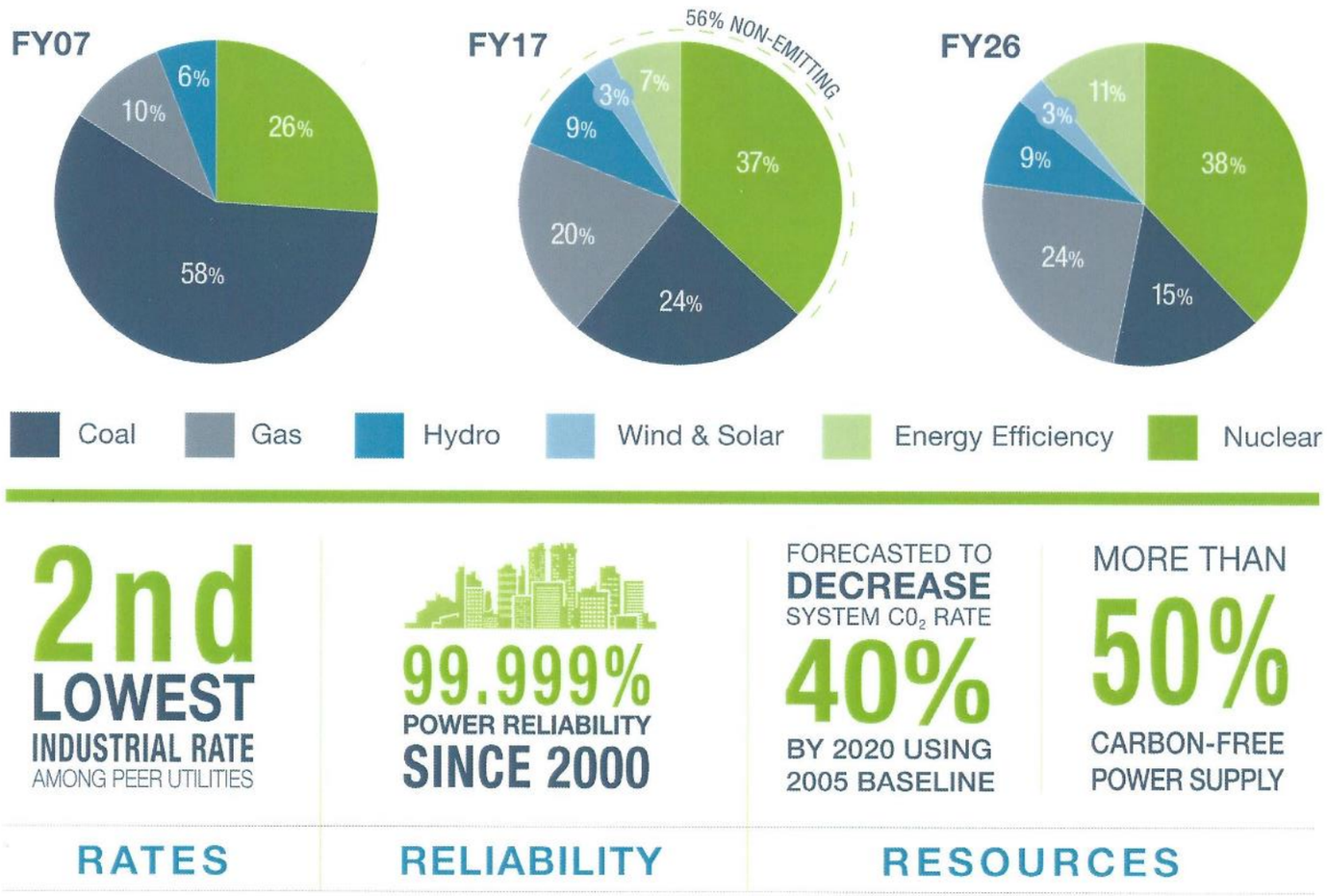


Natural Gas has replaced coal as the primary source of energy in the United States. In July 2018 it was at record high, 45% higher than coal.

Hydro, wind and solar are still less used sources but have already become as affordable as coal so they are likely to grow fast.

Source: U.S. Energy Information Administration, July 2018

Most utilities are increasing renewables in their portfolios



Source: Tennessee Valley Authority, 2017

Most large utilities are divesting from coal and increasing their non-emissions portfolio.

Coal use is declining worldwide except in China and India where it may take longer to reduce fossil fuel dependence.

Natural gas is expected to peak in 2035 after which it will also decline in favor of renewables.

Many states have already set emission standards

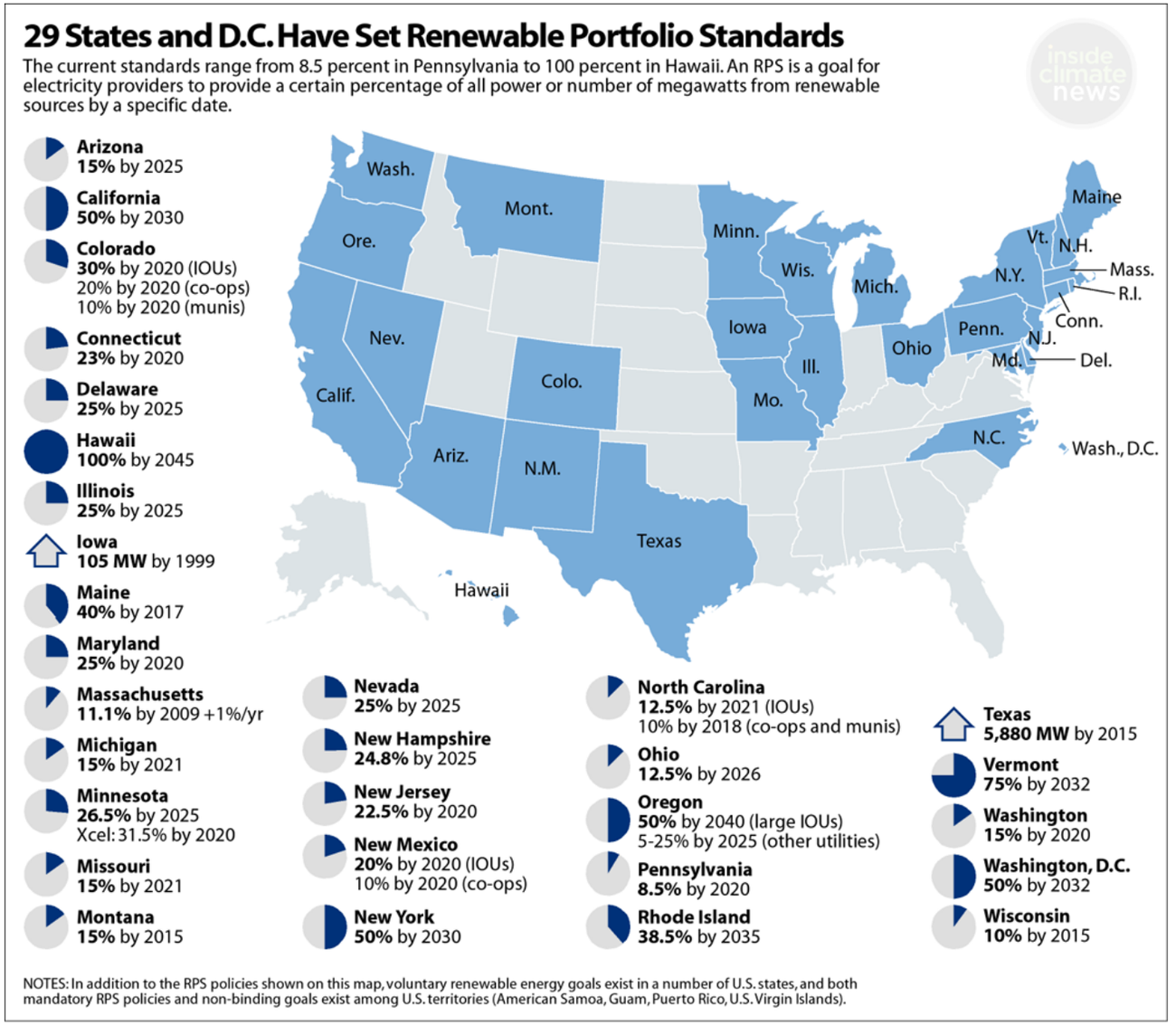
2018 ended with 6 states and territories, including 2 of the 3 largest state economies, committing to 100% clean electricity.

CA and HI committed to carbon-free electricity systems.

Cincinnati, OH committed to transitioning to 100% renewable electricity by 2035.

Cleveland, OH committed to 100% clean, renewable electricity by 2050.

Flexible energy will be the way forward.



Source: Lawrence Berkeley National Library, December 2018

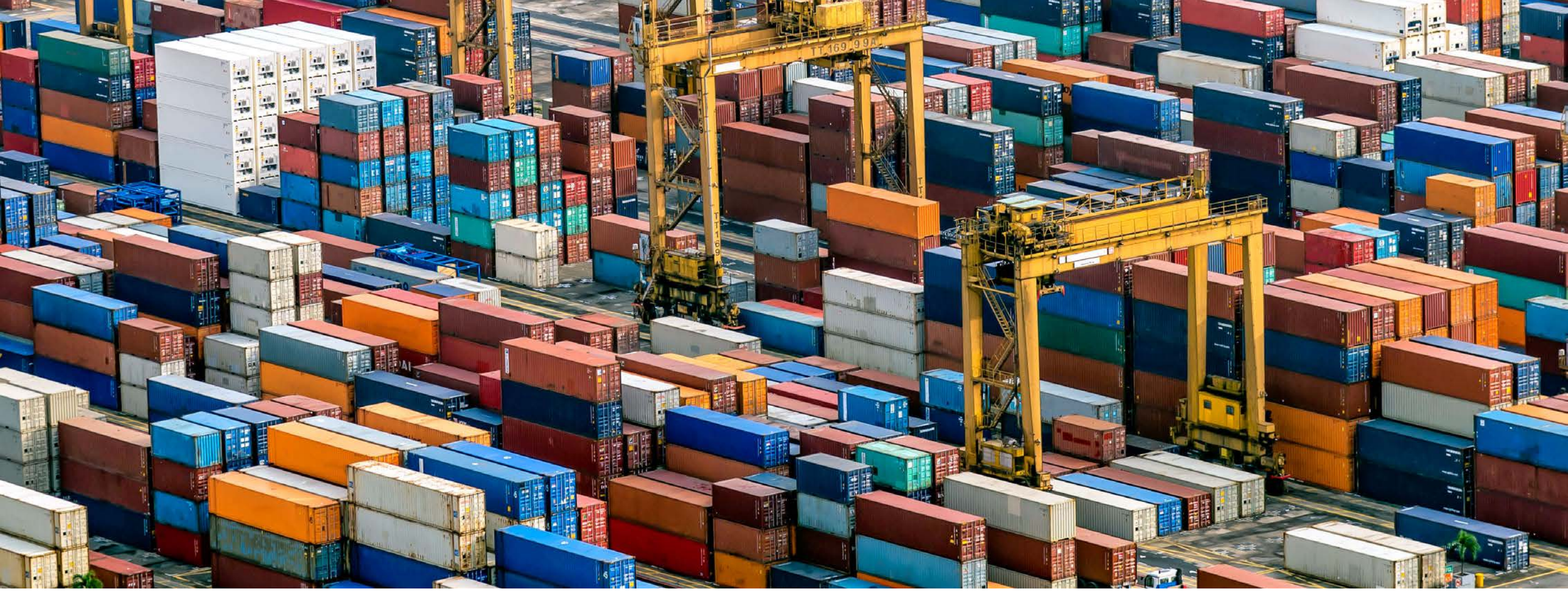
Manufacturers respond to consumer demand — **renewable energy technologies** in transportation

LiveWire, all-electric motorcycle by Harley-Davidson is coming in August 2019.

Largely funded by Amazon, the startup Rivian pledges to put a fully electric pickup truck on the road by 2020.

GM and Ford have shut down many production lines of conventional vehicles as they move aggressively toward electric vehicles.

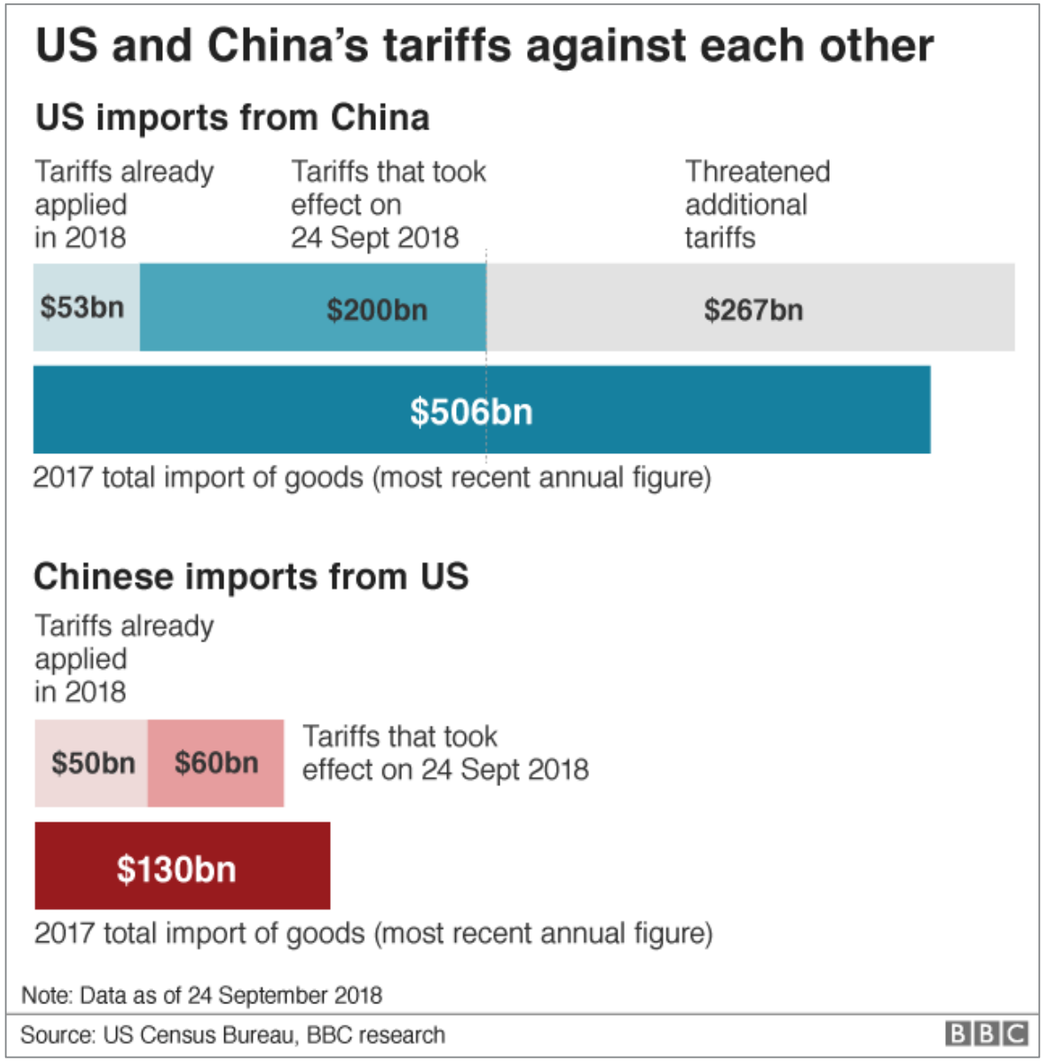
Source: The Verge, Tech Crunch & Popular Mechanics, 2019



Tariffs & the trade war with China

Newmark Knight Frank

US-China trade war is affecting American businesses



Impact of trade-war has been felt in all industries

Ford and General Motors lowered profit forecasts for 2018.

Fiat Chrysler also cut its 2018 revenue outlook.

Harley-Davidson plans to shift some production away from the US.

Boeing Co is concerned about the possible trade tariffs on the cost of running its supply chain.

BMW fears that tariffs on US made German cars will make their cars more expensive in China.

Tyson Foods cut its profit forecast due to retaliatory duties on US pork and beef exports .

But….
….Is steel coming back?

US Steel announced a $215 investment in a new furnace in Birmingham, Alabama

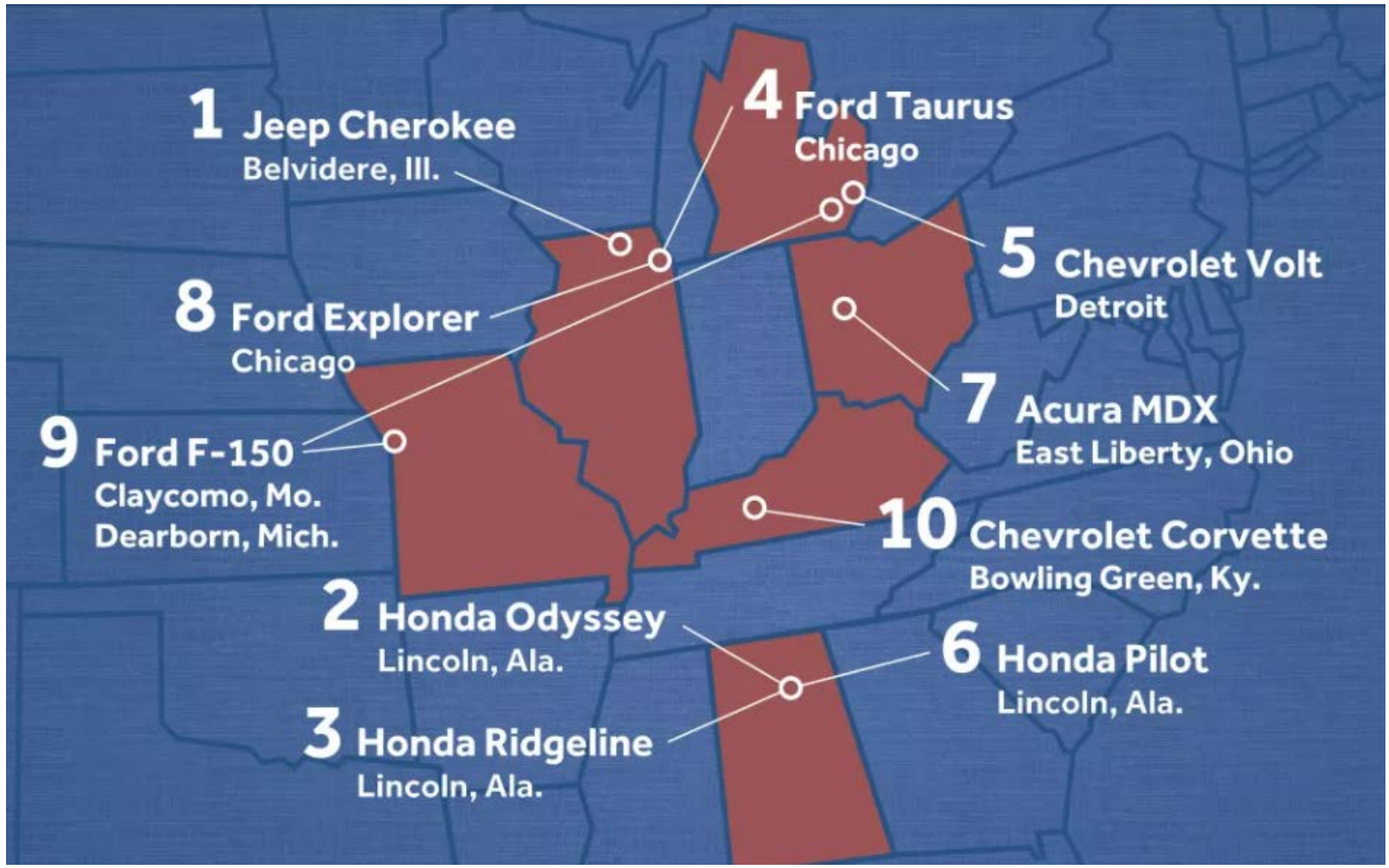
But then what does **“Made in USA”** mean today?

Suppliers for most manufacturers are scattered around the world.

4 out of 10 models considered to the “most American” are Japanese cars.

The Cars.com 2018 American-Made Index

Where the Top American-Made Cars Are Manufacured



All information pertains to the 201 model year. MDX excludes hybrid variant. Sources include AALA data published by BHTSA, automakers’ regulatory obtained by Cars.com, automaker sales and production data, Automative News production data and Cars.com Inventory analyses.

So where do we go from here?
Q&A

Newmark
Knight Frank

New York City
HEADQUARTERS
125 Park Avenue
New York, NY 10017
212.372.2000

North America
Canada
United States

Europe
Austria
Belgium
Czech Republic
France
Germany
Ireland
Italy
Netherlands
Poland
Portugal
Romania
Russia
Spain
Switzerland
United Kingdom

Latin America
Argentina
Brazil
Chile
Colombia
Costa Rica
Dominican Republic
Mexico
Peru
Puerto Rico

Asia-Pacific
Australia
Cambodia
China
Hong Kong
India
Indonesia
Japan
Malaysia
New Zealand
Philippines
Singapore
South Korea
Taiwan
Thailand

Africa
Botswana
Kenya
Malawi
Nigeria
South Africa
Tanzania
Uganda
Zambia
Zimbabwe

Middle East
Saudi Arabia
United Arab Emirates

Newmark Knight Frank