

Workforce, Technology, and the New Economy in Public Procurement

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center4procurement.org/ganigp

Simplar

- Consultancy, Research, OCM, and Trainers
- Expertise with all parties (owners & vendors)
- Provide consulting, tools, training for:
 - Procurement & Sourcing
 - Project Delivery
 - Organizational Readiness & Transformation
 - Risk-based Partnering & Planning
 - Project & Risk Management, Project Controls
 - Performance Measurements



[°] Arizona State University CHARLO The UNIVERSITY of OKLAHOMA WASHINGTON STATE AC I INIVERSITY WESTERN ILLINOIS UNIVERSIT BRIGHAM YOUNG



Simplar

- Becoming a **Client of Choice**
- Becoming a Performance-Based Vendor
- Other things:
 - Industry Benchmarking
 - Human Dimensions
 - Talent Development
 - Workforce Studies
 - Exploratory research
 - Policy & Regulations
 - Standards & Templates



GIMPLAR

20+ Years | 150+ Owners

3,000+ Projects | \$15+ Billion Procured

Information Technology

Networking Help desk services Data centers eProcurement Hardware COTS software ERP systems

Facility Management

maintenance custodial landscaping conveyance security service pest control building systems industrial moving waste management energy management

Health Insurance/ Medical Services

Manufacturing

Business/Municipal/ University Services

dining reti multi-media rights mar fitness equipment boo online education fur document management property management audiovisual communications systems emergency response systems laundry

retirement fund material recycling bookstores

furniture

Construction/Design/ Engineering

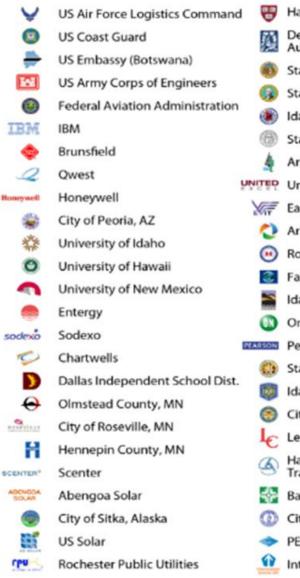
Infrastructure	Renovation
Municipal	Repair
Laboratory	Maintenance
Education	Roofing
Hospital	Specialty
Corrections	Demolition
Financial	Development

DBB CMAR DB IDIQ JOC Low Bid IPD















PARTNERS



Tell You

Leader or Manager?

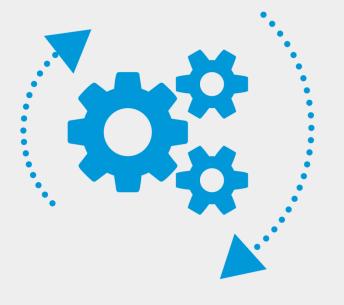
- The Future Needs Great Leaders, Not More Managers
- What is the difference between a Leader and a Manager

Leader or Manager?

• What is the difference between a Leader and a Manager

Manager = someone you have to work for

Leader = someone you want to work for



Process vs. People

Although Procurement is primarily about processes and procedures...

... a majority of time is spent <u>interacting</u> with people

Leadership Questions?



How can you easily change others?



How can you easily control others?



Q: "How do you get some one to do the job you thought they were hired to do?"



Leadership Realities

- People don't always listen even if your right & have data
- Everyone thinks they are doing the right thing
- You cannot easily control others
- You cannot easily change others

"People Skills" are among the most important attributes of effective Procurement & Supply Chain **Professionals**



Importance of the People

The ability to realize innovation, risk minimization, value creation, & cost reduction will not exceed the capability of the people doing the work

Limited Pool of Expertise

- There is a limited pool of high performing experts and experienced personnel
- Also varies by
 - Moment in time (when the solicitation/work is needed)
 - Location (geography)
 - Market/Sector
- Organizations also commonly <u>underestimate</u> the cost of working with average and low performing vendors

KEY TAKEAWAY

Clients & Buyers (+Vendors & Suppliers) **are in competition with each other** for the same *limited pool* of skilled personnel

Not Enough

- There are not enough skilled workers for the current need and future need (worsening)
 - 29% of firms have lowered hiring standards
 - 42% of firms have increased spending on training
- Great organizations/companies will be those that learn the fastest to do more with less

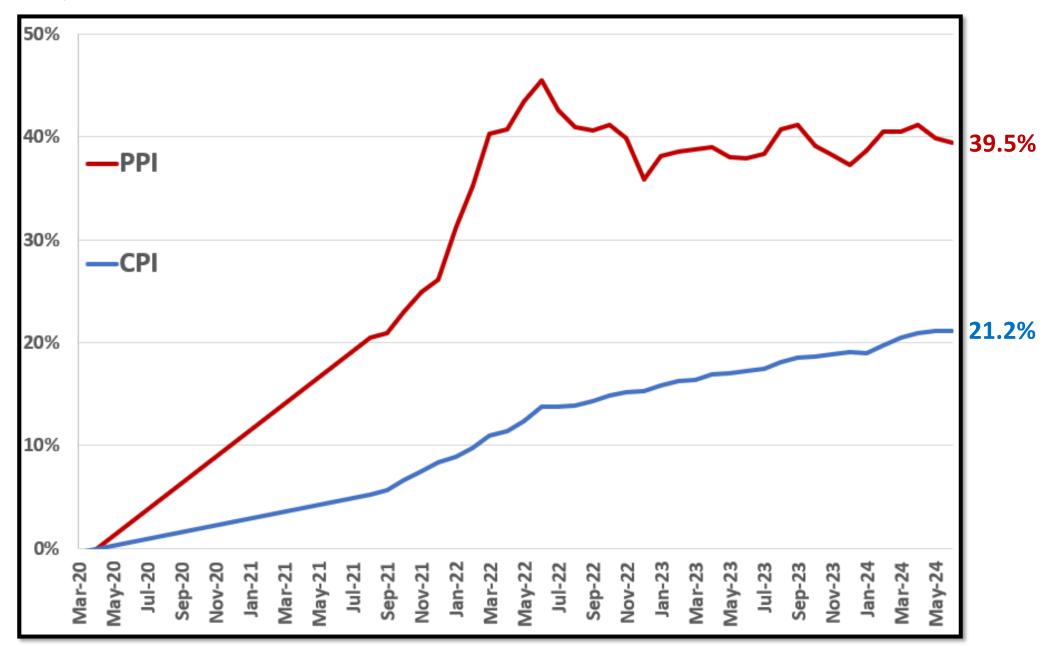
• Needs: Better Approach + Technology All Centered on People

Show You

NOTICE:

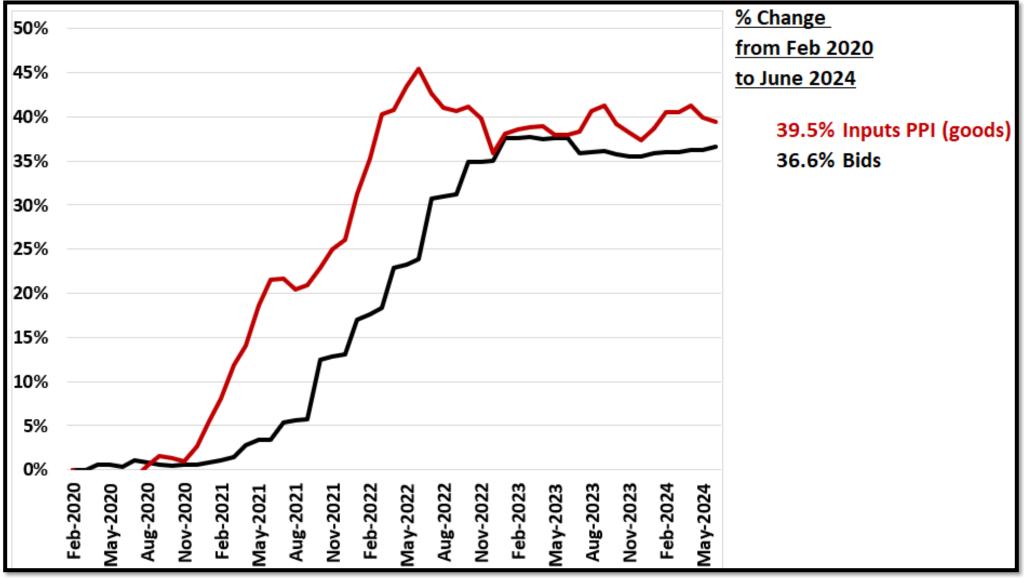
All data is as of Aug/Sep, 2024 and the market is changing fast the data should be updated regularly

CPI vs. Inputs PPI: Benchmarked to Feb 2020



Input Prices vs. Bid Prices for New Nonresidential Construction

Source: Bureau of Labor Statistics Producer Price Index (PPI) Percent Change Tables www.bls.gov/ppi/tables/



Economic - Dodge Momentum Index More Work Coming? (Up 8% y/y June 2023-2024)

Dodge Momentum Index (July 2024 update)



- Monthly measure of nonresidential projects in planning, leading indicator of construction by 1-year
 - Commercial UP year-over-year by 7%; Institutional UP year-over-year by 11%

DODGE MOMENTUM INDEX

(2000=100, Seasonally Adjusted)



More Work Coming? – ENR 2024 Q1 Report

Construction Exec Optimism Surges

ENR CONFIDENCE INDEX

FIRST QUARTERLY COST REPORT

But economic headwinds still persist By Jonathan Keller

INDUSTRY

10 Points

 or the first time since Q1 of 2022, construction industry executives report a stable and slightly growing market on ENR's Construction Industry Confidence Index (CICI) survey. The index vaulted up 10 points from Q4 2023, to a rating of 52. Nearly 65% of respondents see the current construction market as stable, with only 18.8% seeing a declining market. That latter number was 34.6% last quarter. Execs are also showing more faith in the economy as a whole. The economic index is also up 10 points, to a 48 rating this quarter.

The index measures executive sentiment about where the current market will be in the next three to six months and over a 12- to 18-month period, on a 0-100 scale. A rating above 50 shows a growing market. The measure is based on responses by U.S. executives of leading general contractors, subcontractors and design firms on ENR's top lists to surveys sent between February 19 and March 25.

GCs and CMs are more pessimistic than either designers or subcontractors. Calculated separately, their CONFIDENCE INDEX confidence index comes in at 47. More GC/CM firms see a declining market 3-6 months from now (27%) than currently (23%). Design firms report the largest divergence of opinion, with nearly the same percentage seeing a currently improving market (28%) as declining (24%). Confidence is highest among firms who do busi-

ness in the Midwest, with a confidence rating of 55. Firms who work in the Northeast/New England/Mid-Atlantic region had the lowest rating, coming in 49. That is still a 29% improvement over last quarter's 38 rating.

The CICI's results are mirrored by those of the Confindex survey from Princeton, N.J.-based Construction Financial Management Association (CFMA). Each quarter, CFMA polls CFOs from general and civil contractors and subcontractors on markets and business conditions. The resulting Confindex is based on four separate financial

and market com-

ponents, each

rated on a scale of

1 to 200. A rating

of 100 indicates a

stable market;

higher ratings in-

dicate market

Confindex tracks

rose between Q4

2023 and Q1

2024. The overall

Confindex is up

13.5% this quar-

ter to a 109 rating.

The largest in-

crease was in the

growth. All indices the



The "current confidence" h. down 5.4% to a 106 rating, and nancial conditions" index tumbled 6 to 101. The "business conditions" index Even if confidence in the construction rebounded slightly after a major drop last

quarter, up two points to a 106 rating. "All indices are down significantly in comparison to last year's third quarter reading," says Stuart Binstock, CFMA's CEO.

Despite the dip in confidence, construction CFOs may not be pessimistic enough, thinks CFMA economic adviser and CEO of economic consultant Sage Policy Group Anirban Basu. "I think we're headed into a recession in 2023, and I think it's going to be a deep recession." Whereas CFMA respondents have

previously reported strong profit margins, this quarter the number of firms reporting improved profit margins has been "virtually offset" by those who report they have not improved, he says. With construction costs still rising "it'll be more and more difficult for those contractors to pass along those cost increases to their project owners," he adds. The "year ahead outlook" index of CFMA's survey fell below 100 this quarter and is down 18.2% when compared with last year.

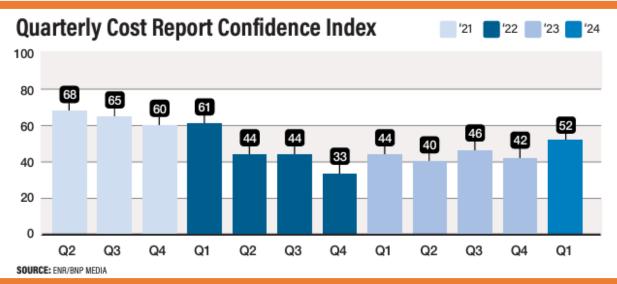
The full impact of the conflict in Ukraine is also yet to be felt, he thinks. "When we came into the year in North America, natural gas prices were \$3 per million BTU; recently we have been in the manding their people come back," the ighte " explaine Bacu. As cold weather hite

ter/sewer and waste (a 72 trial/manufacturing (68) health care (68) markets p est numbers. Basu sees a rising mult at least in the short term

September 22. That nur

At the other end of the fidence remains low in t rating) and commercial of kets. Basu does not see citing data from Castle S provides security to 2,00 America. "On average 41% of workers swiped in he reports. He foresees at

Saga CEO e



market overall is low, confidence in many individual markets remains high. The wa-

gage rates are good for market, because people, ited periods, can't buy ho According to Freddie Ma fixed mortgage rates are

on January 6.

of office space in the near

exception may be banks. "August fastest leasing of New York City office space during the pandemic, and that in large measure is because banks are de-

The index measures executive sentiment about where the current market will be in the next three to six months and over a 12- to 18-month period, on a 0-100 scale.

A rating above 50 shows a growing market.

The measure is based on responses by U.S. executives of leading general contractors, subcontractors and design firms on ENR's top lists.



PROSPECTS IN INDIVIDUAL SECTORS BY FIRMS WORKING IN THOSE MARKETS

		DURRENTLY (N)			3-6 M64THS (%)			0-6 8043-6 (%)		
	NUMBER OF FRMS	DOCLINING ACTIVITY	STABLE ACTIVITY	MIRONING ACTIVITY	DELINING ACTIVITY	STABLE ACTINITY	INPROVING ACTIVITY	BICLINING ACTIVITY	STABLE ACTIVITY	MPREVING ACTINITY
COMMERCIAL OFFICES	82	68	38	4	55	35	9	-44	34	22
DISTRIBUTION, WAREHOUSE	55	22	65	15	15	60	25	24	45	31
EDUCATION K-12	68	3	38	19	5	68	27	1	58	41
ENTERTAINMENT, THEME PARKS, CULTURAL	36	25	50	25	25	42	33	14	53	33
HOSPITALS, HEALTH CARE	л	4	54	41	0	53	47	- 1	48	60
HIGHER EDUCATION	34	7	81	12	9	70	20	11	58	33
HOTELS, HOSPITALITY	58	27	57	16	22	62	16	18	52	30
MULTI-UNIT RESIDENTIAL	54	31	50	19	30	-46	24	20	33	46
RETAIL.	45	38	55	7	40	-45	11	27	51	22
INDUSTRIAL, MANUFACTURING	61	13	44	43	15	-43	44	11	36	52
TRANSPORTATION	43	5	47	40	T	-40	53	7	26	67
WATER, SEWER AND WASTE	33	9	55	36	9	55	36	3	58	47
POWER	23	4	52	45	9	-43	48	13	38	57
PETROLEUM, PETROCHEMICAL	12	0	35	25	0	75	25	- 1	58	50
ENVIRONMENTAL, HAZARDOUS MASTE	9	25	50	25	22	-44	33	22	44	33
STATEMENT - CARLOND AND A CARLON A REPORT AND LOT TO HAVE AN	COORDING									

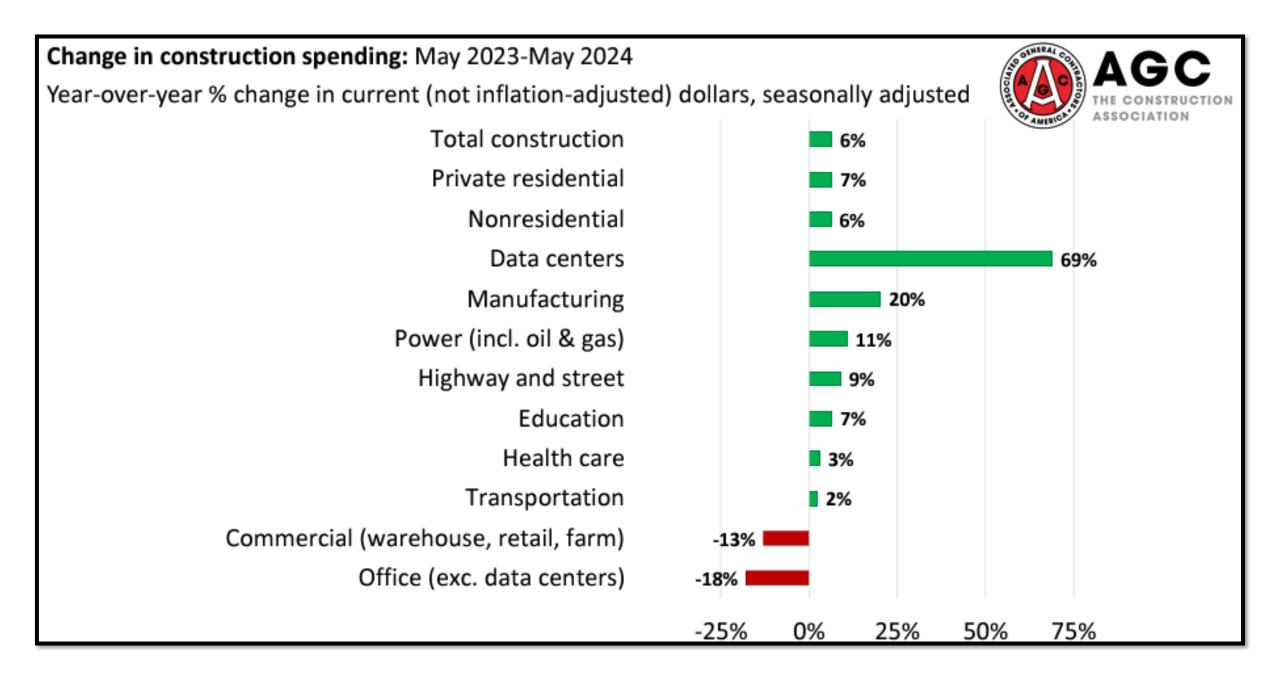
78 • ENR • April 15, 2024 enr.com

PROSPECTS IN INDIVIDUAL SECTORS BY FIRMS WORKING IN THOSE MARKETS

		CURRENTLY (%)			3-6 MONTHS (%)			12-18 MONTHS (%)		
	NUMBER OF FIRMS	DECLINING ACTIVITY	STABLE ACTIVITY	IMPROVING ACTIVITY	DECLINING ACTIVITY	STABLE ACTIVITY	IMPROVING ACTIVITY	DECLINING ACTIVITY	STABLE ACTIVITY	IMPROVING ACTIVITY
COMMERCIAL OFFICES	82	68	28	4	56	35	9	44	34	22
DISTRIBUTION, WAREHOUSE	55	22	65	13	15	60	25	24	45	31
EDUCATION K-12	60	3	78	19	5	68	27	8	50	42
ENTERTAINMENT, THEME PARKS, CULTURAL	36	25	50	25	25	42	33	14	53	33
HOSPITALS, HEALTH CARE	70	4	54	41	0	53	47	0	40	60
HIGHER EDUCATION	74	7	81	12	9	70	20	11	56	33
HOTELS, HOSPITALITY	50	27	57	16	22	62	16	18	52	30
MULTI-UNIT RESIDENTIAL	54	31	50	19	30	46	24	20	33	46
RETAIL	45	38	56	7	40	49	11	27	51	22
INDUSTRIAL, MANUFACTURING	61	13	44	43	13	43	44	11	36	52
TRANSPORTATION	43	5	47	49	7	40	53	7	26	67
WATER, SEWER AND WASTE	33	9	55	36	9	55	36	3	50	47
POWER	23	4	52	43	9	43	48	13	30	57
PETROLEUM, PETROCHEMICAL	12	0	75	25	0	75	25	0	50	50
ENVIRONMENTAL, HAZARDOUS WASTE	9	25	50	25	22	44	33	22	44	33

SOURCE: ENR/BNP MEDIA. FIGURES MAY NOT ADD UP TO 100% DUE TO ROUNDING

ENR Q4 Cost Report



IIJA ("Infrastructure Bill") - \$1.2T/5yr (Nov '21)

- Roads and bridges: \$110B
- Power and grid: \$73B
- Rail: \$66B
- Broadband: \$65B
- Water infrastructure: \$55B
- Resiliency: \$46B
- Transit: \$39B
- Airports: \$25B
- Environmental: \$21B
- Ports/waterways: \$17B
- Safety/Research: \$11B
- Low-carbon buses and ferries: \$7.5B
- EV infrastructure: \$7.5B



More Work Coming? - Others

- Dodge new starts down 3% from same time last year
 - Non-residential starts down 7%
 - Residential starts down 17%
 - Non-building starts up 25%
- AGC Total Value of Starts up 6% Year to Year
 - Non-residential Up 17%
 - Institutional Up 18%
 - Commercial/Data Centers Up 2%/10%
 - Education Up 10%
 - Highway/Bridge Up 12%
 - Water/Sewage Up 18%
 - Industrial/Manufacturing Up 71%
 - Power/Energy Up 6%
 - Healthcare Up 11%
- Decarbonization/Energy Policy for Existing Buildings?
- On-Shoring / Deglobalization Reindustrialization of America (+Mexico)
- Semi/Chip and Data Centers (\$280B CHIPS and Science Act (\$52B subsidy to semi))

"Risks continue to mount for the construction sector," said Richard Branch, chief economist for Dodge Construction Network. "Over the last 12 months, construction starts have essentially froze as rates increased and credit tightened. The industry needs further adjusting as rates are expected to stay higher for longer, along with the potential for higher energy costs and continued political uncertainty. A return to broadbased growth in construction starts is still some time away."



Biden Administration Announces Federal Building Performance Standard

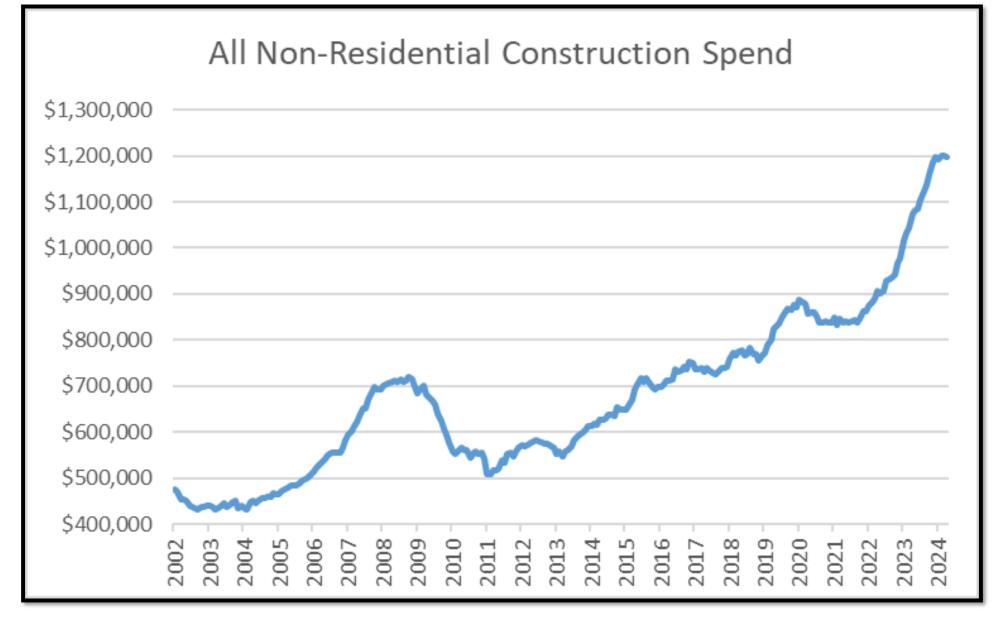
The standard will help federal facilities meet several concurrent sustainability and emissions reduction goals. December 29, 2022

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By Grea Zimmerman, senior contributing editor

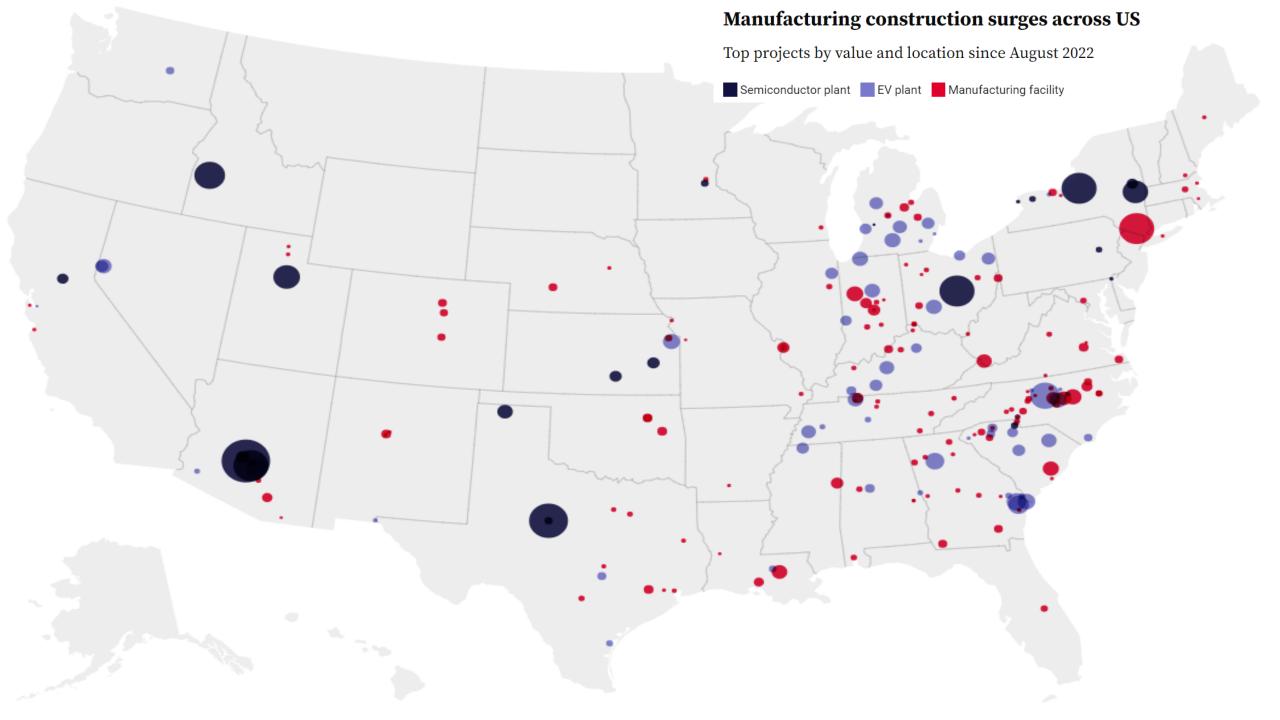
ENERGY EFFICIENCY

Total Construction Spend – Non-Residential



More "Megaprojects"

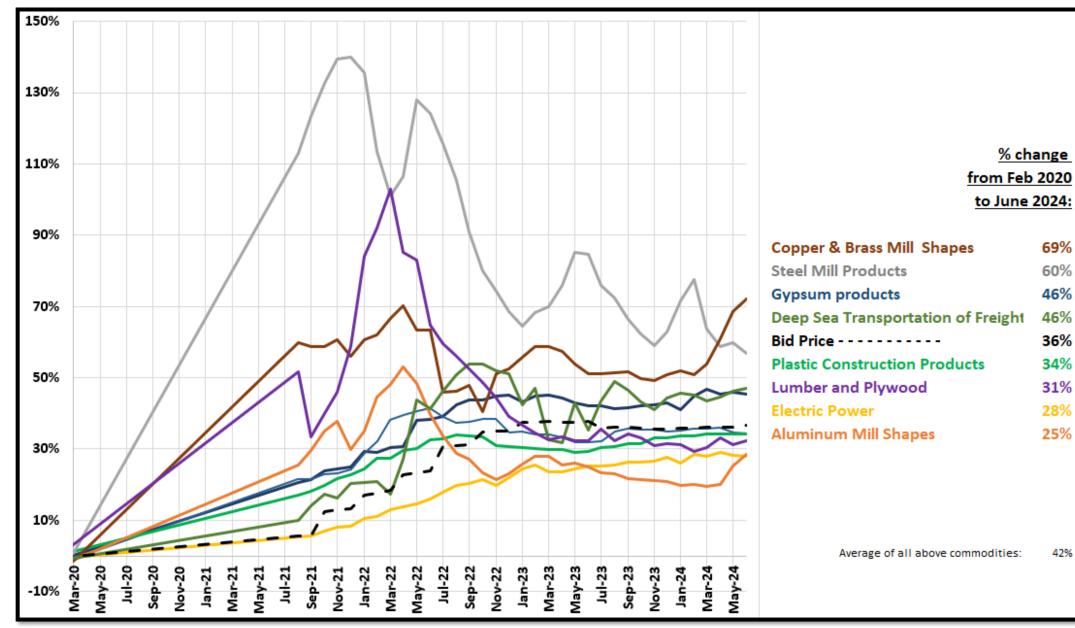
- 2023 = new annual record of 41 megaprojects (\$103.9B)
- 2022 = at the time, record of 31 megaprojects (\$103.2B)
- Pre-2019 = prior best of 35 megaprojects (\$79.1B)



Escalation & Volatility

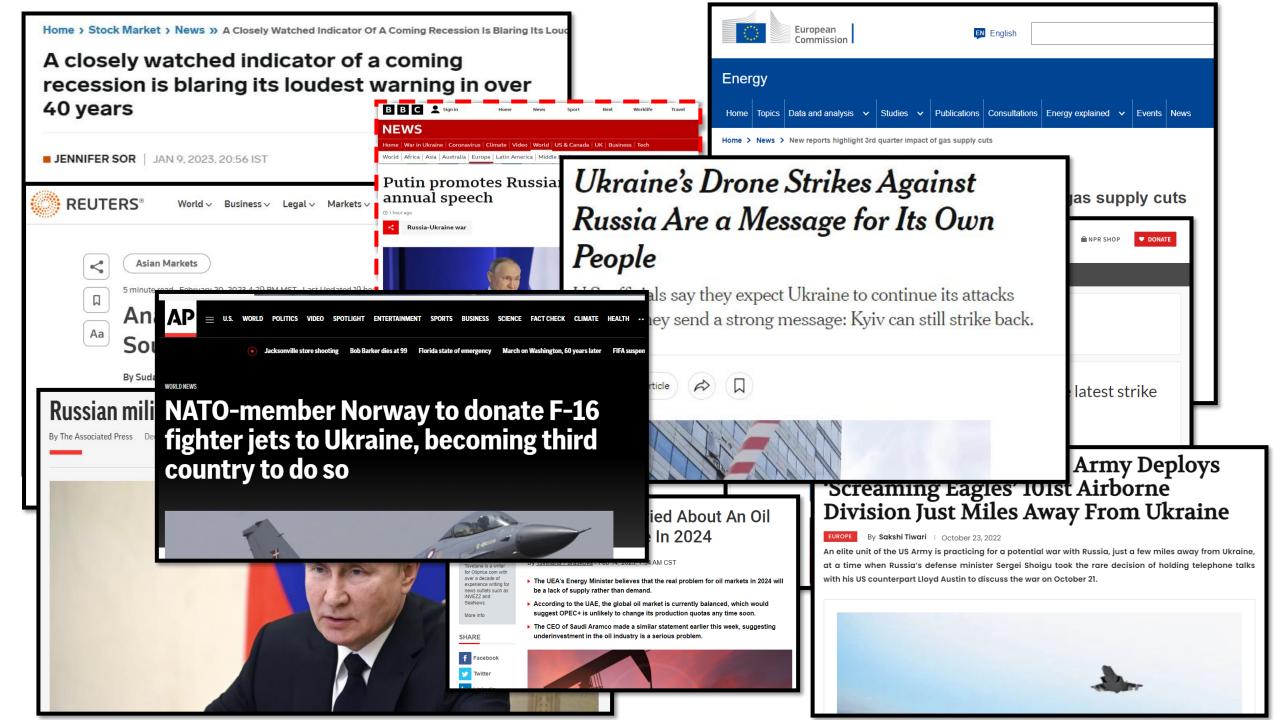
Source: Bureau of Labor Statistics PPI Percent Change Tables www.bls.gov/ppi/tables/

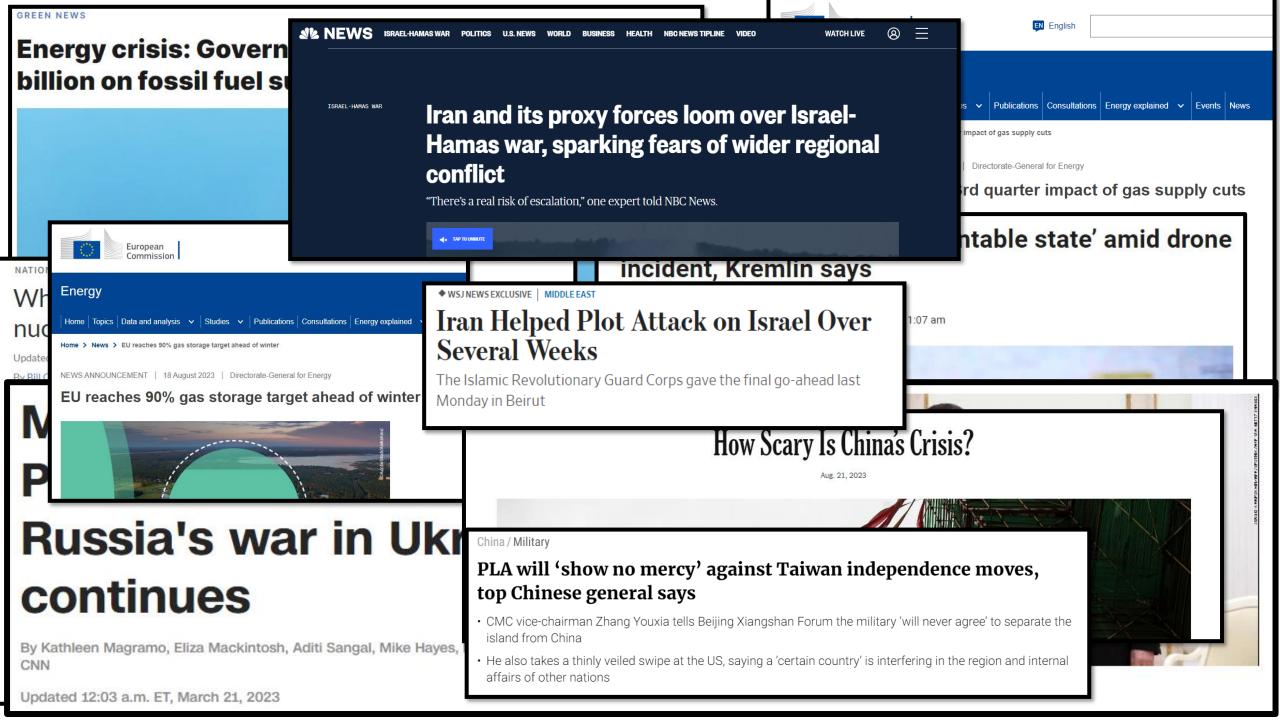
PPIs for Selected Inputs

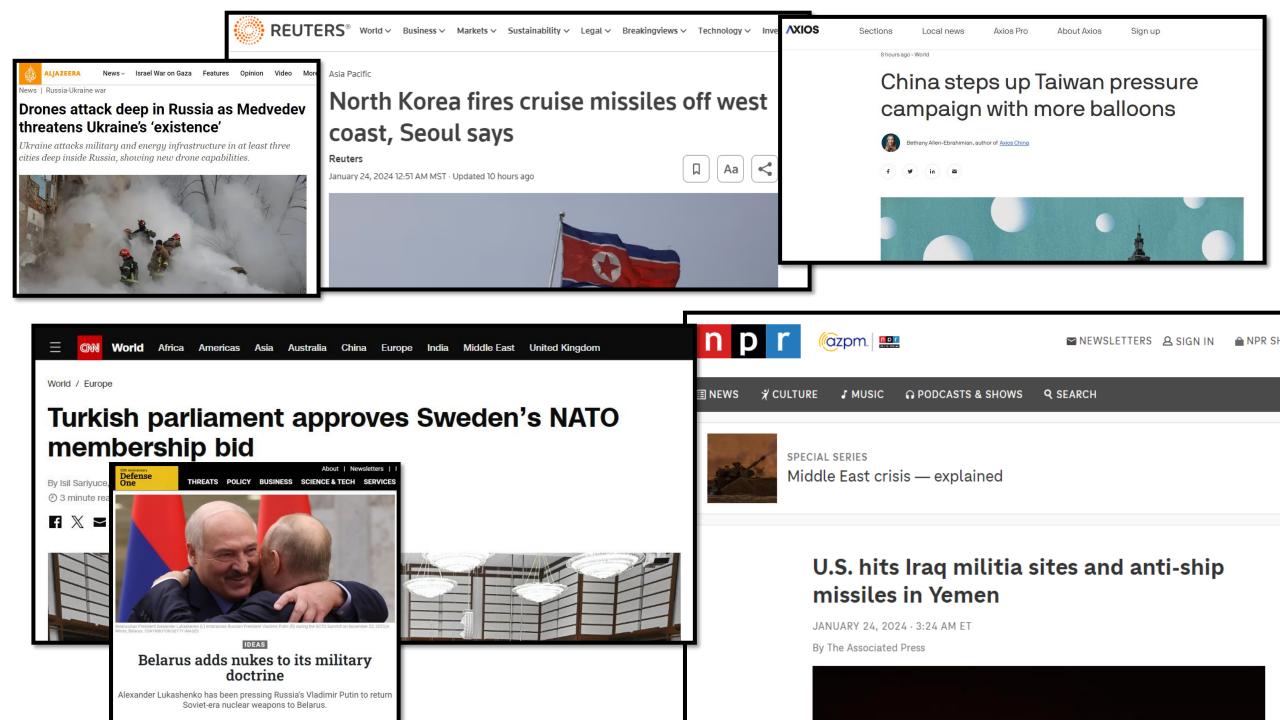




- US spent over **\$1 trillion** this year just on interest for its **\$35.3 trillion national debt**
- Interest payments increased by 30% compared to last year due to high Federal Reserve rates
- Budget deficit surged, approaching \$2
 trillion for the year
- Top government costs:
 - 1. Social security
 - 2. Medicare
 - 3. Interest payments



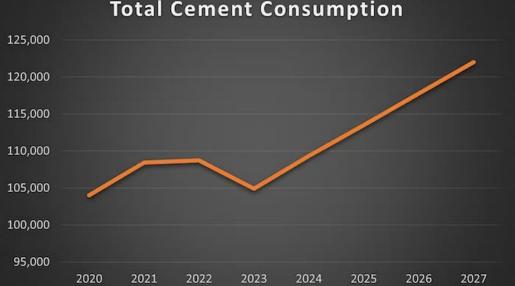




Others: Materials Shortages



- 43 states had shortages in cement
- No cement capacity has been added in the US since 2009
- Additional cement production capacity coming, but PCA expects demand to outpace supply
 Total Cement Consumption

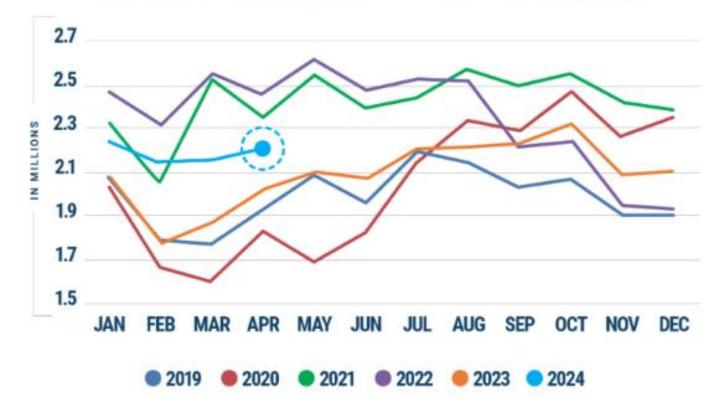


Supply Chain Issues

- 90% of projects have had supply chain impacts
- 84% of projects have had higher cost
- 72% of projects have taken longer
- Actions People are Taking:
 - Accelerated purchasing after contract award (cash flow)
 - Alternative suppliers
 - Alternative materials/products (change the spec)
 - Stocking inventory
 - Increasing Bids/Budgets
 - Longer Completion Times
 - Some Primes advising Owners to push Risk to Subs

Supply Chain: shipping

2019-2024 U.S. CONTAINER IMPORT VOLUME (TEUs)

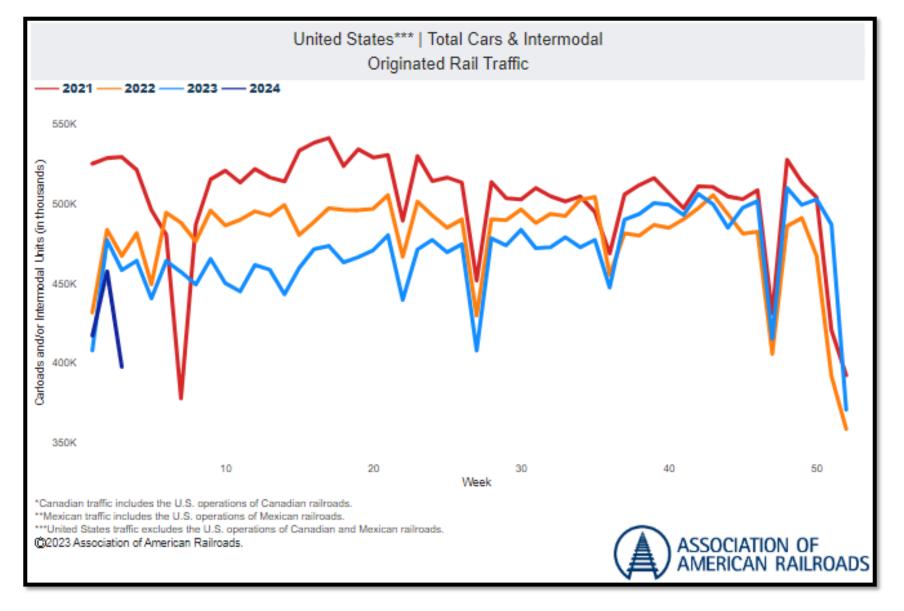


Dec 2023

US Container Imports:

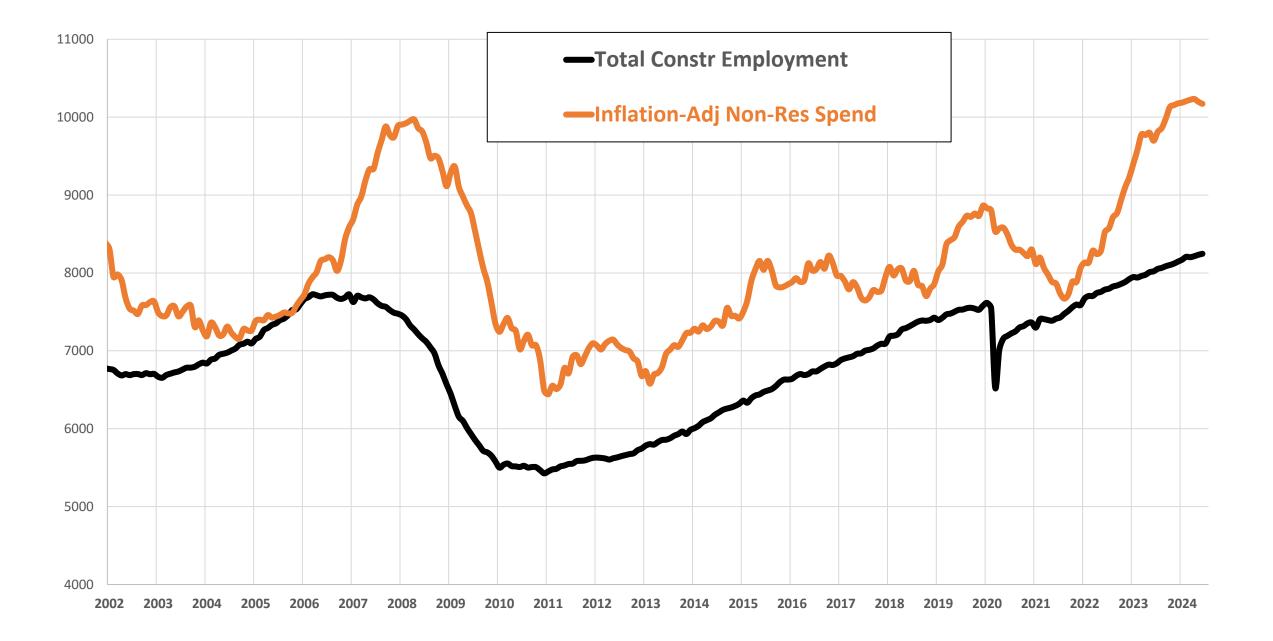
- Shifting from West to East to West
 - By June 2022: Ships waiting off all ports climbed 36% to 125 in June
 - Shipping had shifted from West to East Coast Ports in Q2/Q3 of 2022
- Import volumes increasing
 - Panama drought did <u>not</u> appear to be impacting U.S. container import volume.
 - But, Nov 2023 may be first month impacted as East Coast volume is down
 - Ex: Houston down 27%, etc. (next slide)

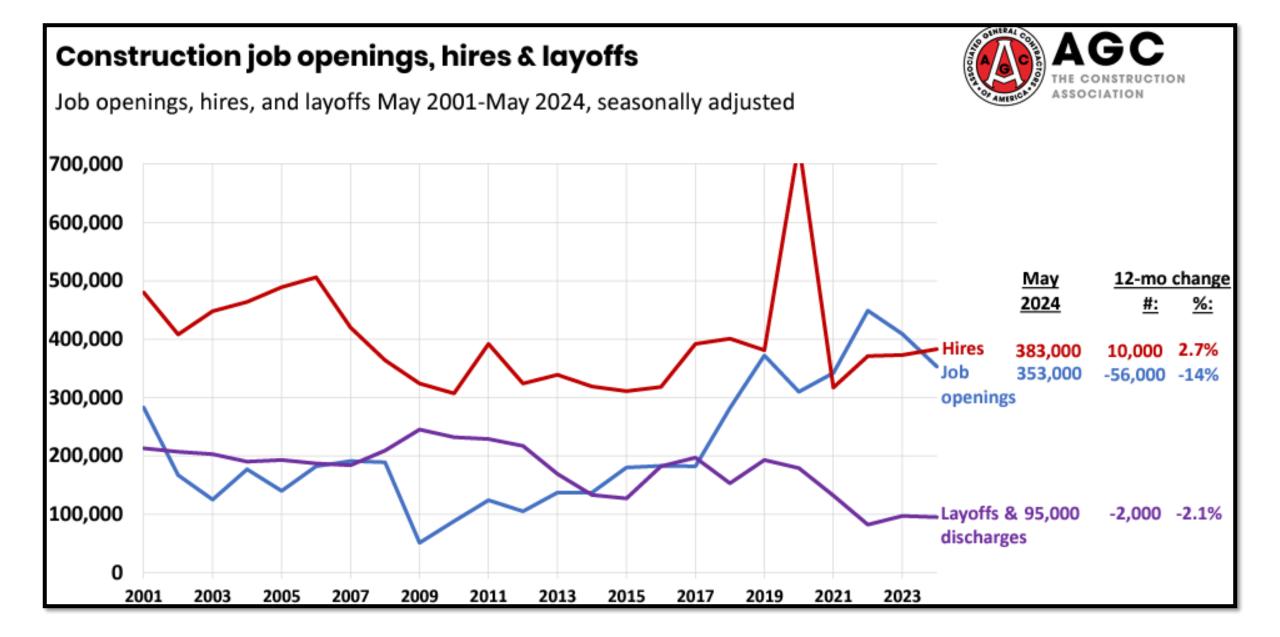
Weekly Rail Traffic



Employment Picture - ABC

	May 2024	April 2024	May 2023	1-Month Net Change	12-Month Net Change	12-Month % Change					
Construction	8,228,000	8,207,000	7,977,000	21,000	251,000	3.1%					
Nonresidential	4,869,300	4,852,200	4,690,300	17,100	179,000	3.8%					
Nonresidential building	920,600	917,600	875,100	3,000	45,500	5.2%					
Nonresidential specialty trade contractors	2,803,700	2,790,700	2,714,300	13,000	89,400	3.3%					
Heavy & civil engineering	1,145,000	1,143,900	1,100,900	1,100	44,100	4.0%					
Residential	3,358,400	3,354,900	3,286,500	3 500	71.000	2.2%					
Residential building	949,700	946,200	922,600		Growth: N	lay 2023	v. May 202	4			
Residential specialty trade contractors	2,408,700 2,408,700 2,363,900										
Average Hourly Earnings				Nonresidential* 3.8%							
All private industries	\$34.91	\$34.77	\$33.54	Nonresidential Building Nonresidential STC						5	.2%
Construction	\$38.06	\$37.99	\$36.26				3.3%				
		verage Weel	kly Hours	Heavy & Civi	0 0			20/	4.0%	6	
All private industries	34.3	34.3	34.4		Residential** ntial Building		2.	2% 2.9%	/		
Construction	39.0	38.7	38.9		sidential STC		1.9%		0		
Unemployment Rate				T(C)	0.0	9% 1.0%	2.0%	3.0%	4.0%	5.0%	6.0%
All private industries (SA)	4.0%	3.9%	3.7%					Ionth % Ch		0.070	0.070
Construction (NSA)	3.9%	5.2%	3.5%	-1.5pp	0.4pp		12 1	ionui % Ch	ange		





Other Workforce Challenges

- Before pandemic trades wage rates exceed average total private sector by 20-25% historically
- Now Trade Wage Rate is 16-18% above national average....
 - Pay is not keeping up
 - Cannot work from home
 - Benefits not as comprehensive
 - Non-flexible hours
 - Vaccination requirements were an issue

- Since the year 2000, the US Population has gotten:
 - Older or Younger?

• Since the year 2000, the US Population has gotten:

• Older by 3.4 years

- Since the year 2000, the US Population has gotten:
 - Older by 3.4 years
- This trend is:
 - Accelerating or Decelerating?

- Since the year 2000, the US Population has gotten:
 - Older by 3.4 years
- This trend is:

• Accelerating (2021 was most rapid increase across the 21yr range)

Workforce Challenges

Percent of Total Population in 2010 and 2019

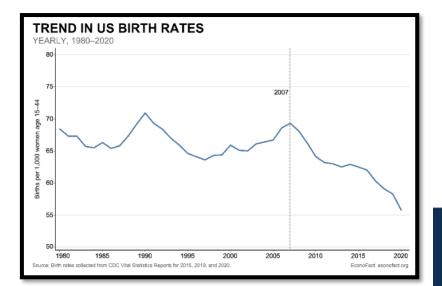
2019

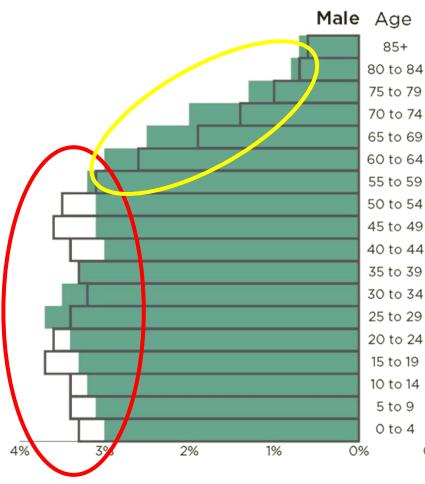
 \Box 2010

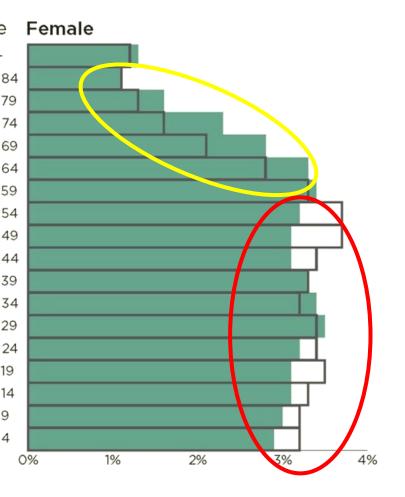
2020 Birth Rate 4% lower than 2019 Lowest Ever (11.99 Births per 1000 people) (up 1% in '21, up 0.09% in '22 & '23)

(was 31% higher in 1990)

(was 102% higher in 1950)

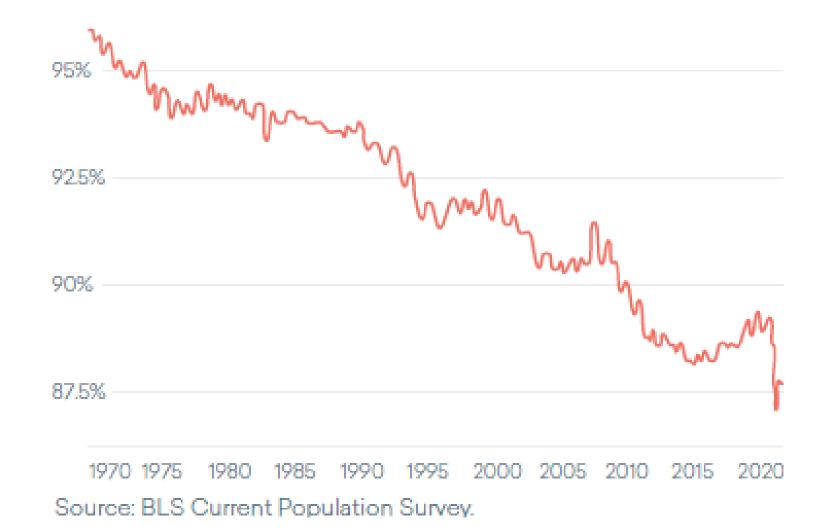




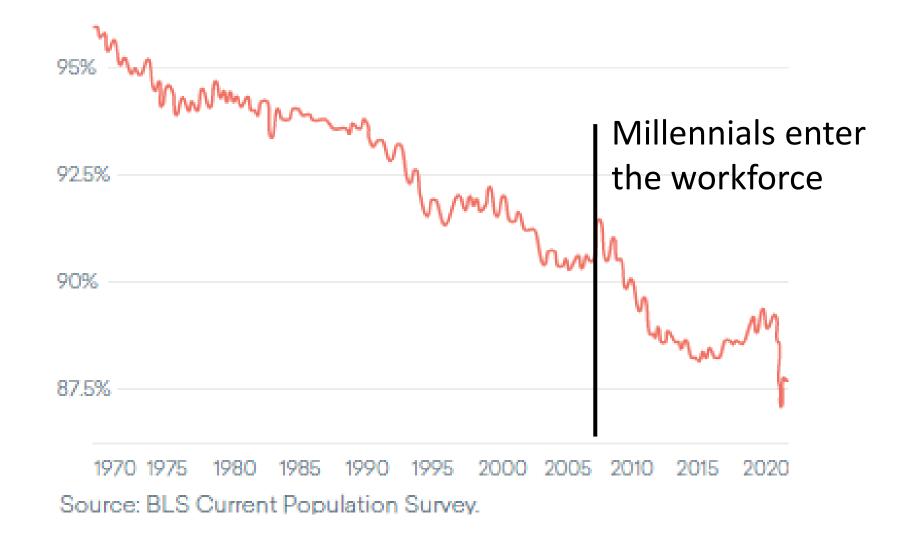


United States® U.S. Department of Commerce U.S. CENSUS BUREAU Census.gov Source: Vintage 2019 Population Estimates www.census.gov/programs-surveys/popest.html

Workforce Challenges – Prime Age (25-54) Male Workforce Participation

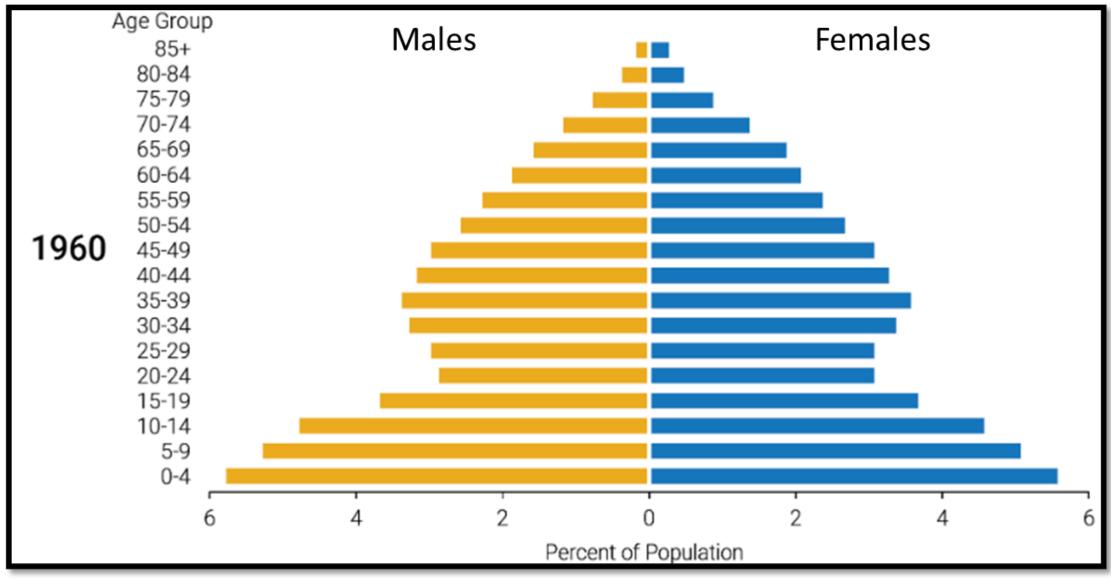


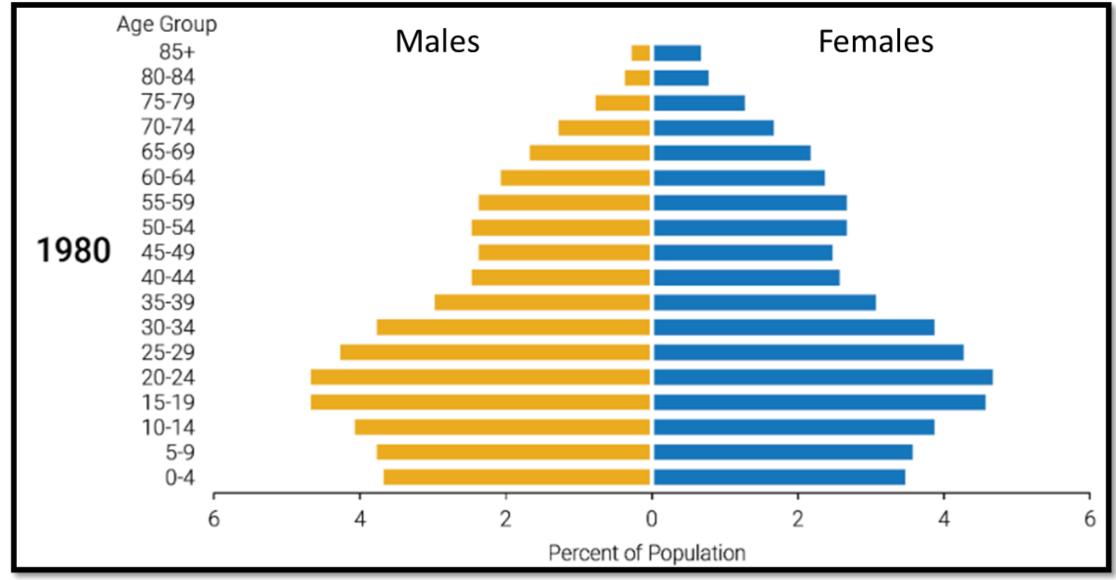
Workforce Challenges – Prime Age (25-54) Male Workforce Participation

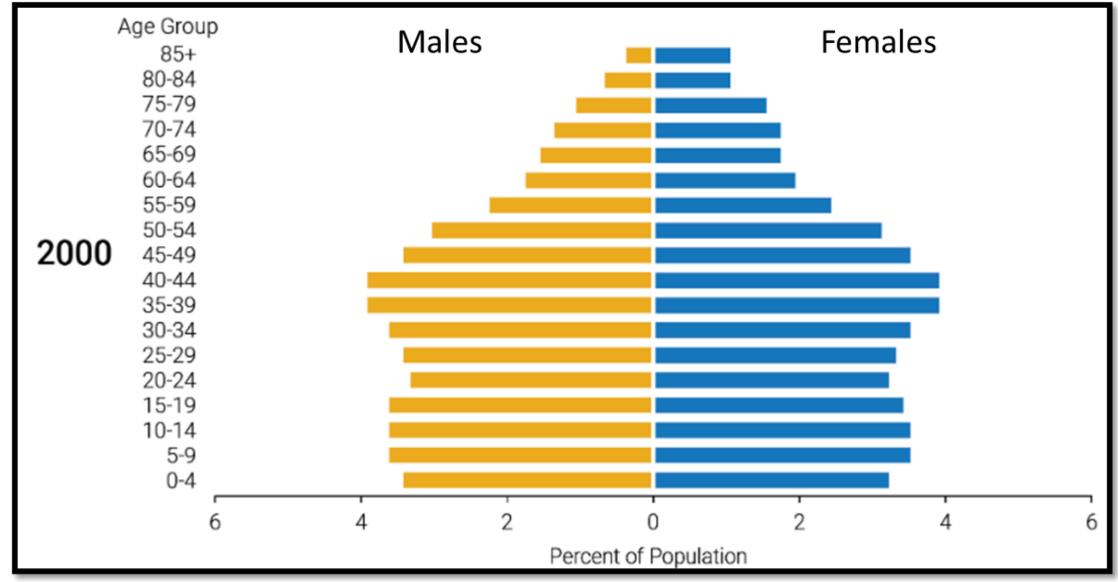


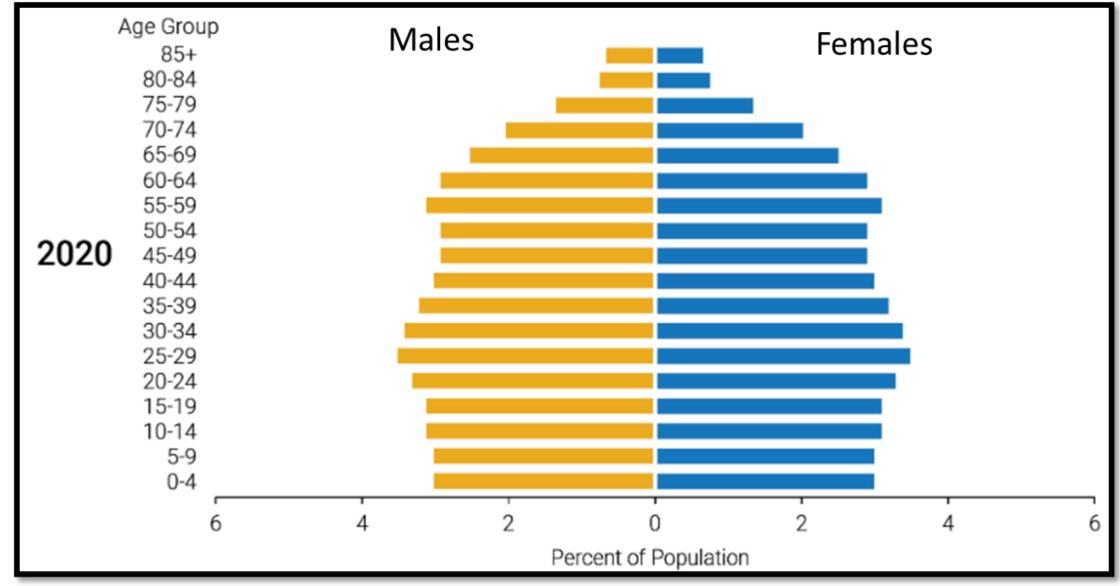
Workforce Challenges

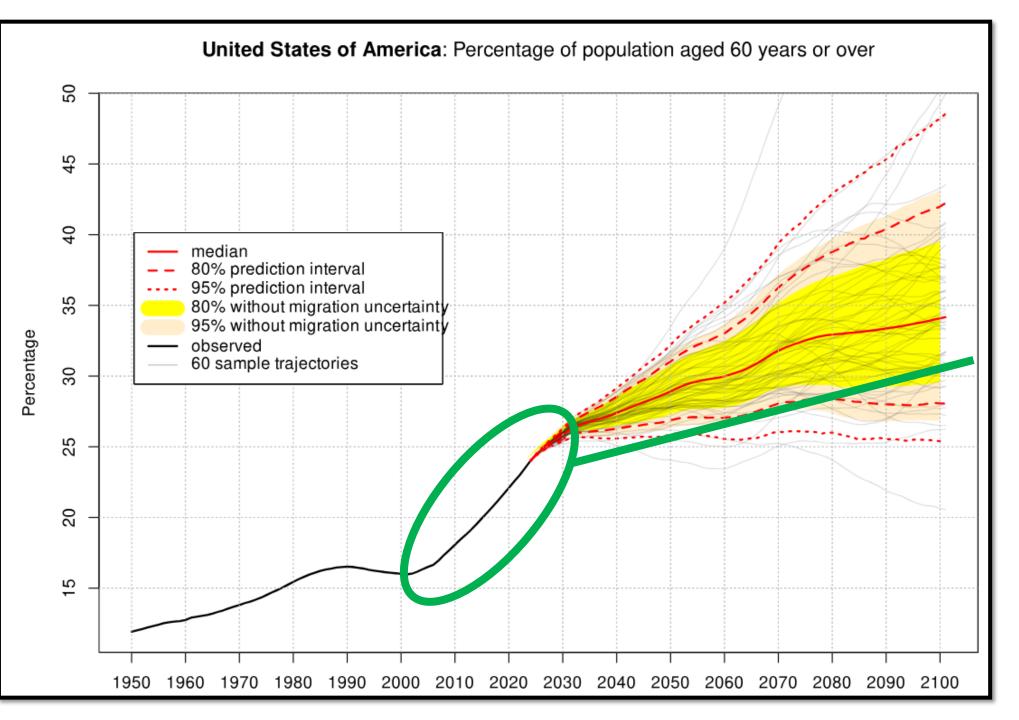
- Baby Boomers created incredible wealth
 - Young X, Old Millennials are expected to inherit ~\$77 Trillion from their parents begins 2030-2035
- More men 25-34 yo live with parents than with spouse (first time since 1880)
- Drugs are a big problem (robbing nearly a million prime-age men a year from the workforce)
- 2.4M Women left workforce since Feb 2020 still growing
- Demographics will only be getting worse moving forward



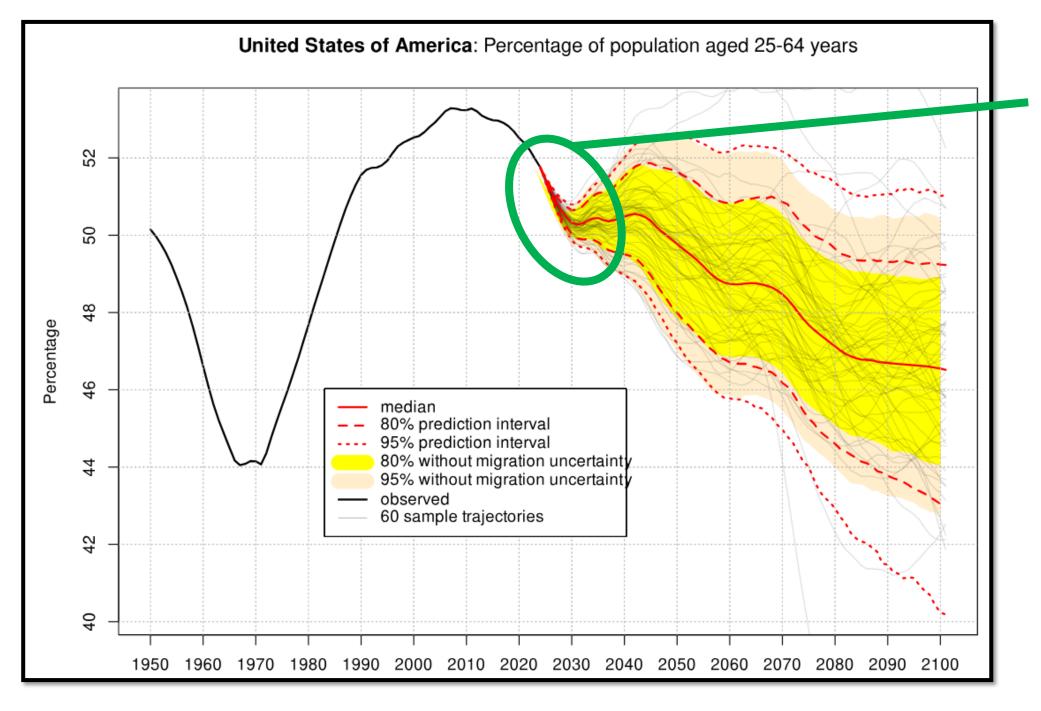




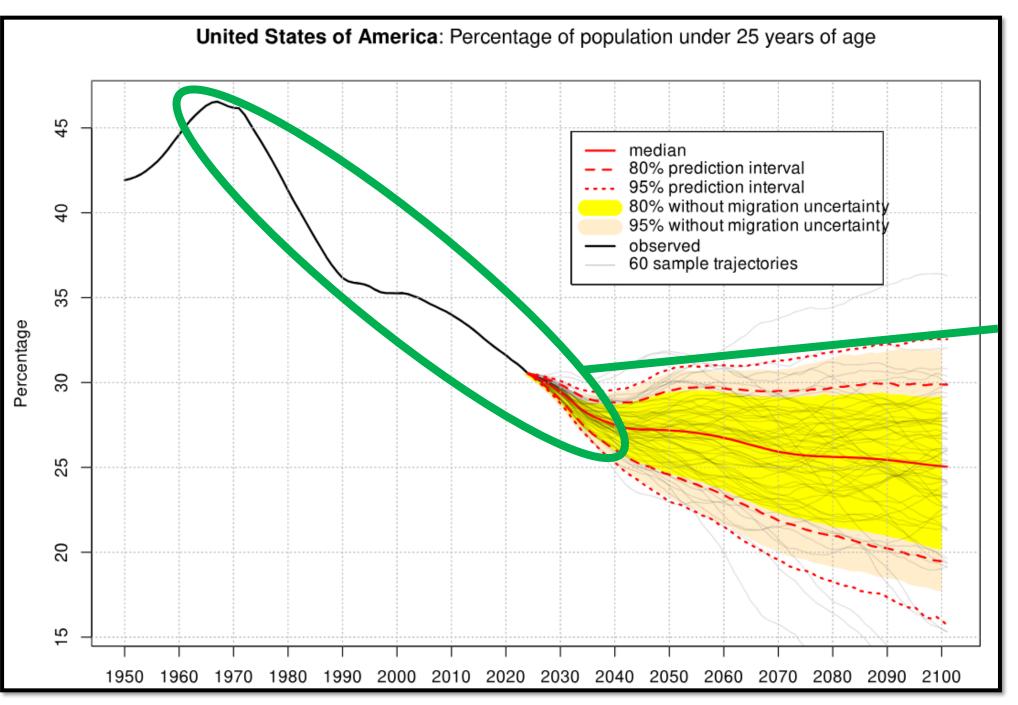




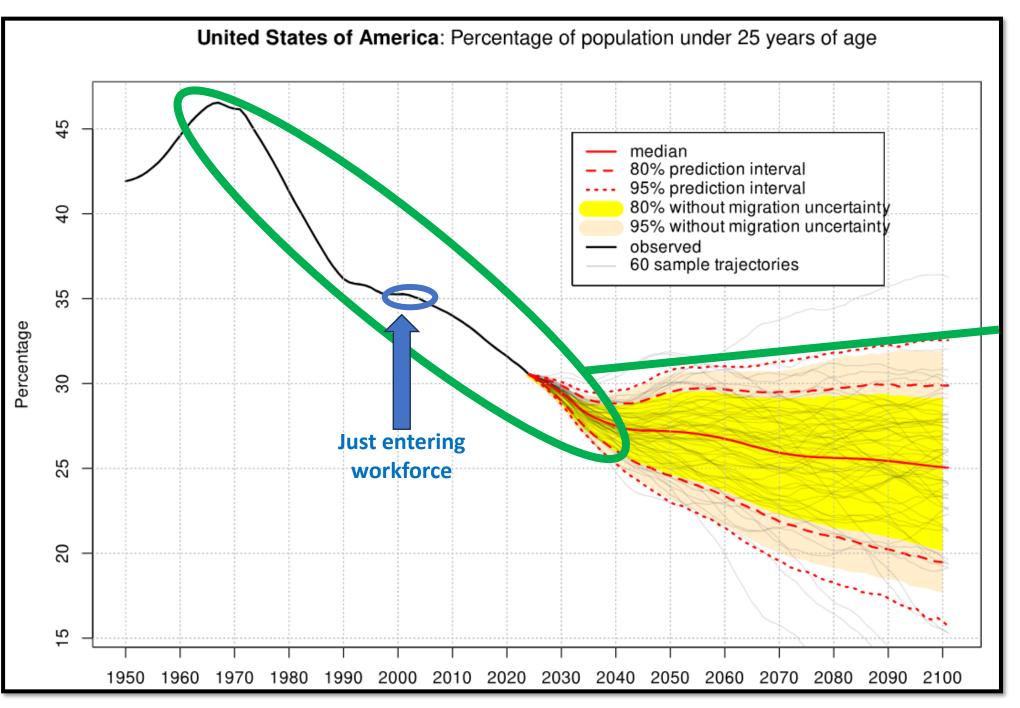
Near Exits -60+ yr olds as a % of population has grown 50% -Doesn't level off to mid-2030s



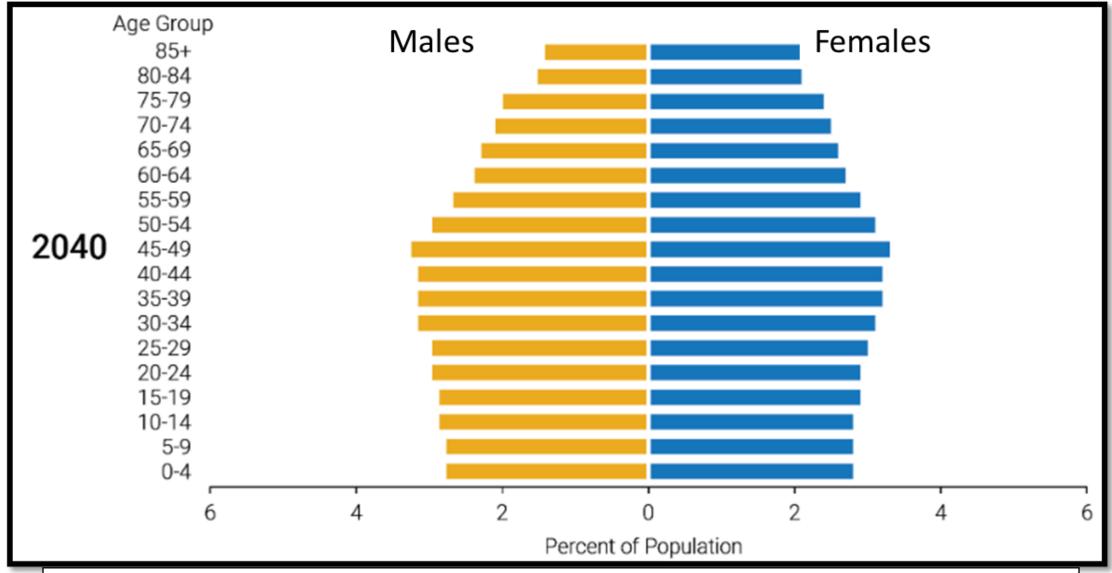
Total Workforce Keeps Shrinking until Early 2030s Additional 5%+ Drop in Total Workforce over next 7-10yrs



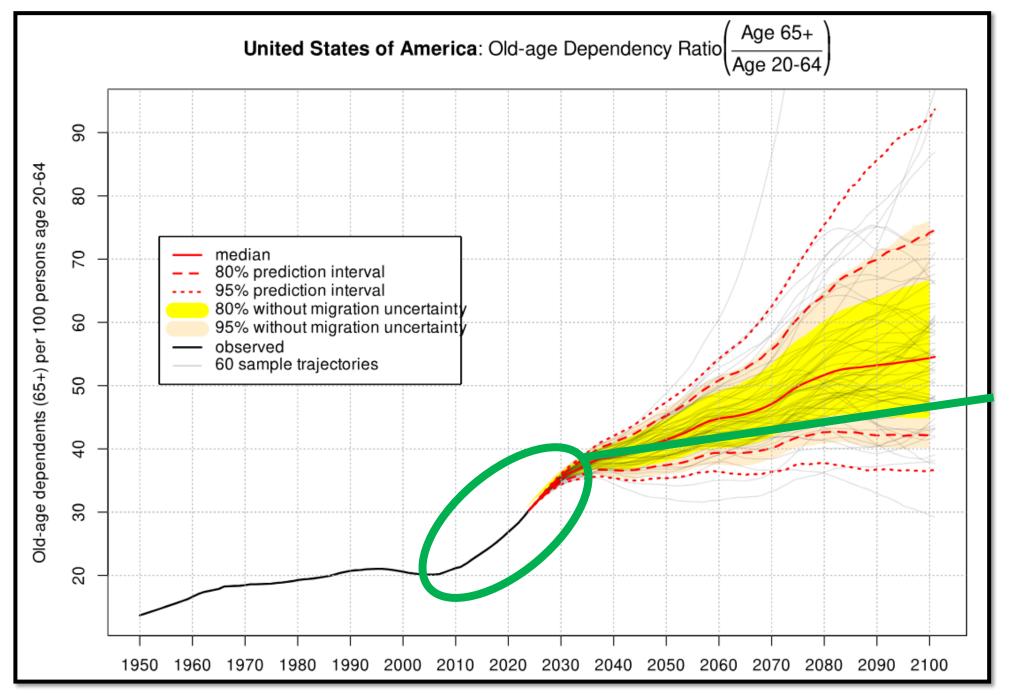
No More Senior Discounts Massive decrease in future workforce as a % of population



No More Senior Discounts Massive decrease in future workforce as a % of population



2040 Fertility Rates will be below replacement rate – all growth will be immigration 2024 Growth rate of 65+ Age will outpace growth of younger generations thru 2054



Employer Opportunity: Family **Caretakers to** Double **Currently about 1** out of 4 have an older family member they care for....this will double in next few years

Mid- and Long-Term Outlook

this is the BEST it will be (for the remainder of our careers barring a sustained recession/depression)

So What's Next?

When You See a Another Employer

Talking To Your Top Performer

Client Experiences:

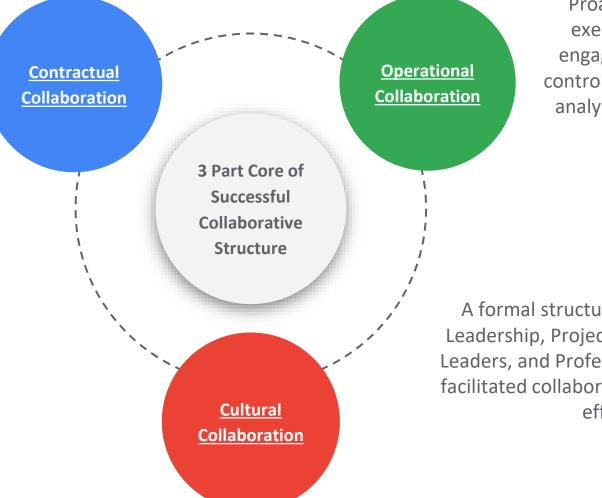
These are the current market realities...

- Hot Markets for Vendors
- Workforce will not be improving
- Product/Equipment/Material availability will continue to vary
- Cost escalation/ uncertainty/ "sticker shock"
- Quality & Safety worsening
- Productivity worsening
- Margins diminished
- Everyone looking for solutions trying old ways again....



Procurement Leadership Approach *Collaborative Strategic Partnership = TRUST*

Contract conditions reflect the "win-win" intent and incentivizes collaborative behavior. A mutual risk-sharing model to promote aligned interests and project success.



Proactive approach to project execution by leveraging early engagement, shared risk, better controls data, focus on productivity analysis, all to streamline project execution.

A formal structure across Company Leadership, Project Management, Task Leaders, and Professionals. Trained and facilitated collaboration, and innovation efforts.

Future Project Considers...

Processes
Technology
Training
Contracts
Safety

Contrary to popular belief, digital transformation is less about technology and more about people.

You can pretty much buy any technology, but your ability to adapt to an even more digital future depends on developing the next generation of skills - <u>the future is to focus on reskilling and</u> <u>upskilling people so that they are better equipped to adjust to</u> <u>change</u>.

- Harvard Business Review

Introduction to AI



Intro – Basics of Al

$$J=rac{1}{n}\sum_{i=1}^n(pred_i-y_i)^2$$

$$J=rac{1}{n}\sum_{i=1}^n(a_0+a_1\cdot x_i-y_i)^2$$

$$rac{\partial J}{\partial a_0} = rac{2}{n}\sum_{i=1}^n (a_0+a_1\cdot x_i-y_i) \implies rac{\partial J}{\partial a_0} = rac{2}{n}\sum_{i=1}^n (pred_i-y_i)$$

$$rac{\partial J}{\partial a_1} = rac{2}{n}\sum_{i=1}^n (a_0+a_1\cdot x_i-y_i)\cdot x_i \implies rac{\partial J}{\partial a_1} = rac{2}{n}\sum_{i=1}^n (pred_i-y_i)\cdot x_i$$

AR

PERSONAL FINANCE

careers

A.I. is on a collision course with whitecollar, high-paid jobs — and with unknown impact

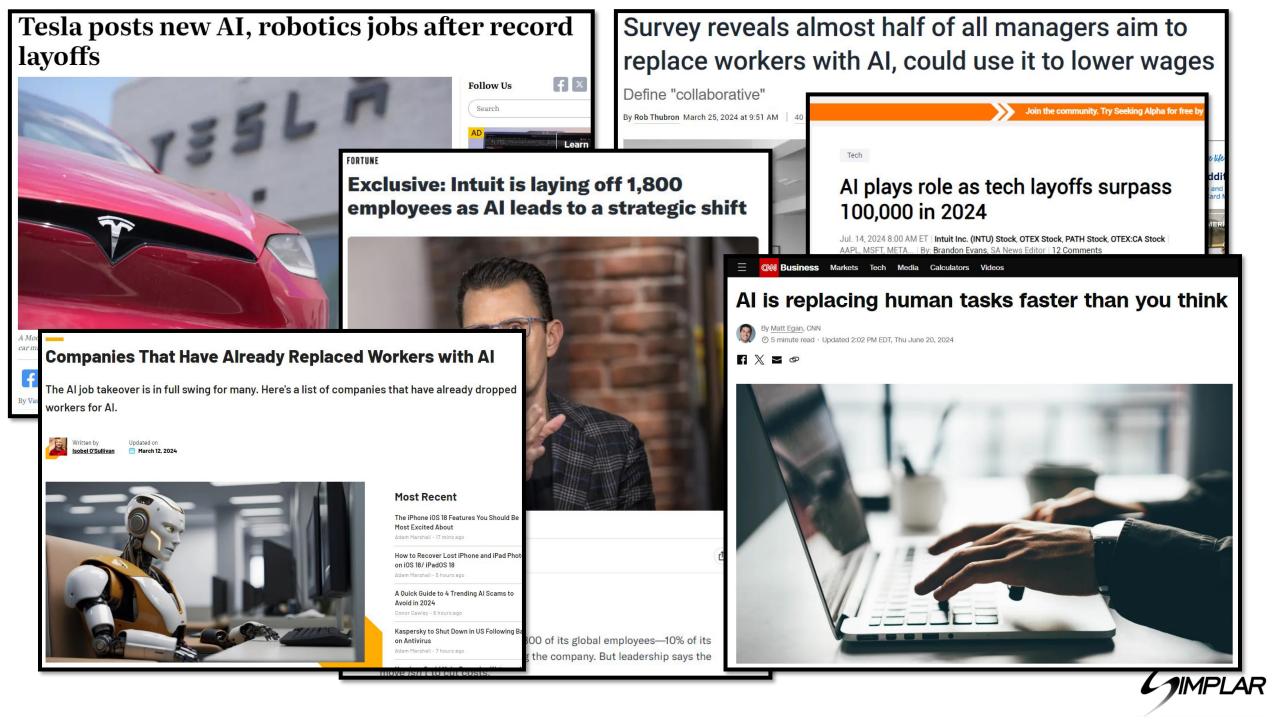
BUSINESS

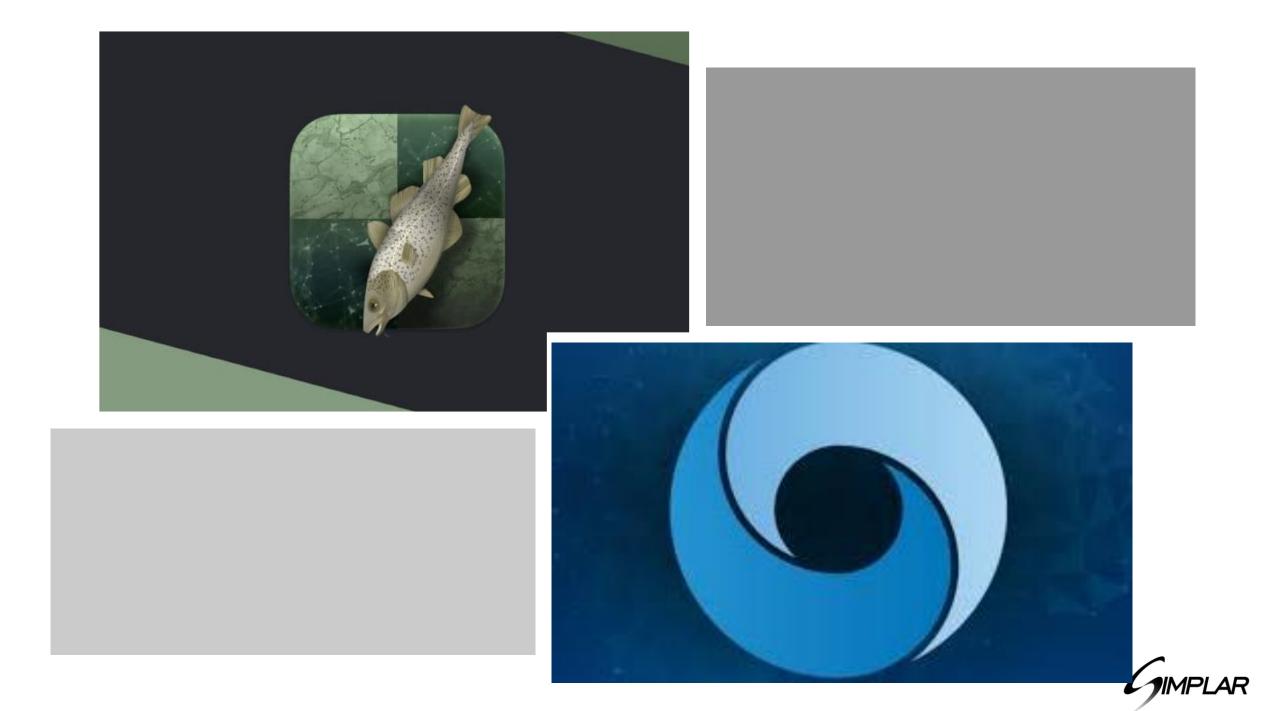
Two-Thirds of Jobs Are at Risk: **Goldman Sachs A.I. Study**

PUBLISHED MON, JUL 31 2023-7:30 AM EDT

t bank's economists estimate that 46% of administrative positions, Forbes ositions, and 37% of engineering jobs could be replaced by artificial ENTERPRISE TECH Half Of All Skills Will Be Guardian Guardian m with \$5 per month **Outdated Within Two Years**, **Study Suggests** Next > Culture Lifestyle More~ Sport nion Joe McKendrick Senior Contributor @ ns as Asia Australia Middle East Africa Inequality Global development I track how technology innovations move markets and Follow AI having 'positive impact' on UK jobs Advertisemen Oct 14, 2023, 11:20am EDT but could increase regional inequalities, says report Study finds new technologies have created and upskilled jobs but disparities in education and investment may affect pace of change million From a resilient and growing occupation to any othe occupation





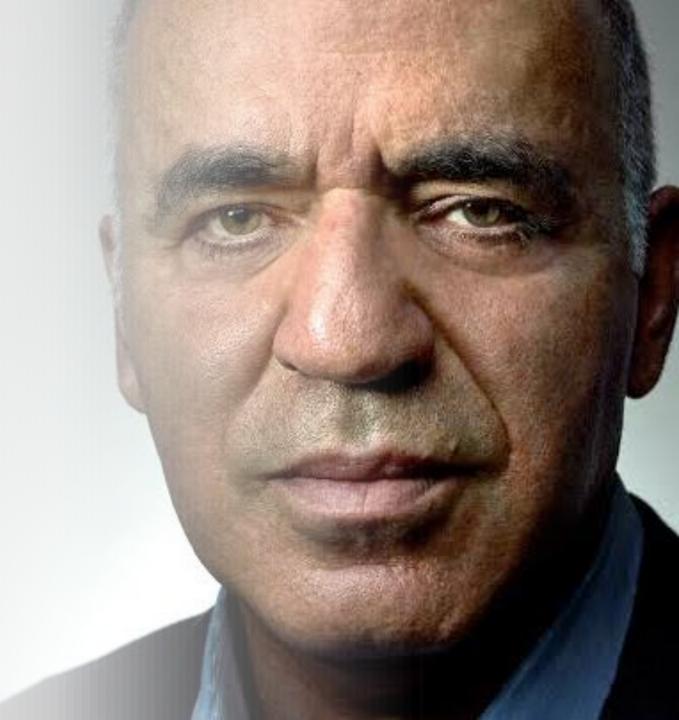


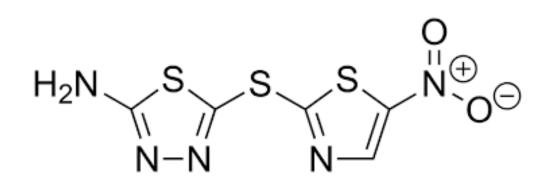


"Chess has been shaken to its roots by AlphaZero"

- Garry Kasparov

Russian Chess Grandmaster, World Champion (1985 to 2000), Ranked #1 for 255 Consecutive Months









Air Force Secretary Frank Kendall

"At the end of the hourlong flight, Kendall climbed out of the cockpit grinning. He said he'd seen enough during his flight that he'd trust this still-learning AI with the ability to decide whether or not to launch weapons in war."



GhatGPT

"GPT" stands for Generative Pre-trained Transformer. It is a type of artificial intelligence model developed by OpenAI that uses deep learning techniques, specifically a type of neural network known as a transformer, for natural language processing (NLP) tasks. Here are the key components of GPT:

1. **Generative**: This term indicates that the model can generate text. It can produce coherent and contextually relevant sentences based on the input it receives, making it useful for a variety of applications like writing assistance, conversation, and content creation.

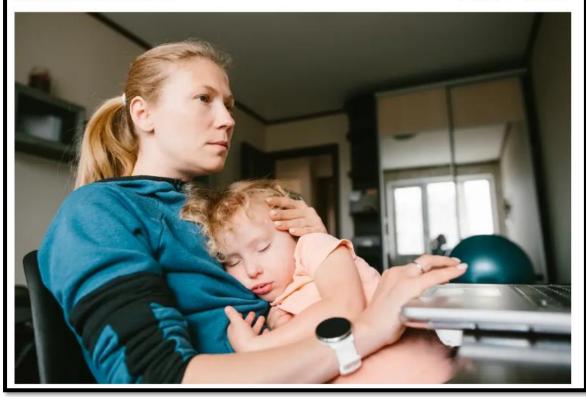
2. **Pre-trained**: GPT models are pre-trained on a diverse and large corpus of text. This training involves learning the statistical relationships between words, phrases, and other elements of language from this vast dataset. This pre-training helps the model understand language and context before it is fine-tuned for specific tasks.

3. **Transformer**: The model architecture is based on the transformer mechanism, which is highly effective at handling sequences of data (like sentences in text). Transformers use mechanisms called attention and self-attention to weigh the importance of different words in a sentence, regardless of their distance from each other in the text. This allows GPT to generate text that is relevant and contextually appropriate over longer distances than previous models could handle.

This is GPT

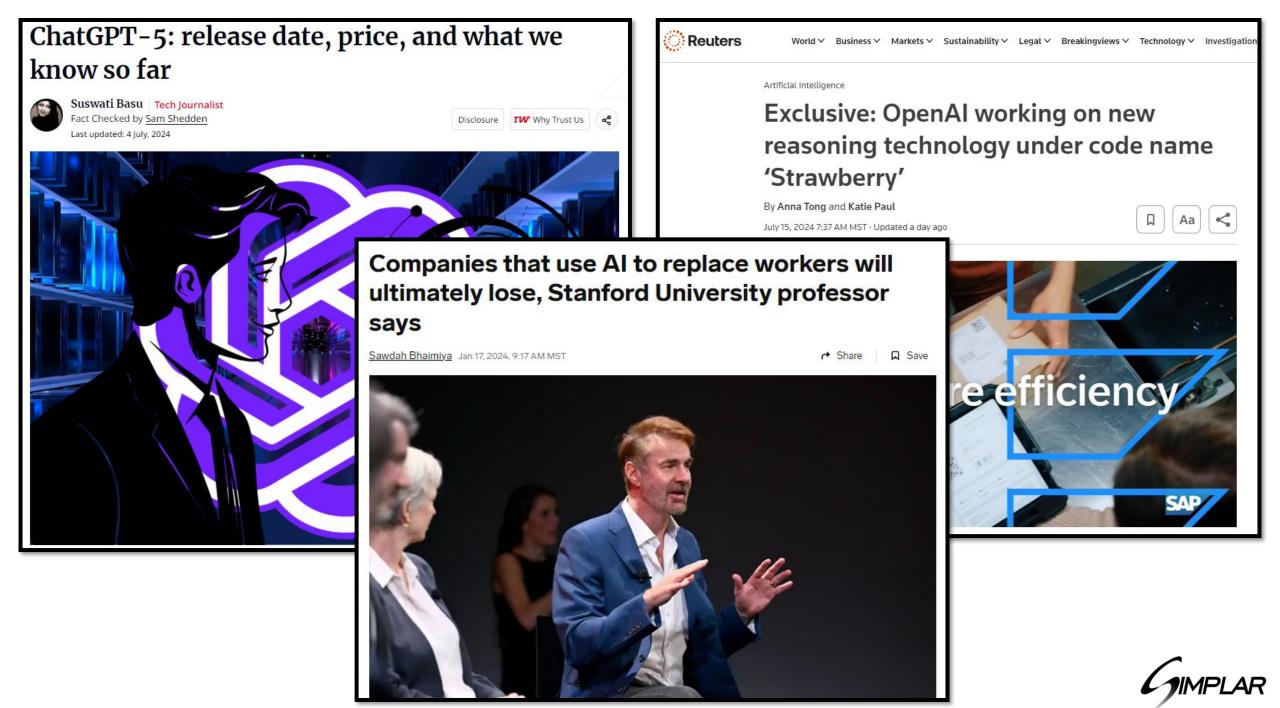
ChatGPT correctly diagnosed a 4-year-old's mysterious disease after 17 doctors failed

Kate Hull Sep 12, 2023, 3:20 PM MST



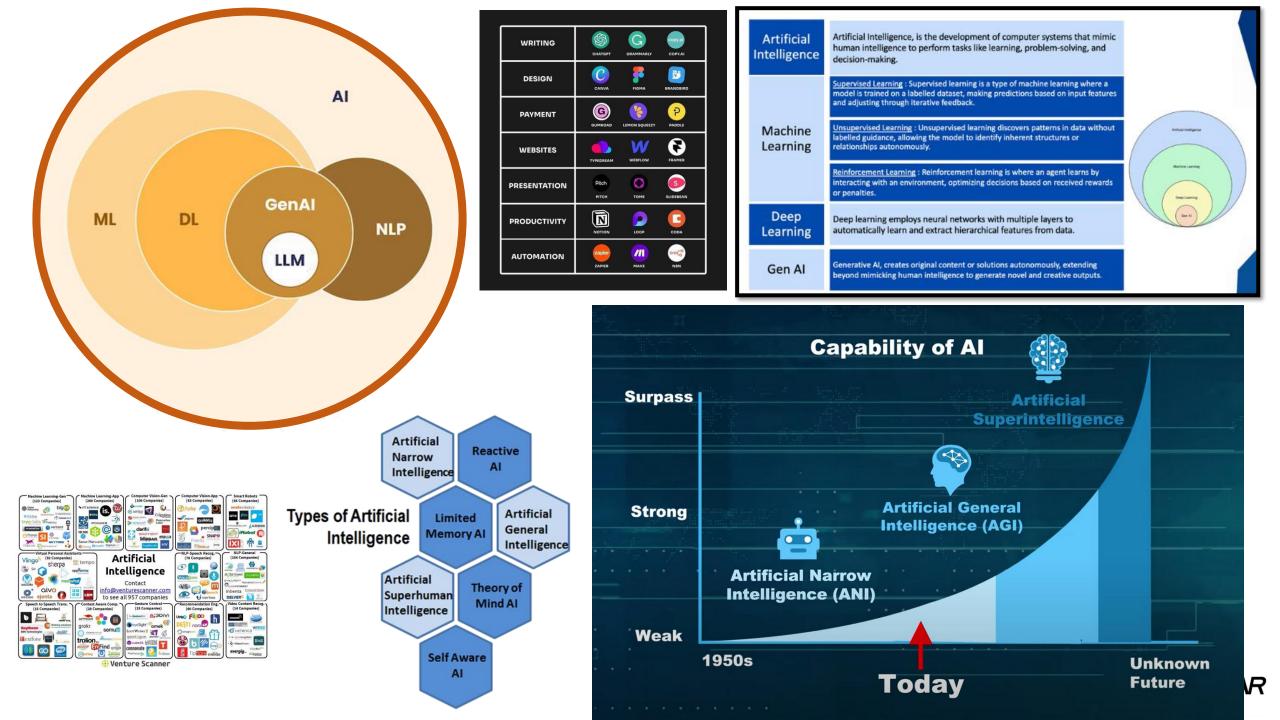
"I went line by line of everything that was in his (MRI notes) and plugged it into ChatGPT," she says. "I put the note in there about ... how he wouldn't sit crisscross applesauce. To me, that was a huge trigger (that) a structural thing could be wrong." (Mother)

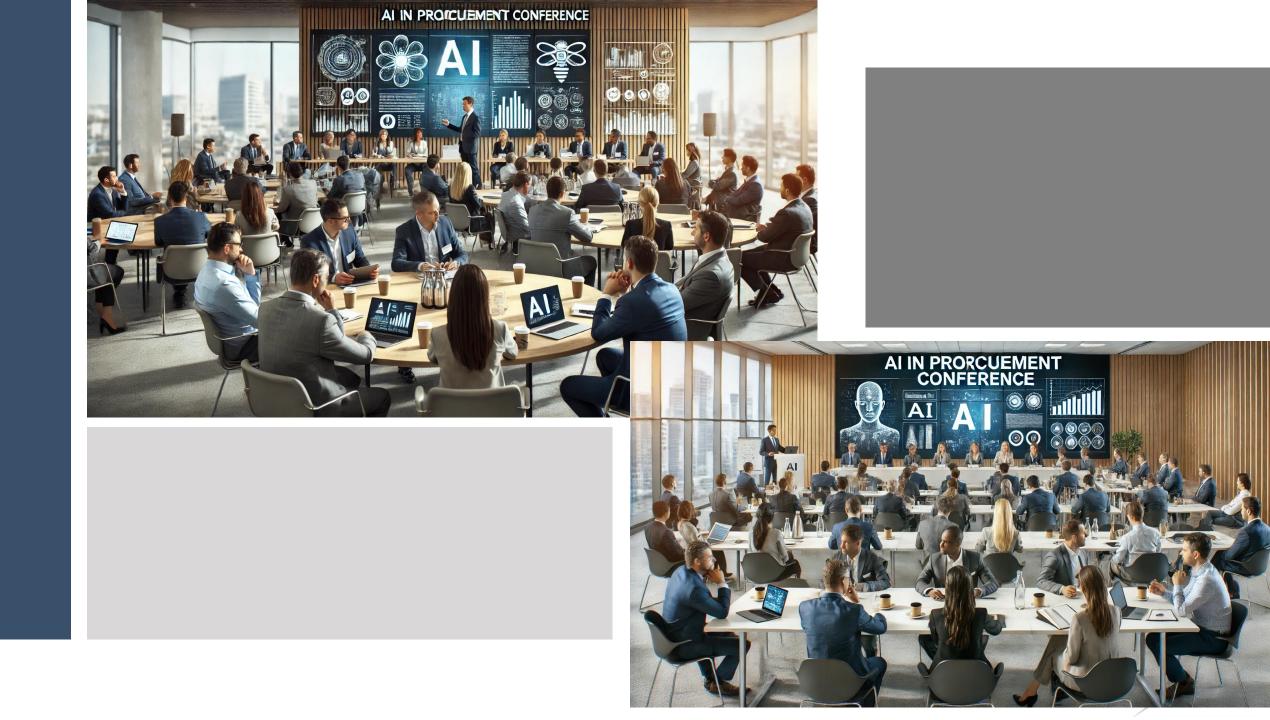




What is AI?

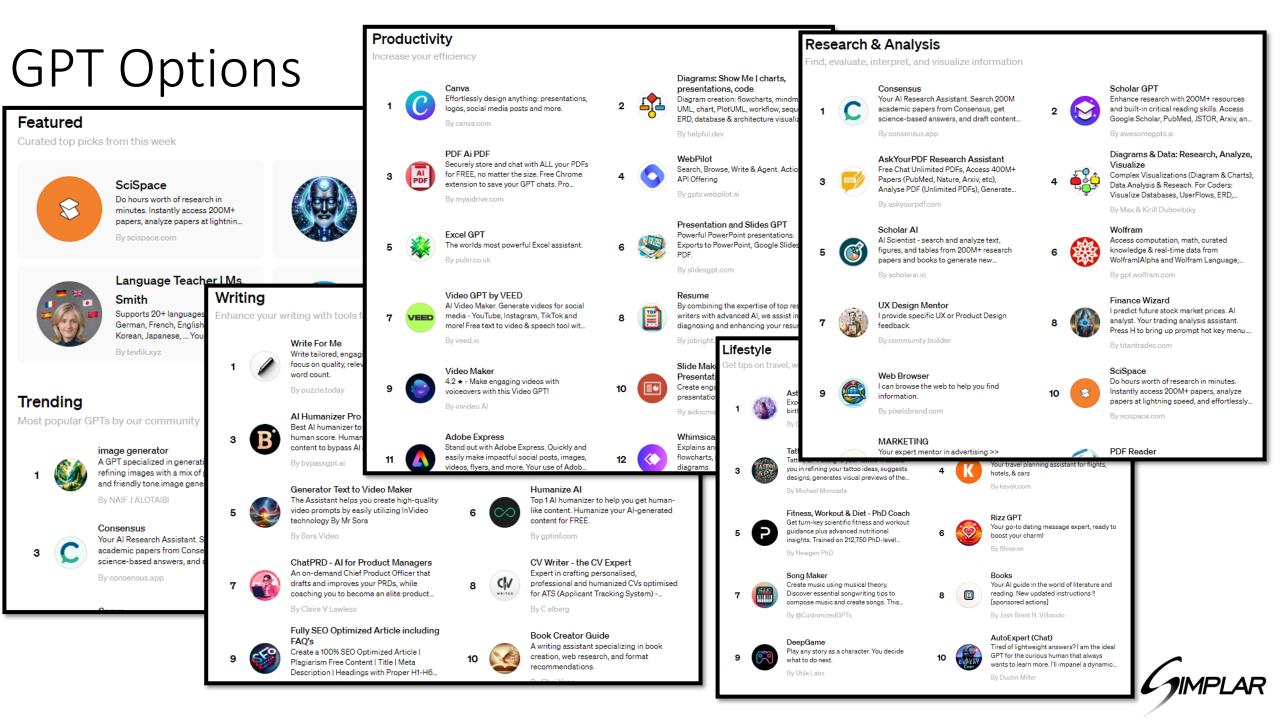
- Artificial intelligence (AI) refers to systems or machines that mimic human intelligence to perform tasks and can iteratively improve themselves based on the information they collect. AI manifests in various forms, such as:
 - Machine Learning (ML): This involves algorithms that learn patterns and insights from data without being explicitly programmed. For instance, a machine learning model could learn to identify cats in photos by analyzing thousands of images.
 - Deep Learning (DL): is a subfield of machine learning that is particularly effective at learning from large amounts of data. It uses algorithms called neural
 networks that are designed to recognize patterns and features in data in ways that mimic human brain function, albeit at a very simplified level. Uses large
 sets of raw data
 - Natural Language Processing (NLP): It mimics human language and is the technology behind how machines understand and interact with human language. It's
 used in applications like chatbots, translation services, and voice-activated assistants. Uses data to make predictions.
 - Large Language Model (LLM): No longer just mimicking natural language, but able to understand and respond/speak with contextually relevance.
 - Generative AI (GenAI): A type of artificial intelligence that can create new content like text, images, music, audio, and videos. Generative AI uses neural
 networks to identify structures and patterns in existing data to generate new content. This allows computers to produce outputs that are often
 indistinguishable from human-generated content.
 - Robotics: This involves designing robots that can perform tasks that are usually done by humans. These robots often use AI to handle tasks such as navigating around obstacles or manipulating objects.
 - Computer Vision: AI in this field enables machines to interpret and make decisions based on visual data. Applications include facial recognition systems, medical image analysis, and autonomous vehicles.
 - Expert Systems: These are AI systems that use databases of expert knowledge to offer advice or make decisions in such areas as medical diagnosis and the stock market.





new image request - show a procurement professional using AI





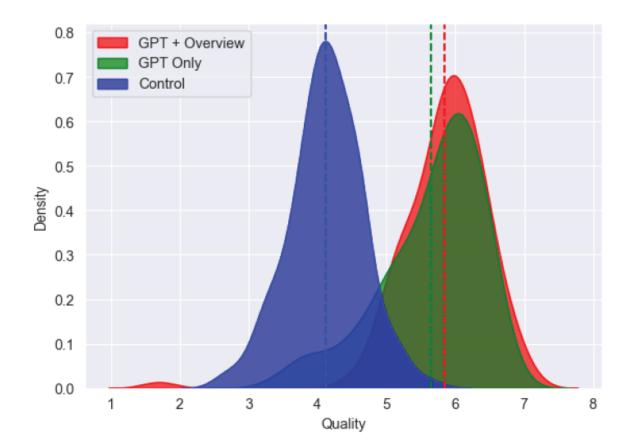
Currently Two Paths

- People say "AI" but really "two paths"
- Path 1: Generative + Assistance (Good to OK now)
 - ChatGPT, Gemini, Co-Pilot, plugins for current apps/software
- Path 2: AI Enable Solutions (Wild West)
 - "Applications/Software"
 - 6000+ in past 12 months



A Piece of the Workforce Solution

- Generative AI is here NOW
- Recent Study of impact of GenAl
 - 12.2% More Tasks Completed
 - 25.1% Less Time per Task
 - 40% Higher Quality
 - AI Training Significantly Increase Efficacy
 - For control performance
 - For those starting below average performance Al improved performance 43%
 - For those starting above average performance Al improved performance 17%
- My study on students with AI enable tech was significant improvement – 10 to 30% performance impact (+ speed impact)





One Quick Thing About Al....

- In most all previous technologies and innovations junior (or younger) employees were very effective at teaching and helping the more experienced and senior employees learn and adopt the new technology
 - Largely due to willingness to try innovation that conflicts with traditional or standard practice (and not having invested as much time & expertise)
- For AI, this is being proven to NOT BE TRUE for AI. Juniors are not more capable than seniors at adopting AI
- Thoughts are the technology is so different that being younger is not as advantageous....



<u>Click here to</u> join the interest list!

Al Procurement Boot Camp Fall 2024

• Three interactive sessions:

- 1. Using AI to Write Better Statements of Work
- 2. Unlocking the Power of AI in Data Analytics for Procurement
- 3. Creating a Custom-AI Tool for your Organization
- Al Tools for Procurement: Master Al technologies to enhance procurement practices.
- **Boosted Productivity:** Streamline meeting and email management to improve efficiency.
- **Contract Analysis:** Quickly analyze and evaluate purchasing contracts.

FREE Online Course! 10 PDH

Now: Oct 17, 24, 31, Nov 1

2025 x 3 times (Jan, May, Aug)





Better RFPs = Better Projects

- Session #1 = Organizing a High-Performing RFP
- Session #2 = Effective Statements of Work (SOWs)
- Session #3 = Evaluation Best Practices & Vendor Debriefings
- Session #4 = RFP Administration

NASPO's Procurement U

- Log on to the Procurement U Learning Management System (LMS) to register, access the course and materials. <u>www.naspo.org/procurement-u/</u>
 - or Email Amy: <u>amy@center4procurement.org</u>
- Open to all (even non-members of NASPO)

NEWer Courses by CPE + NASPO

- The 1, 2, 3's of a Great Scoring Matrix (2025x2 = Feb, Oct)
 - -Session #1: Creating an Evaluation Matrix [90min]
 - -Session #2: Complexities of Real-World Scenarios [90min]

- Deep Dive on Effective Evaluations (2025 x2 = Mar, Oct)
 - -Session #1: Planning Your Evaluation Strategy [90min]
 - -Session #2: Training Your Evaluators [90min]
 - -Session #3: Strategies for the Negotiation Phase [90min]



Free Webinar Series!

15min Teaching Moment

(learn a new tip, trick, or tool)

20min Virtual Peer Group

(network with other procurement professionals)

3rd Thursdays monthly

@ 12pm Central

5min Announcements & Opportunities

(upcoming courses & other ways to get involved)

Office Hours

(open Q&A until the questions run out!)





center4procurement.org/rfp-doctor

Invite your Friends!



center4procurement.org/rfp-doctor

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We will send you your personal admission credentials via email.

Name	Organization
For all	
Email	
What is your current job level?	~
REGISTER NOW!	

RFP Doctor Sign-up (FREE)



Previous Recordings Available Online!



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JOIN US FOR OUR NEW WEB SERIES

me center for Procurement Excellence is pleased to announce a free new interactive web series, "Ask of the RFP Doctor". In this first-of-its-kind virtual discussion, procurement experts provide practical advice in addressing today's purchasing, supply chain, and acquisition challenges. Here's how it works:

• **Teaching Moment (15 minutes):** the RFP Doctor will kick things off with a brief presentation targeted at a specific topic

• CPE Virtual Peer Group (30 minutes): next, we will split up into small groups and give attendees an opportunity to network with each other and have a discussion on a relevant topic. Learn More

• Ask the RFP Doctor – Office Hours (15 minutes or until the questions run out!): we'll come back together for an open Q&A session. Have a challenging RFP ahead? Have a unique situation? Bring your questions and let's get it figured out!

Third Thursdays of every month starting at 12:00pm Central

TEACHING MOMENT ARCHIVE VIDEOS

Previous Recordings Online!

center4procurement.org

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NEW RESOURCE – CEU Hours!!!

 CPE is pleased to announce that all attendees @ <u>live</u> "Ask the RFP Doctor" events will receive 1 hr Continuing Education Unit (CEU)!



Realistic & Immediate Solutions

- Become a "Client of Choice"
 - (for External Vendors & Internal Customers)
- Move to a Collaborative Approach Authentic Partnerships
- Increase your HD IQ (Human Dimensions)
- Train your People the right way become better sooner



Unique Leadership Considerations for Leaders

- Actions today vs tomorrow what is the timeline?
 - Generative (ChatGPT) NOW
 - AI Apps/Enabled requiring investment WAIT (18-36months)
- New Impacts Not experienced from other innovations
 - Structural impacts organizational (depts, functions), foundational (basics of procurement)
 - Cultural & Mind Impacts changing work patterns (80%/20% losing the 80%)
 - Constant Change change adoption culture
 - Outperforming Humans new baseline for value



Future – I am Very Excited

- What do I know? = Nothing
- Prices = Uncertainty; Materials = More Certain; Limited control of either
- Labor = A New Model Needed; Key Differentiator
- Possibility of Tremendous Improvements
 but window may be tight
 - Technological Revolution

Jake.Smithwick@charlotte.edu

