

FutureSkill

How People, Technology, and Skills Are
Reshaping U.S. Workforce Development Policy
and Practice

October 11, 2023

Innovators by Design

Brent Orrell, Senior Fellow @ AEI



Today's Learning Agenda

Complexity

People, Technology, and Skills

The “Double-Helix”

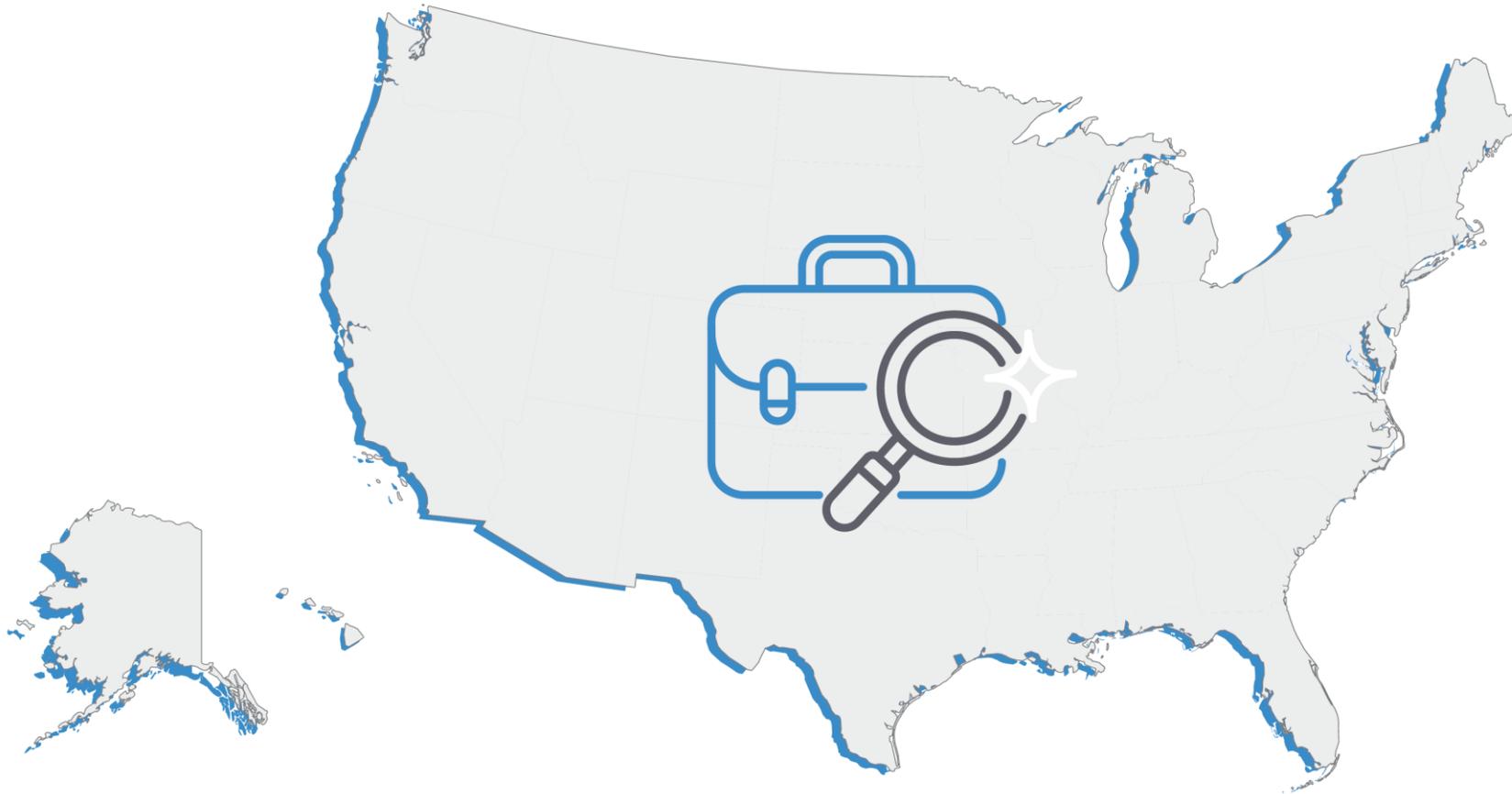
From Agencies to Agency



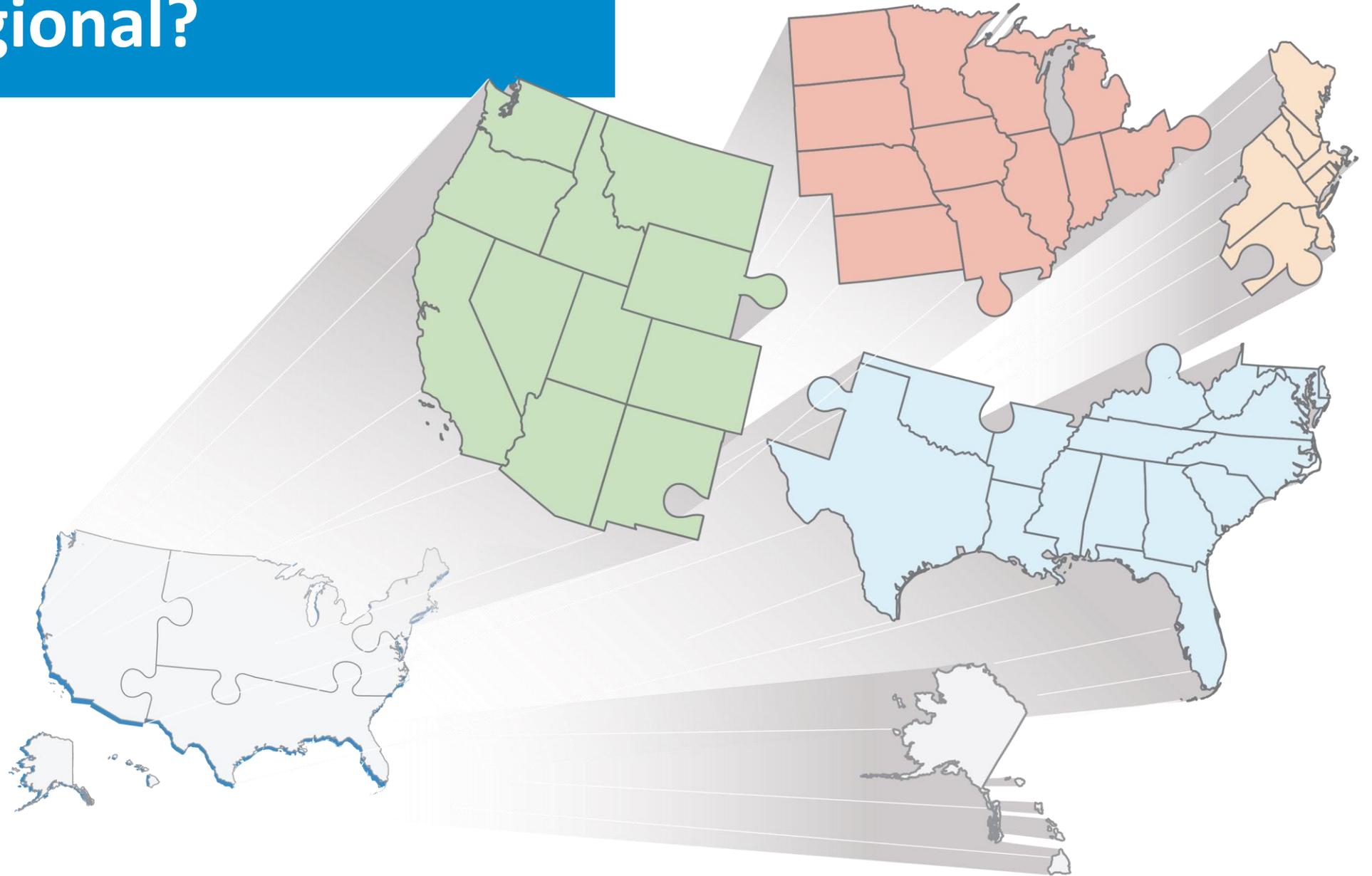
What is a labor market?



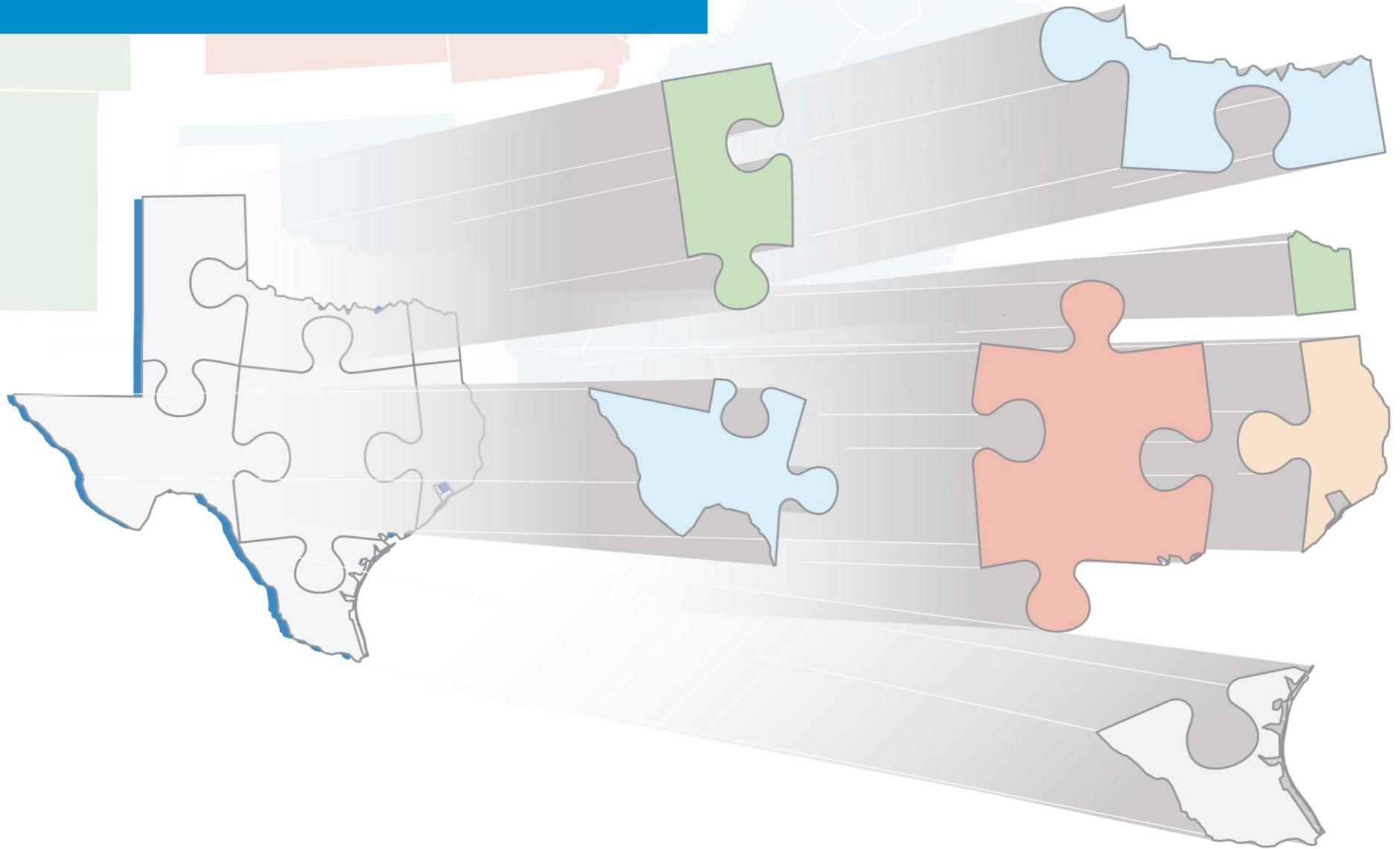
Is it national?



Is it regional?



Is it local?



“Plans are useless – planning is essential.” – General Dwight Eisenhower



The Workforce Futures Trilemma



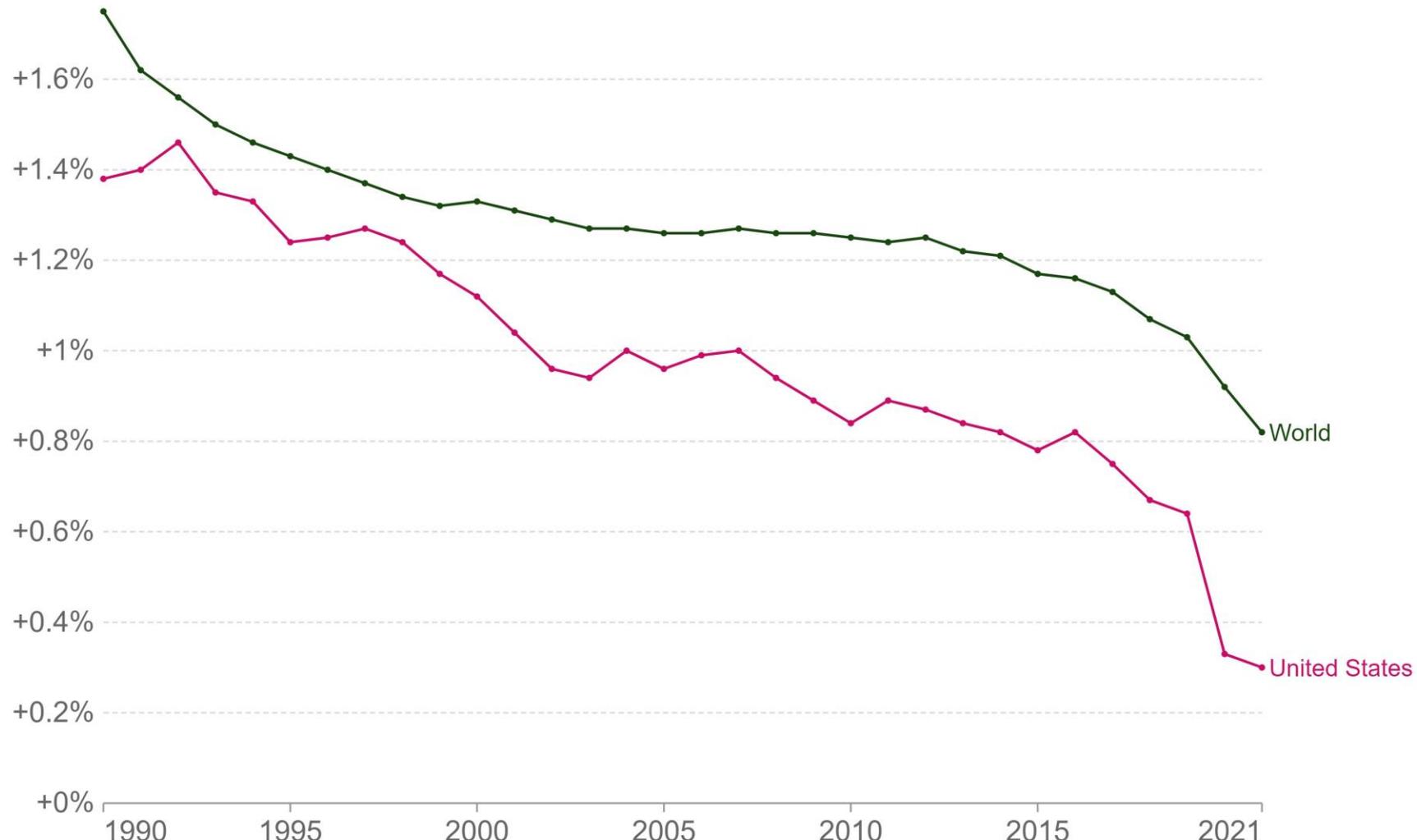
- Demography
- Technology
- Adaptability

Demographics: Population growth

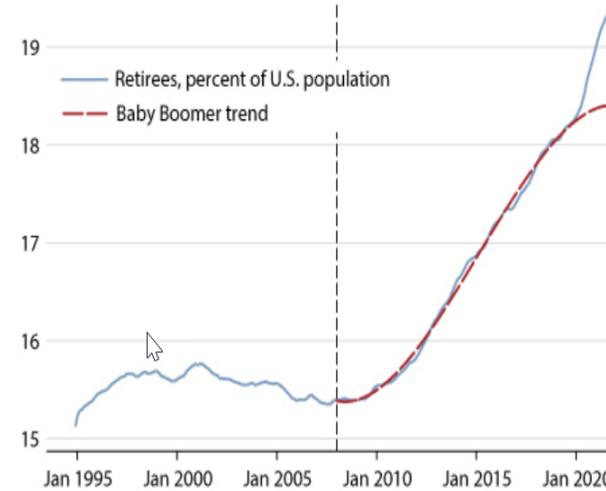
Population growth rate, 1990 to 2021

The growth rate is the population change determined by births, deaths, and migration flows.

Our World
in Data

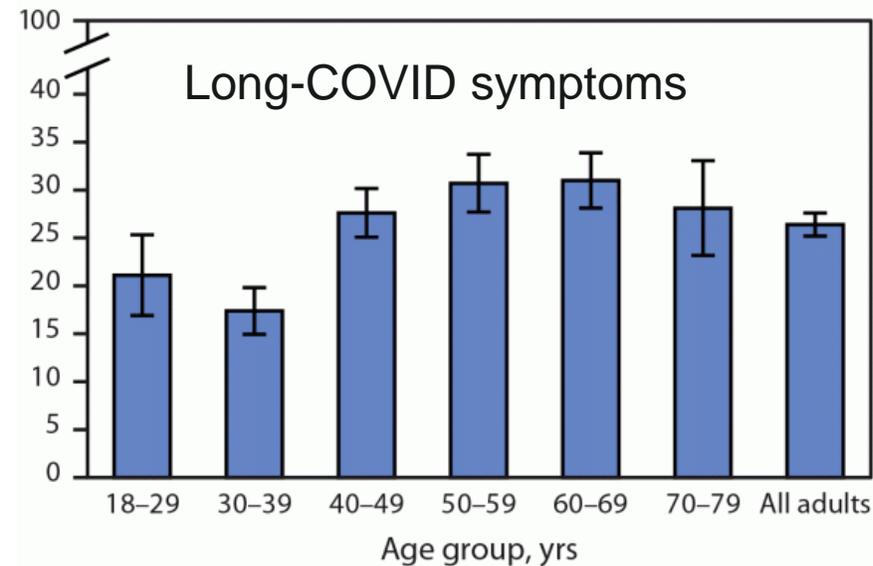
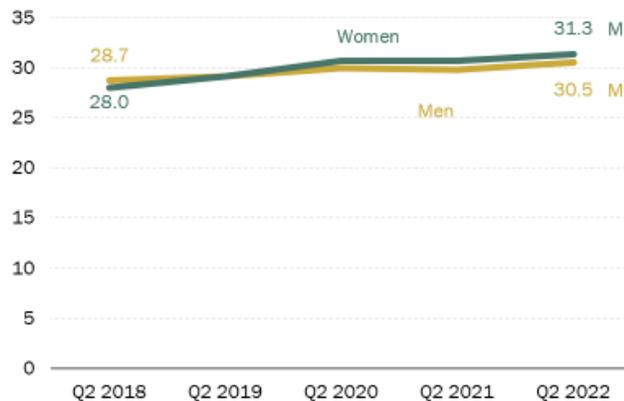


Demographics: Labor force participation



Women now represent a majority of the college-educated labor force in the U.S.

Number of people ages 25 and older in the U.S. labor force with at least a bachelor's degree, in millions



Here comes AI



Artificial Intelligence: Powering Up

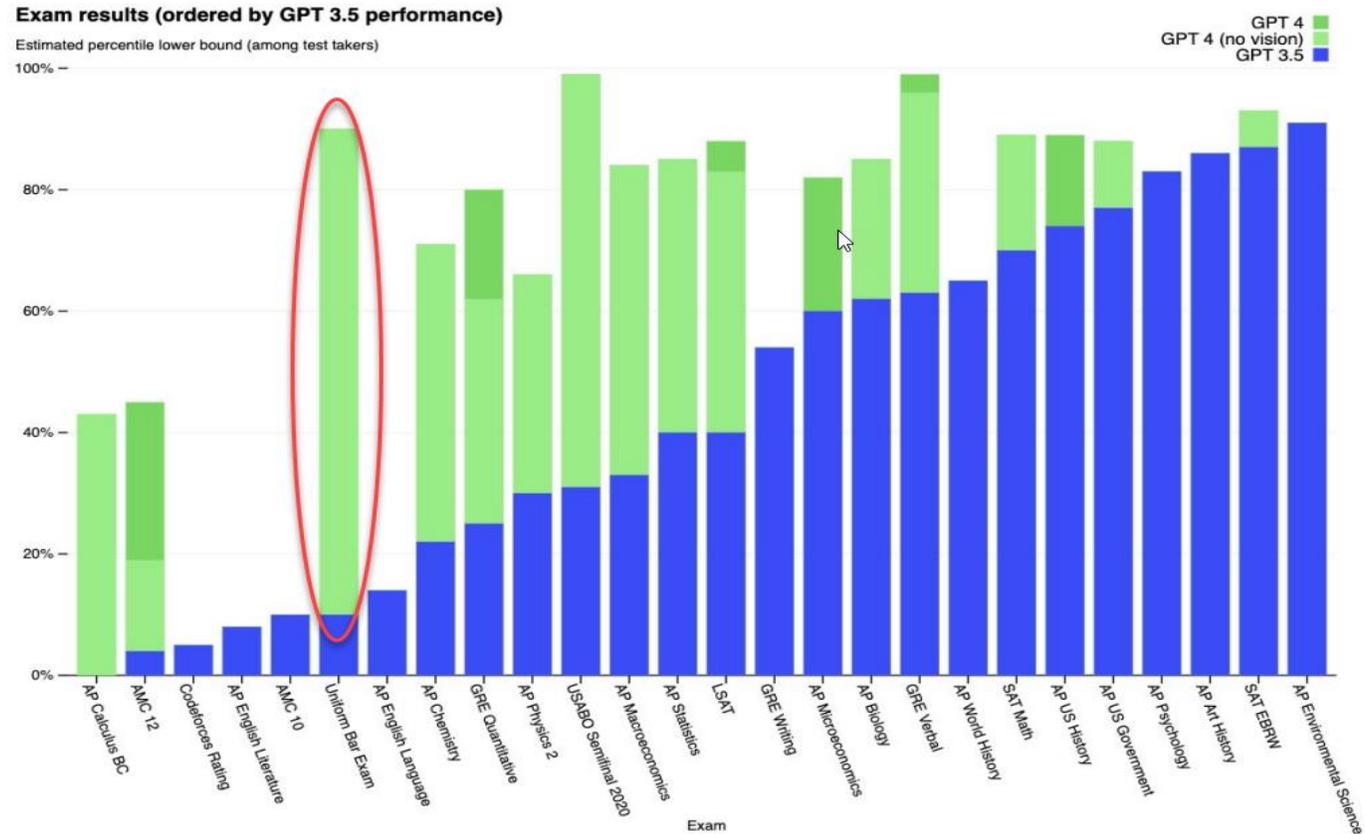
Blue=ChatGPT 3.5

Green=ChatGPT 4

80% exposed to AI

20% fully automatable

Automation “inversion”

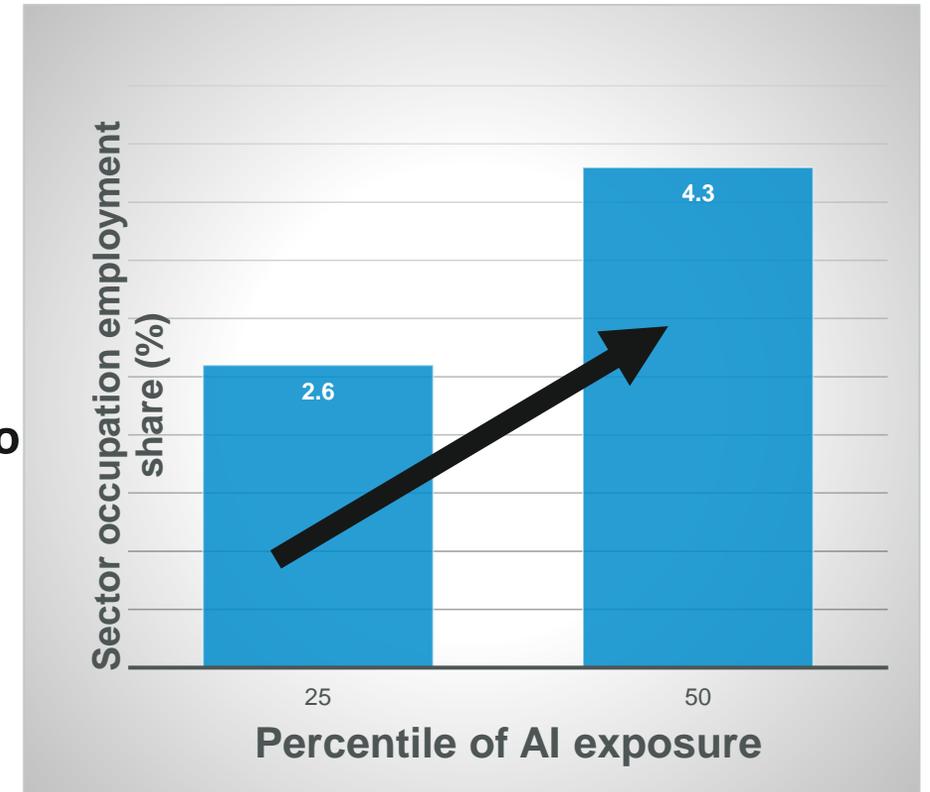


(Graph from Eloundou *et al.*, “GPTs are GPTs,” [CC BY-SA 4.0].)



Artificial Intelligence

- Sectors with a high *potential* for AI-enabled automation show *increased* employment shares for higher skilled workers
- Steady-state for middle-/lower-skilled workers
- **Skill development/human capital accumulation continue to be the best defense against job loss amid technological change**

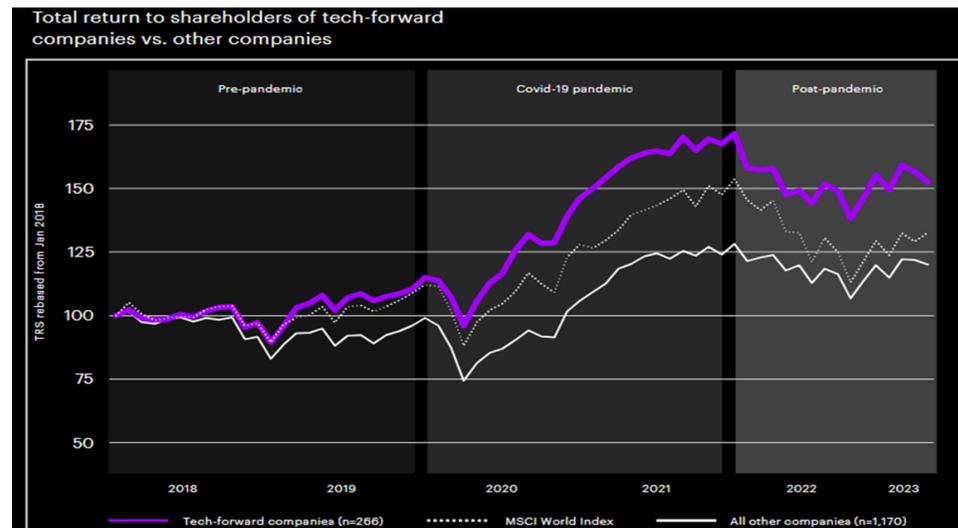


Source: <https://www.nber.org/papers/w31357>

Artificial Intelligence & “the C-Suite”

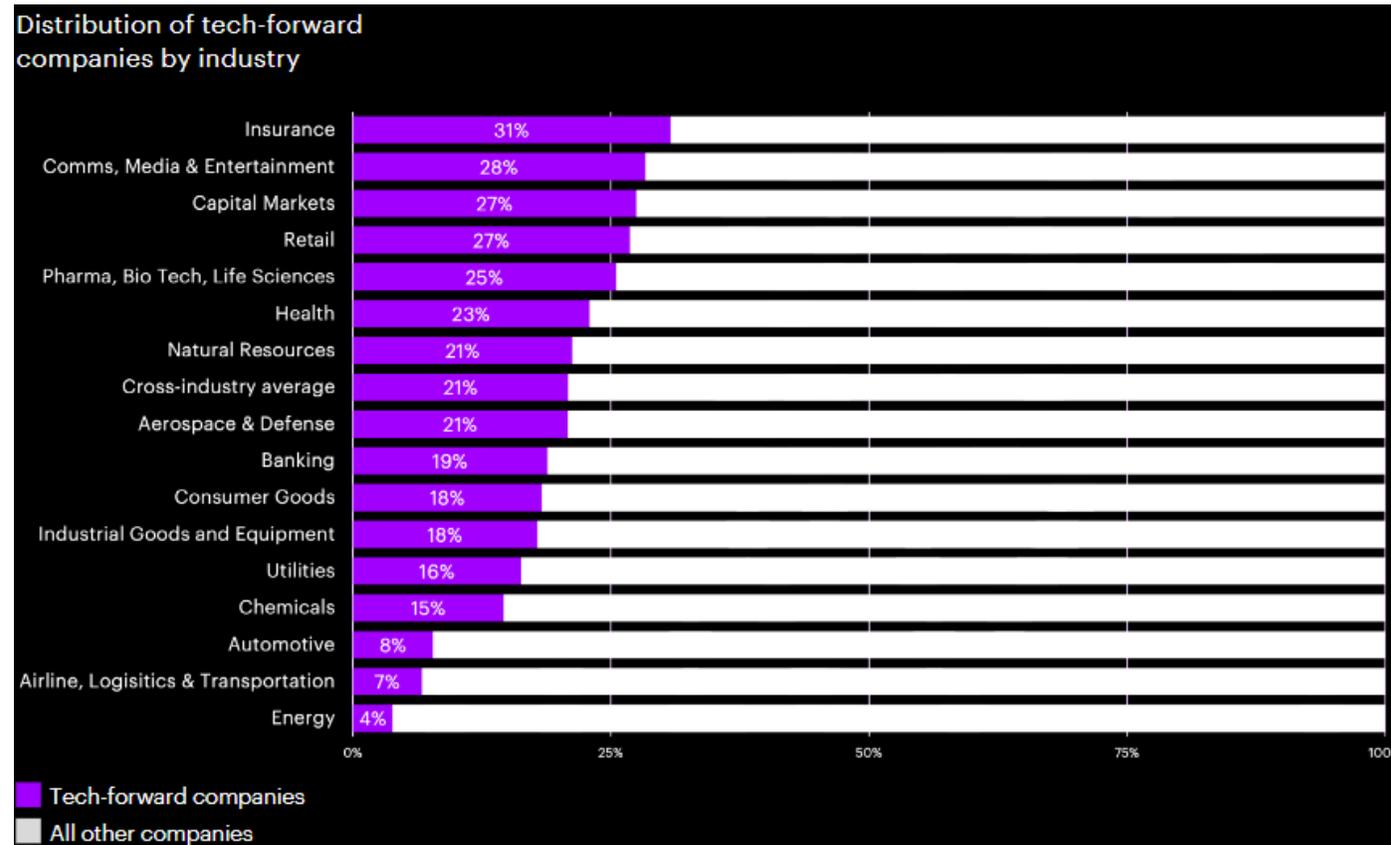
Accenture paper (2023):

- Companies need more dynamic business strategy
- 21% of companies have integrated AI
- Tech-forward companies out-perform competitors



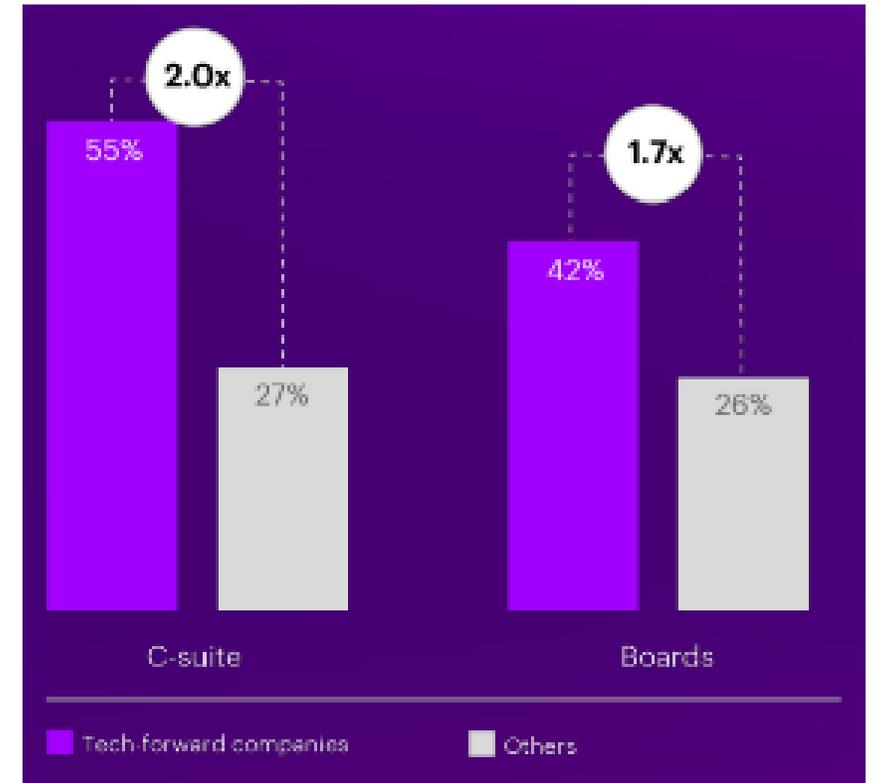
Artificial Intelligence & “Growth-mindset”

- Tech-forward companies aren't all tech companies



Artificial Intelligence & “Growth mindset”

- Tech-forward executives are tech-fluent: principles, vocabulary, systems
- Tech-forward companies have C-suites and boards with a “very strong tech mindset”
- **“Growth mindset” and upskilling also important for CEOs**

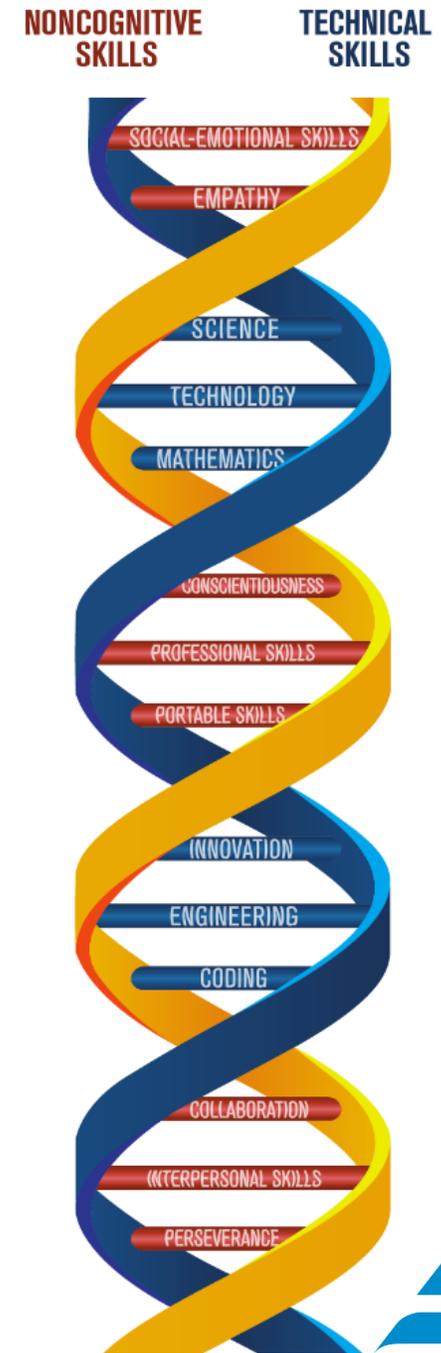


“Growth mindset” and the Skills “Double Helix”



Skills Double-Helix

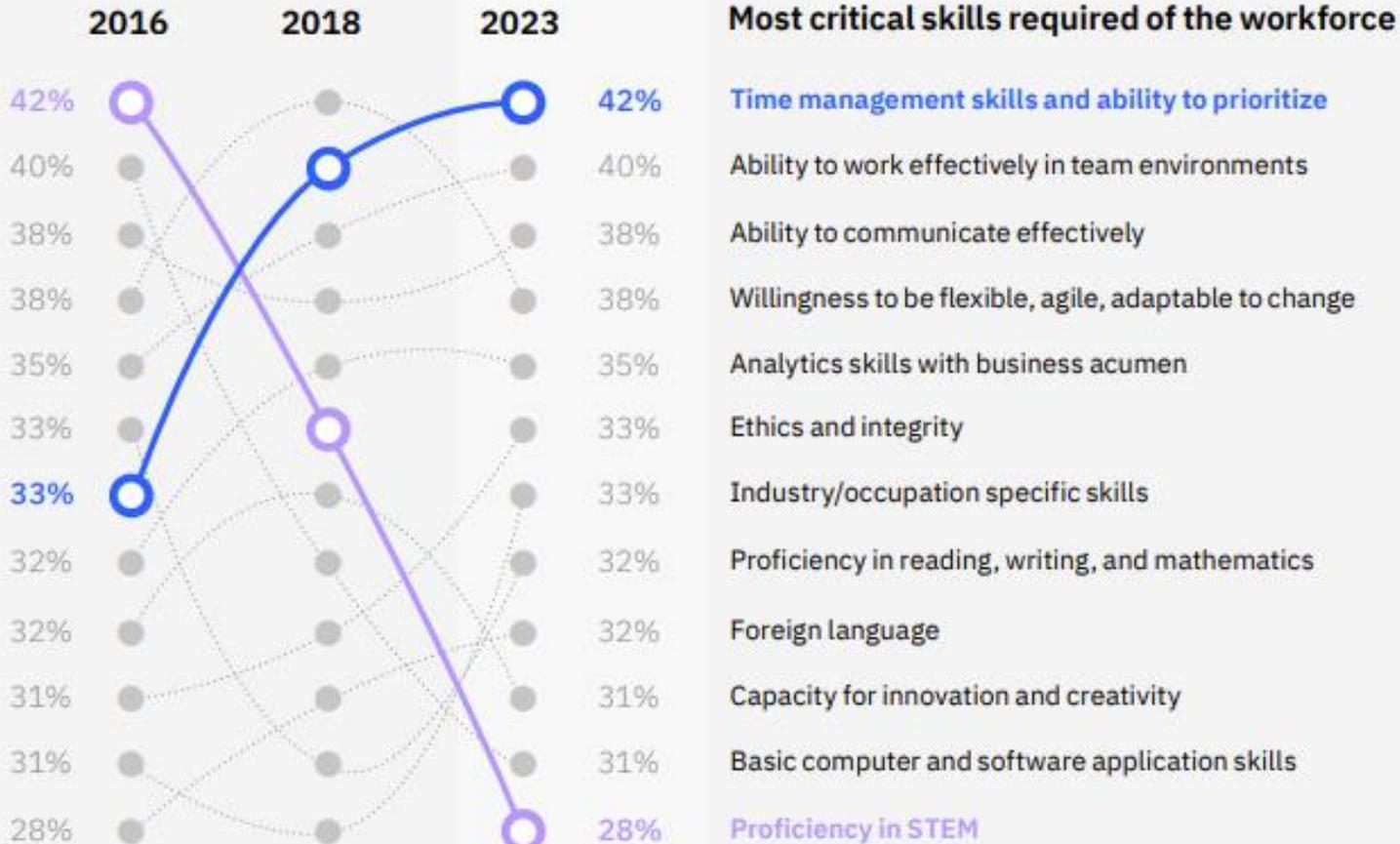
- The human “operating system”
- Technical skills are “taught”
- Noncognitive skills are “caught”
- *Noncognitive skills = “growth mindset”*



The employer view

A new skills paradigm

STEM skills drop in importance as people skills rise to the top.



Source: [Augmented work for an automated, AI-driven world | IBM](#)

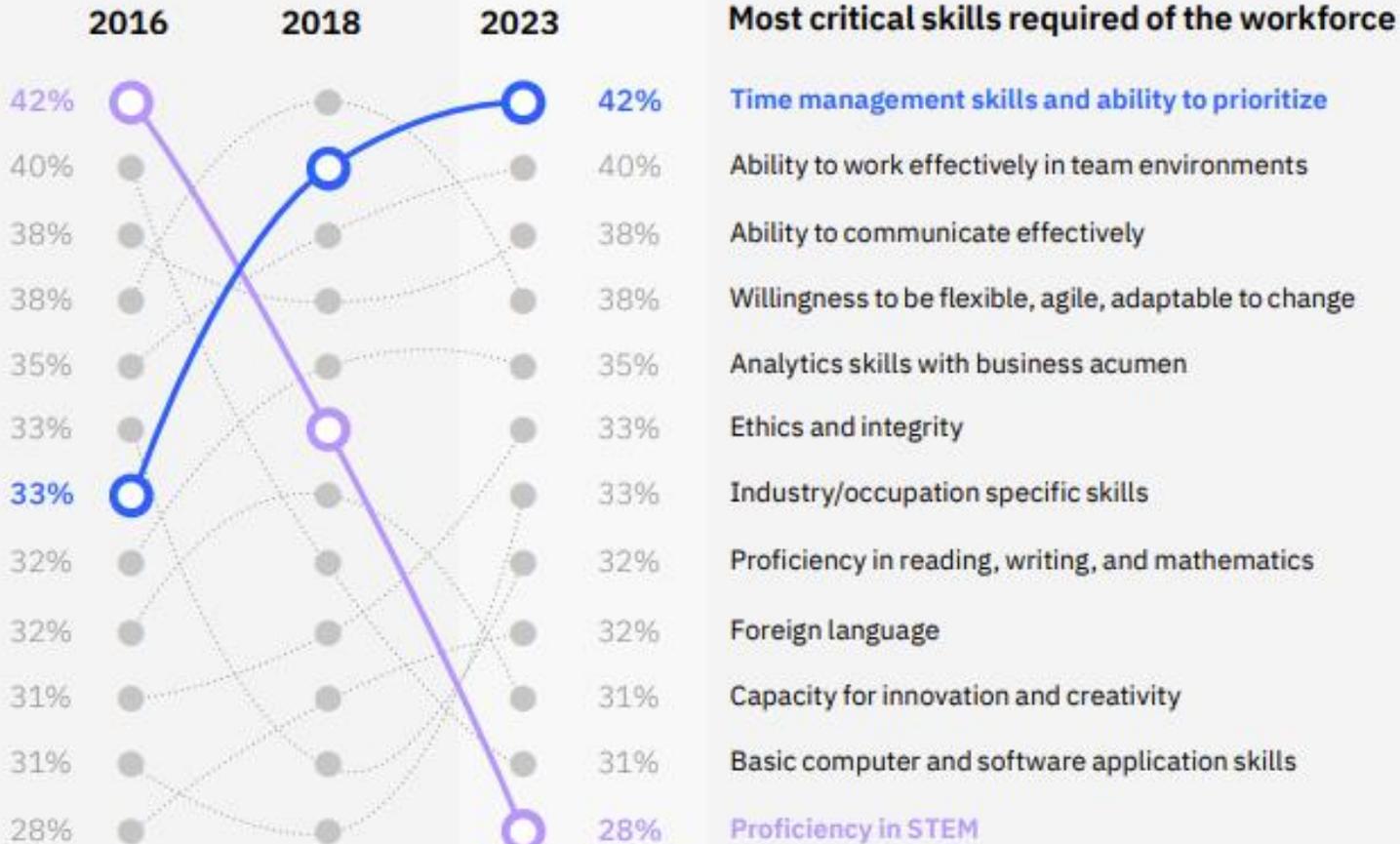
Noncognitive Skills



The employer view

A new skills paradigm

STEM skills drop in importance as people skills rise to the top.



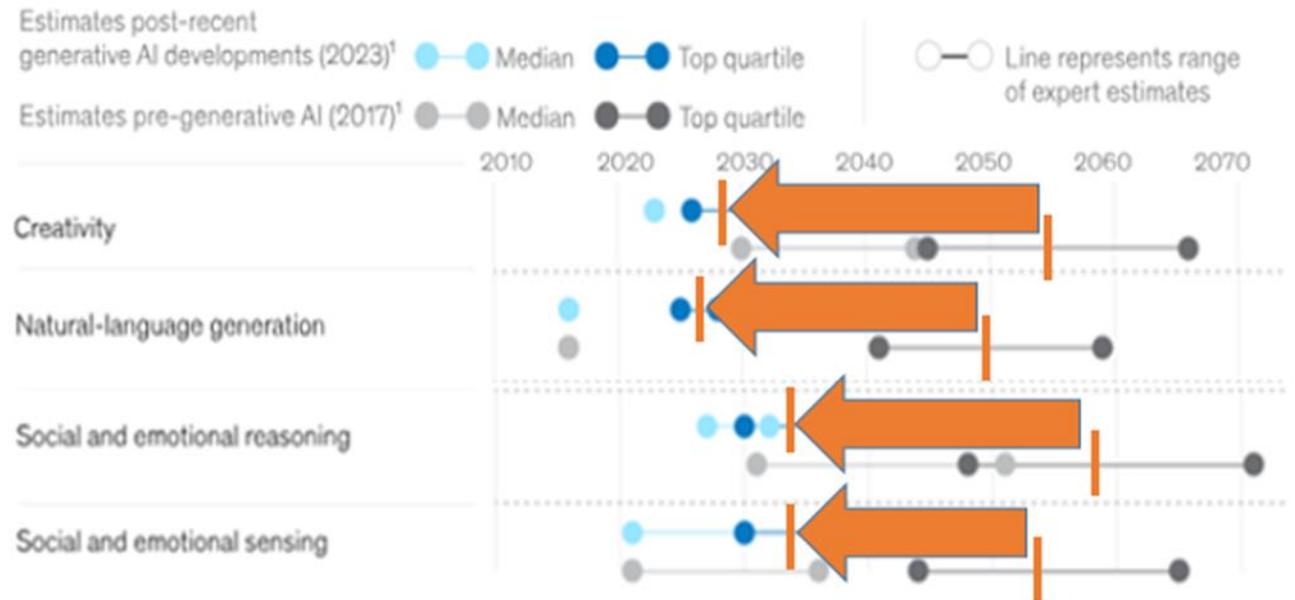
Source: [Augmented work for an automated, AI-driven world | IBM](#)

What's the future of noncognitive skills?

- Generative AI to reach “top quartile” human ability 10 years sooner
- So, what should students and workers do?

Source: [Economic potential of generative AI | McKinsey](#)

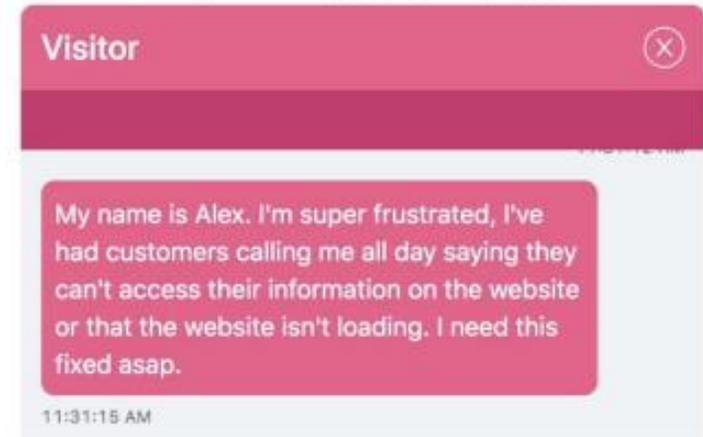
Technical capabilities, level of human performance achievable by technology



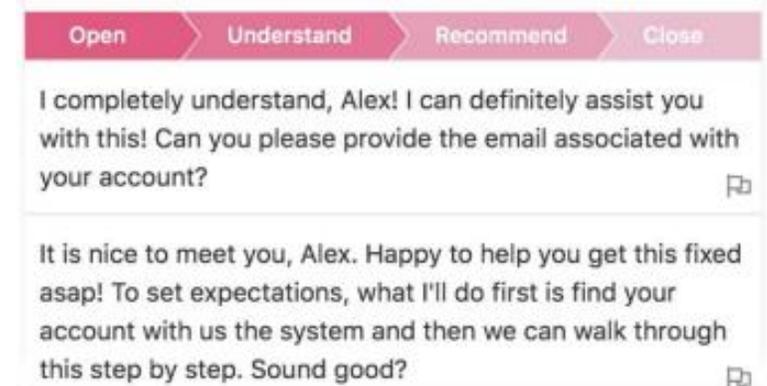
A Two-fold Answer

- Skills are an investment. Hedge them.
- Advances in generative AI could help across skill levels:
 - Increased productivity by 14%
 - Faster on-boarding, less turnover
 - Less-experienced gained most
 - Higher customer satisfaction
 - AI built on “**best-practices of high-skill workers**”
 - Solving “Polanyi Paradox”

A. SAMPLE CUSTOMER ISSUE



B. SAMPLE AI-GENERATED SUGGESTED RESPONSE

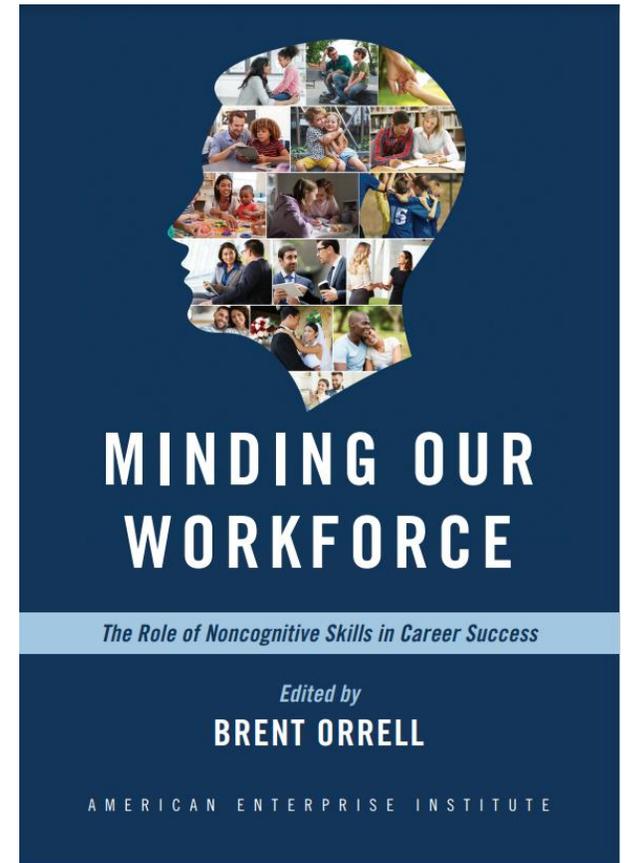


Source: <https://www.nber.org/papers/w31161>



Minding Our Workforce

- Key Takeaways
 - Theories of noncognitive skills grounded in socio-economic theory and interpersonal neurobiology
 - Correlate to labor market success (high wage and satisfying employment)
 - AI *may* improve social-emotional response and perception



Take-homes:

Uncertainty is a challenge & an opportunity

Labor shortages are chronic

Flexible workforces, flexible workers

Get men back to work, help kids prepare

Build up *agency* and streamline *agencies*



Brent Orrell

Brent.Orrell@aei.org

@OrrellAEI

