Future-proofing Organizations for the AI Revolution through Talent Development

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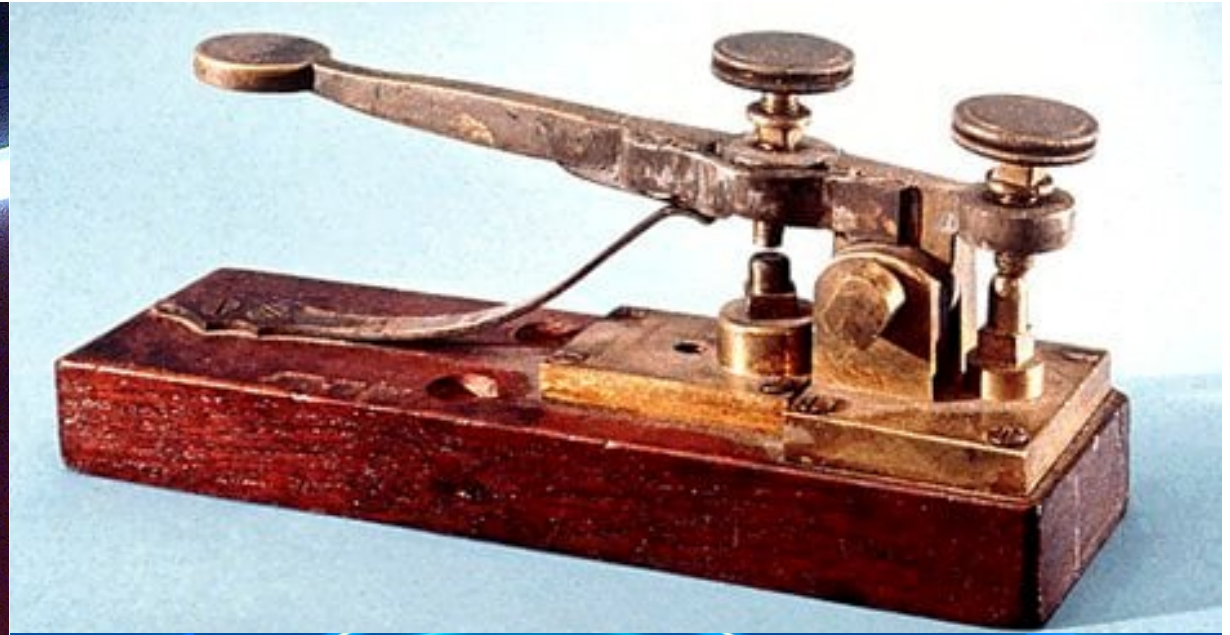
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Technology & Society

Fear stems from lack of understanding.

Fear & SciFi

Is this how YOUR 2020 looked?

Past technological change hype…

AI is here to challenge our views.

"The changing nature of technology and work…[is] an antecedent to social and organizational developments." Zuppo, 2011

Misconsception:
AI will require us to think less

Reality:
Everything is Strategic

"**Organizations are consumers of human capital through technological means**." Zuppo, 2011

Operationalizing Human Capital

Human Capital

= Education + Skills + Experience + Health + Motivation

= Skills + Knowledge + Experience
Human Capital = (Knowledge + Skills + Abilities) x Motivation x Productivity

= (Education + Training + Experience) x (Health + Well-being) x (Work Ethic + Engagement)

Human Capital **ROI**

= Total Profits / Human Capital Expenses

Human Capital **Ratio**

= Human Capital Expenses / Total Operating Expenses

Future-proofing is an "everyone" problem.

Arguments such as where work takes place will be less important as workplaces evolve.

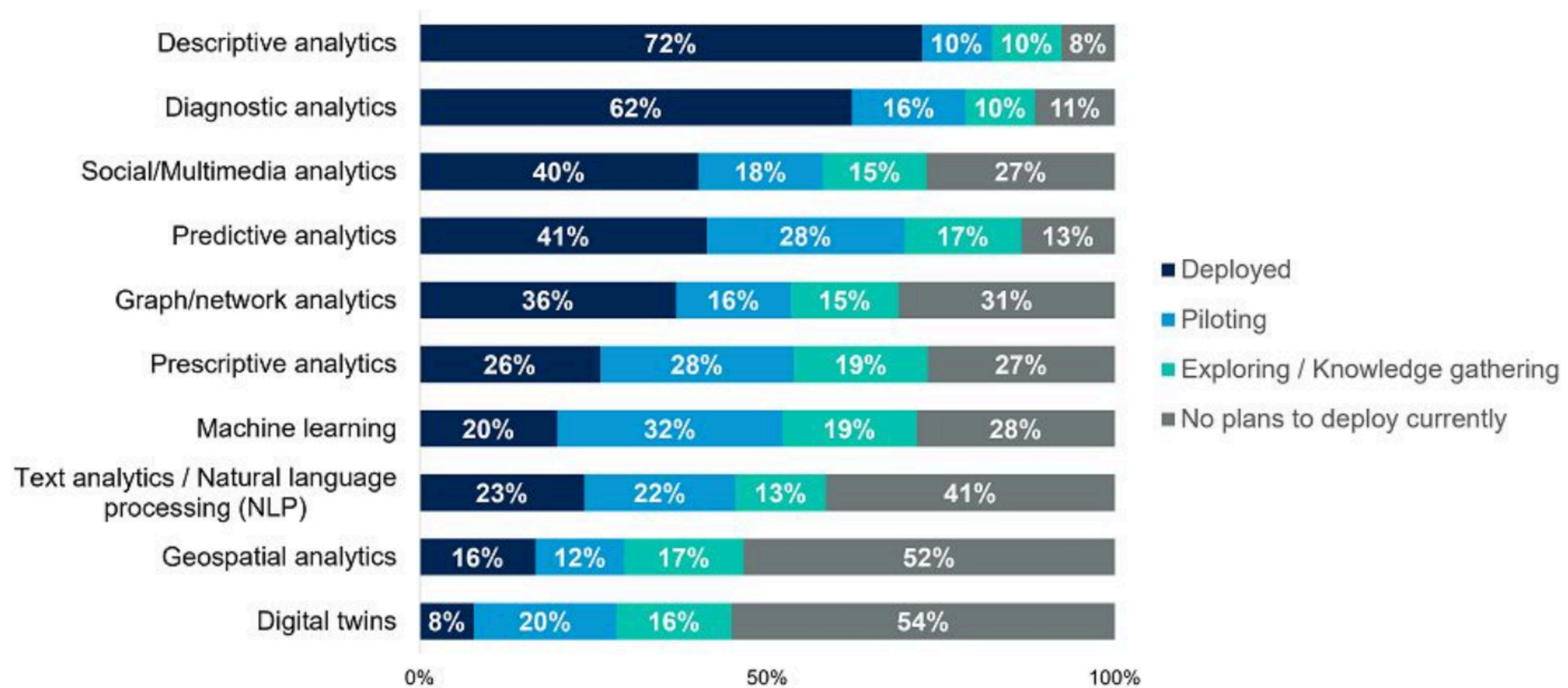# The hype will subside, but the impact will grow.

Gartner, 2023

85 M

Estimated jobs replaced by AI by 2025   World Economic Forum, 2023

79%

Analytics, AI, & automation will be critical to success over next 2 yrs. Gartner, 2023

Descriptive analytics: Deployed 72%, Piloting 10%, Exploring / Knowledge gathering 10%, No plans to deploy currently 8%
Diagnostic analytics: Deployed 62%, Piloting 16%, Exploring / Knowledge gathering 10%, No plans to deploy currently 11%
Social/Multimedia analytics: Deployed 40%, Piloting 18%, Exploring / Knowledge gathering 15%, No plans to deploy currently 27%
Predictive analytics: Deployed 41%, Piloting 28%, Exploring / Knowledge gathering 17%, No plans to deploy currently 13%
Graph/network analytics: Deployed 36%, Piloting 16%, Exploring / Knowledge gathering 15%, No plans to deploy currently 31%
Prescriptive analytics: Deployed 26%, Piloting 28%, Exploring / Knowledge gathering 19%, No plans to deploy currently 27%
Machine learning: Deployed 20%, Piloting 32%, Exploring / Knowledge gathering 19%, No plans to deploy currently 28%
Text analytics / Natural language processing (NLP): Deployed 23%, Piloting 22%, Exploring / Knowledge gathering 13%, No plans to deploy currently 41%
Geospatial analytics: Deployed 16%, Piloting 12%, Exploring / Knowledge gathering 17%, No plans to deploy currently 52%
Digital twins: Deployed 8%, Piloting 20%, Exploring / Knowledge gathering 16%, No plans to deploy currently 54%

Legend:
- Deployed
- Piloting
- Exploring / Knowledge gathering
- No plans to deploy currently

n = 209, excludes "discontinued or planning to discontinue use"
Q: Please review the below list of analytics techniques and indicate if your Corporate Strategy Function is currently using or planning to use them? Please select one answer. Source: Gartner 2023 Strategy Leader Technology Survey
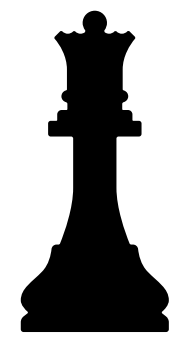Note: Numbers may not add to 100% due to omission of a "discontinued or planning to discontinue use" option.
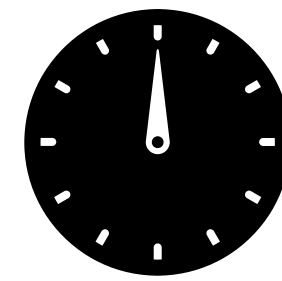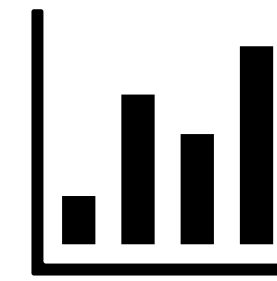
Gartner.

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AI Value Proposition

Technology Attributes
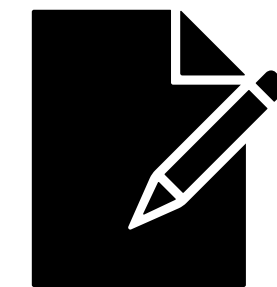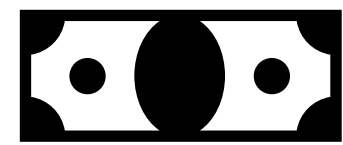
Relative advantage   **Competibility**   **Trialability**   **Observability**   **Complexity**
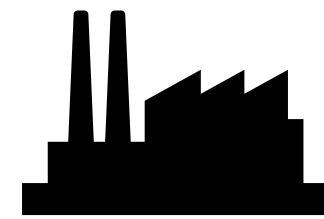
Generative AI Business Opportunities
(example)

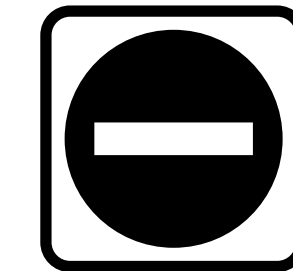**Revenue**

Cost & Productivity

Risk opportunities

⚠️

**Stranded Asset =
Employee incompatible with up/reskilling**

Provide learning
- even before we attempt to get people to our organizational front door.

AI will not steal your job.
The person who knows how to use AI will.

Technology can provide "immense scope for solving many current problems – if the right value choices can be made" Trist, 1981

Frustration flies in the face of innovation.

In the AI Revolution, WHY will be the catalyst.

Curious will win.

At last: a business case for hiring POTENTIAL.

AI Will Create 97 Million Jobs, But Workers Don't Have The Skills Required (Yet)

It's time to upskill workers; a World Economic Forum report states that 97 million new jobs will be created by 2025 due to AI.

by **Emma Ascott** — November 19, 2021 in **Tech** Reading Time: 6 mins read

A A

Photo by ThisisEngineering RAEng on Unsplash

Half of employers believe that AI will create more jobs, while another quarter believe AI will cost jobs. Investopedia.com, 2022

Green energy, technology, and supply chain jobs are driving the changes in the workforce via the acceleration of AI.
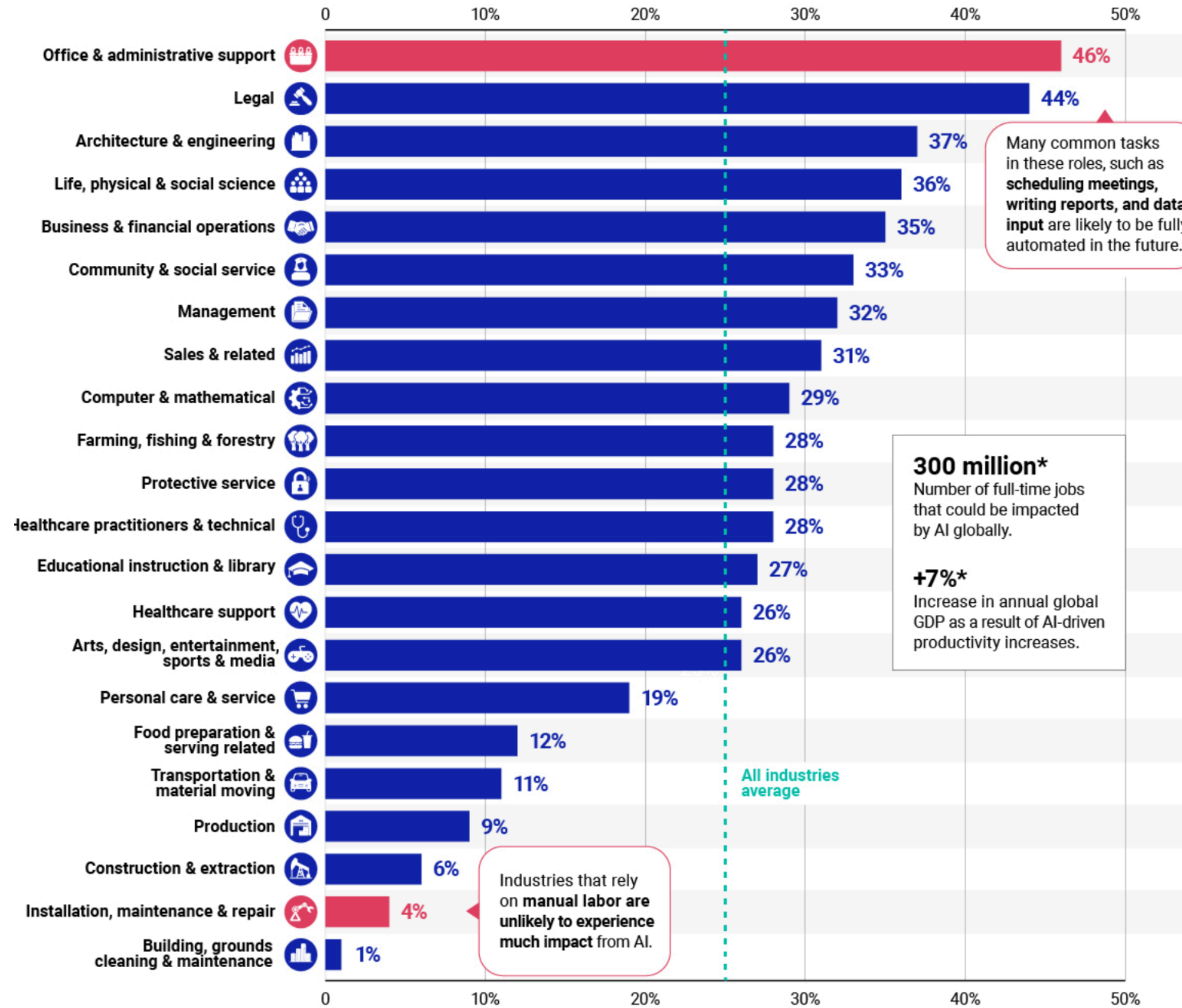
AI Created Jobs

Prompt Engineer
Data detectives
Robotics engineers
Machine managers
AI trainer
AI auditor
AI ethicists/ethics experts
Biotech AI engineer
Data labeling propfessionals
AI hardware
Digital detox therapist
AI personality designer

AI Threatened jobs

Accountants*
Content Moderators
Legal Assistants
Proofreaders/translators
Traders (financial)
Transcribers
Graphic Designers*
Receptionists
Customer service
Soldiers/security & military personnel
Writers/editors*
Salespersons/Retail services
Taxi & truck drivers, courier services

Estimated Share of Employment Exposed to AI Automation

Occupation	Share
Office & administrative support	46%
Legal	44%
Architecture & engineering	37%
Life, physical & social science	36%
Business & financial operations	35%
Community & social service	33%
Management	32%
Sales & related	31%
Computer & mathematical	29%
Farming, fishing & forestry	28%
Protective service	28%
Healthcare practitioners & technical	28%
Educational instruction & library	27%
Healthcare support	26%
Arts, design, entertainment, sports & media	26%
Personal care & service	19%
Food preparation & serving related	12%
Transportation & material moving	11%
Production	9%
Construction & extraction	6%
Installation, maintenance & repair	4%
Building, grounds cleaning & maintenance	1%

Many common tasks in these roles, such as **scheduling meetings, writing reports, and data input** are likely to be fully automated in the future.

300 million*
Number of full-time jobs that could be impacted by AI globally.

+7%*
Increase in annual global GDP as a result of AI-driven productivity increases.

All industries average

Industries that rely on **manual labor are unlikely to experience much impact** from AI.

Source: Goldman Sachs Global Investment Research (March 2023)
* Over a 10-year period starting from a point when roughly half of all businesses have adopted generative AI.

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Industry	Estimated Share of U.S. Employment Exposed to AI (%)
Office and administrative support	46%
Legal	44%
Architecture and engineering	37%
Life, physical, and social science	36%
Business and financial operations	35%
Community and social service	33%
Management	32%
Sales and related	31%
Computer and Mathematical	29%
Farming, fishing, and forestry	28%

https://www.visualcapitalist.com/sp/ranking-industries-by-their-potential-for-ai-automation/

What AI can't replace

Social or emotional intelligence
Human creativity
Critical Thinking
Conflict Management
Reasoning tasks
Non-pre-fed tasks
Operate w/o maintenance & supervision
Sense of safety, privacy, or ethics
Sensemaking
Emotions (emotional AI)

Higher Ed Degrees

Stanford
Massachusetts Institute of Technology
Carnegie Mellon
University of California, Berkeley
University of Washington
Georgia Institute of Technology
University of Illinois Urbana-Champaign
Cornell

Specific Skills for AI

Statistics
Programming
Mathematics
Data Science
Machine Learning
Natural Language Programming
Computer Vision
Ethics
Strong Communication Skills* (tech/non-tech)
Problem Solving Skills

TRANSFERABLE SKILLS
INTUITION
RISK TAKING
ENTREPRENEURIAL THINKING
LEARNING/UNLEARNING

SWOT - Academia

Strengths

- Research on emerging technology, organizational behavior, human-machine interaction (access; ability to scientifically study change, forecast)
- Equipped to handle complexity, trialibilaity, and observability by design
- Basic and applied research can work together easily in a lab environment - BY DESIGN
- Set baselines for responsible AI through education and study of applied ethics and philosophy

Weaknesses

- Rigid thinking based on yesterday
- Bias
- Time and resources anchored in revising/testing/redesigning courses fast enough to support Industry
- Being out of touch with the field - may miss exploiting relative advantage
- Need to overhaul K-12/University teaching and research (reluctant faculty, same fears as society)
- Change management including technical training reluctance to adopt for non-technical personnel
- Lack of focus on technical and business writing vs. creative and descriptive writing largely taught in K-12 and universities in excess
- Accreditation restrictions on changing curriculum/curricula, lack of agility

Opportunities

- Reduce bias
- Communication to breakdown silos around technical/non-technical team members
- Wider dispersement of systems thinking into unrelated disciplines (e.g., Humanities)
- Focus programs on multi-competency roles and ways of thinking
- Shorten/overhaul requirements to add/change/drop courses, certification programs, and degrees
- Augment roles of traditional faculty with requirement for periodic field work
- Encourage greater creativity organizationally and REWARD IT (Academic Freedom)
- Proactively steward appropriate fences and controls as well as open opportunities for collaboration thinking big societal affect/effect which can inform policy
- Can teach operationalization early and encourage many questions for far wider exposure to logic in all curricula

Threats

- Rigid thinking
- Bureaucracy
- Bias - both human and machine
- Traditional academic program structures unable or unwilling to prune excess [bloat] from degree programs for all types of political reasons
- Dehumanization, depersonalization, derealization
- Pace of change
- Failure of imagination

SWOT - Organizations

Strengths

- Ability to respond to emerging technologies
- Change management
- Robust knowledge base widely shared/accessible
- Resources dedicated to "edge watching"
- AI will handle more and more transactional work
- Ability to extract real-time information with more powerful queries
- Break down concept silos (e.g., training can capture real-time demands to validate or revise methods
- Likely to exploit relative advantage
- Less restrictions on creativity
- HR is among the fastest adopting group in organizations

Weaknesses

- Rigid thinking based on yesterday
- Heavy unlearning/learning
- Willingness to adopt new tools and discard others
- Time/resources needed for up/reskilling
- Still need human oversight
- Training required to build new ways of thinking
- Not having the skills to exploit AI (e.g., prompt engineering)
- K-12/University-bound thinking
- Not recognizing transferable skills
- Language models not read (e.g., chatbots for employees fraught with hallucinations or lack of clarity)
- Bias

Opportunities

- Reduce bias
- Accelerate self-paced learning and professional development
- Maintain a personal connection to talent despite high number of human-machine interactions setting target ratios
- Significant opportunities for polymathic and philomathic types
- Use case for hiring for potential
- Ability to define gaps, needs, and plan on a very impermanent basis
- WHY we do something vs. other choices becomes paramount
- Greater transparency, better communications, and a shorter lever for results
- Move to strategic vs. tactical (e.g., succession planning - skills predictions

Threats

- Cost of continuous development/redevelopment of skills matrices and training programs
- Loss of organizational memory and knowledge
- Challenge of shaping careers for the segment of workforce with more rudimentary skills and abilities to mitigate widening of SES gaps
- Potential for silos
- Potential for missed errors/judgments, compliance issues
- Bias - similar problems highlighted by EEO guidance, disparate impact analysis - four fifths rule
- Dehumanization, depersonalization, derealization
- Pace of change
- Failure of imagination

Radical Change in Education is
NOT OPTIONAL

Failure of Imagination
will be the biggest human challenge with regard to AI and Training.

Dehumanization
Derealization
Depersonalization

DisConnect.

Gaps between the haves and have-nots will WIDEN.

Our responsibility as technologists is to be good stewards of AI to minimize the deleterious effects on humanity.

Many thanks to:

GLOBAL
SCIENTIFIC GUILD
Where Wisdom Meets Science

□△○ | brick house blue

Interns:
Mr. Roman Zuppo
Mr. Andrew Makowski