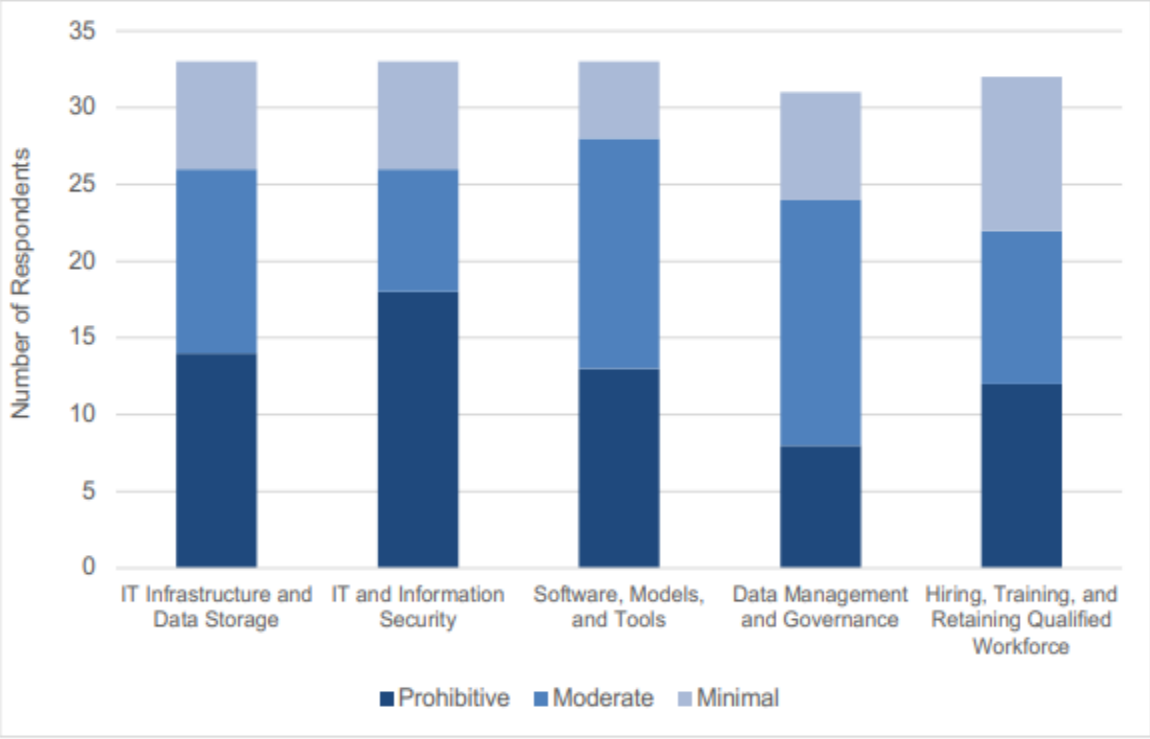
Impact of AI on Defense Acquisition

accenture

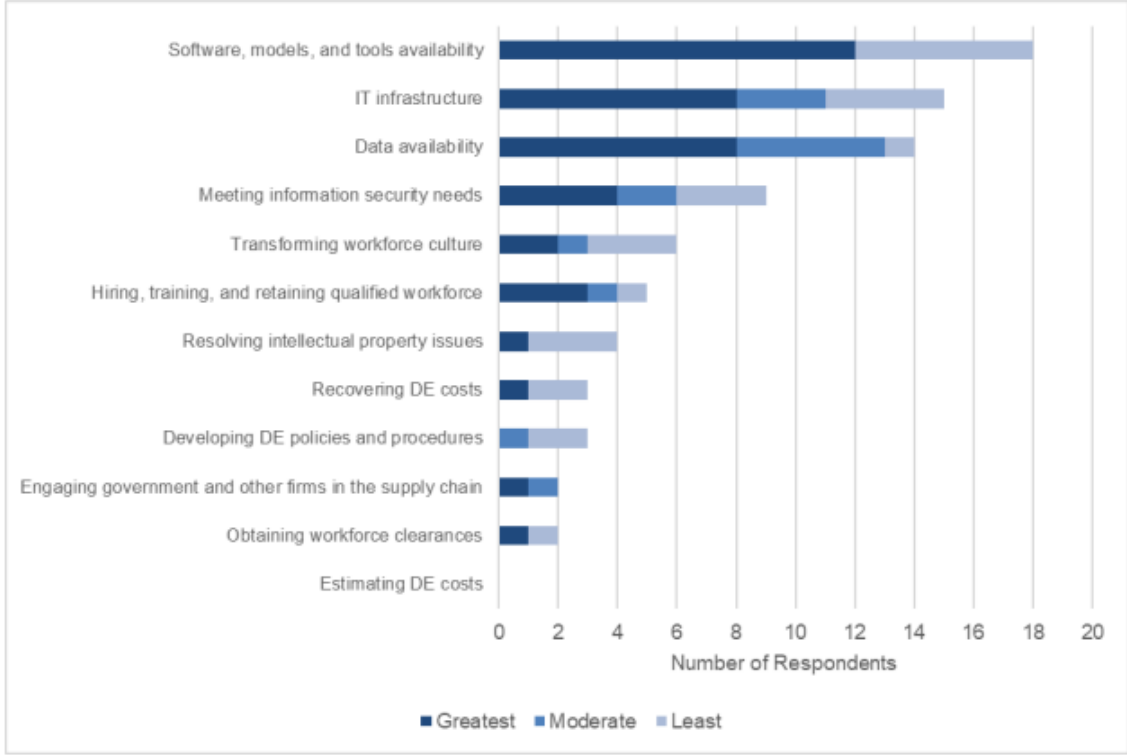
Defense Acquisition and Implementation

High Costs, Skill Gaps, Data Risks, and Immature Technologies

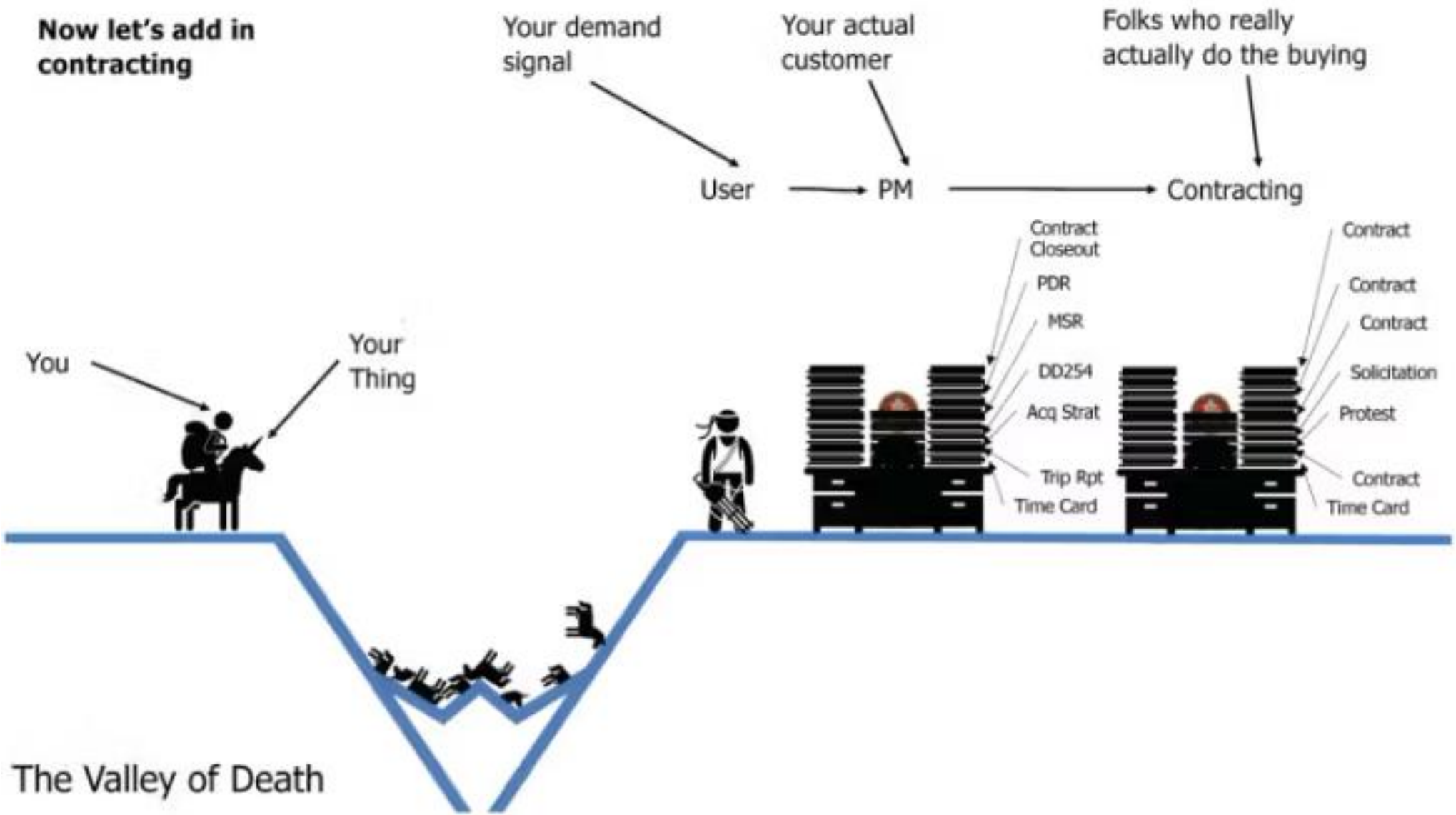
Cost of Implementing Digital Engineering



Greatest Challenges Faced by Industry



Source: [The Impact of Digital Engineering on Defense Acquisition and the Supply Chain: Insights from an Industry Survey | RAND]



Source: https://www.userogue.com/blog/how-to-sell-technology-to-the-government

Driver of High Cost in Defense Acquisition

Drivers of High Cost

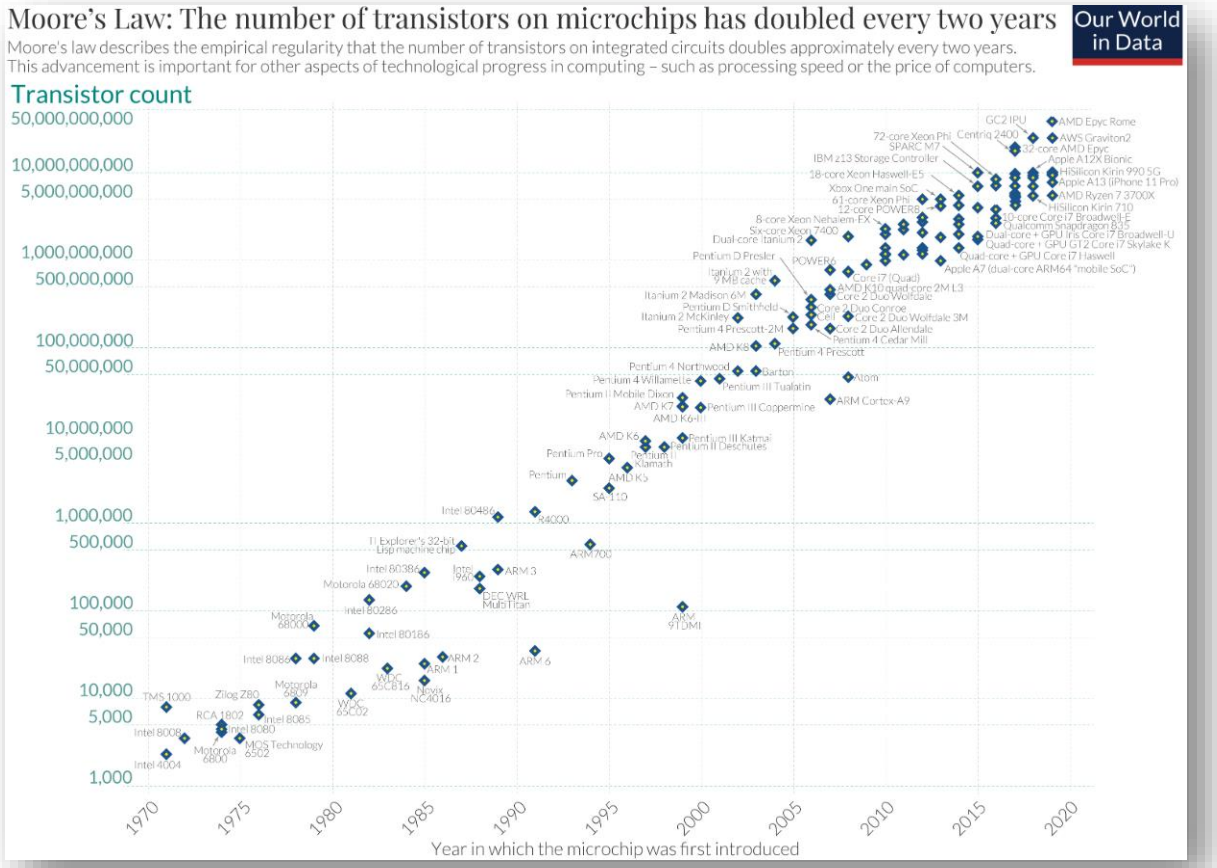
- Complex Procurement Processes
- Legacy Systems
- Mixed standards
- Interest in costs on debt
- Vendor Lock-In
- Security Requirements
- Barriers to entry
- Relatively closed labor pool

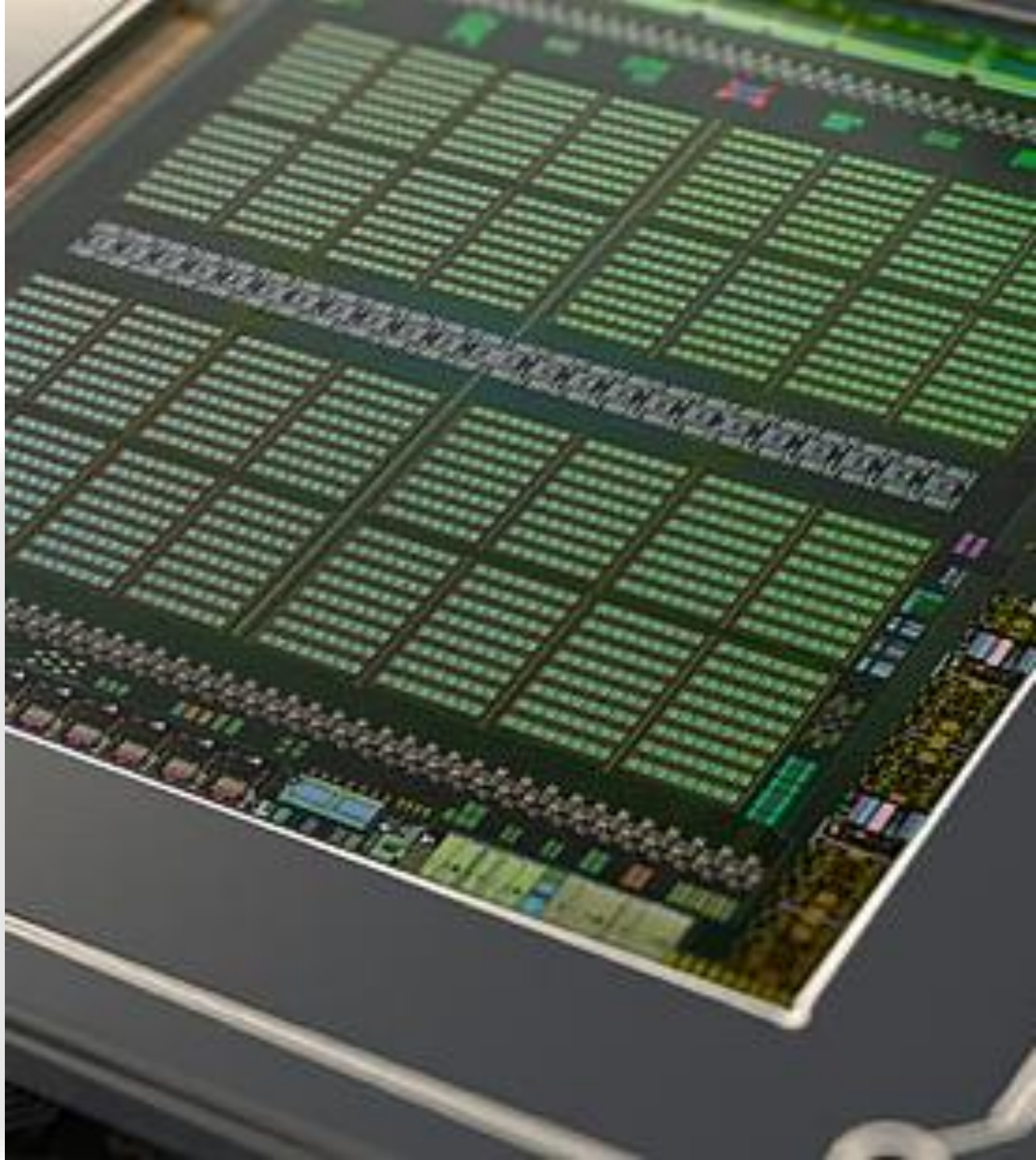
How AI and Automation Can Reduce Cost

- AI-Powered Automation
- Smart Contract Analysis
- Predictive Procurement
- Automated Compliance
- Proactive Threat Defense
- Continuous Security Monitoring

Advancement in Computing

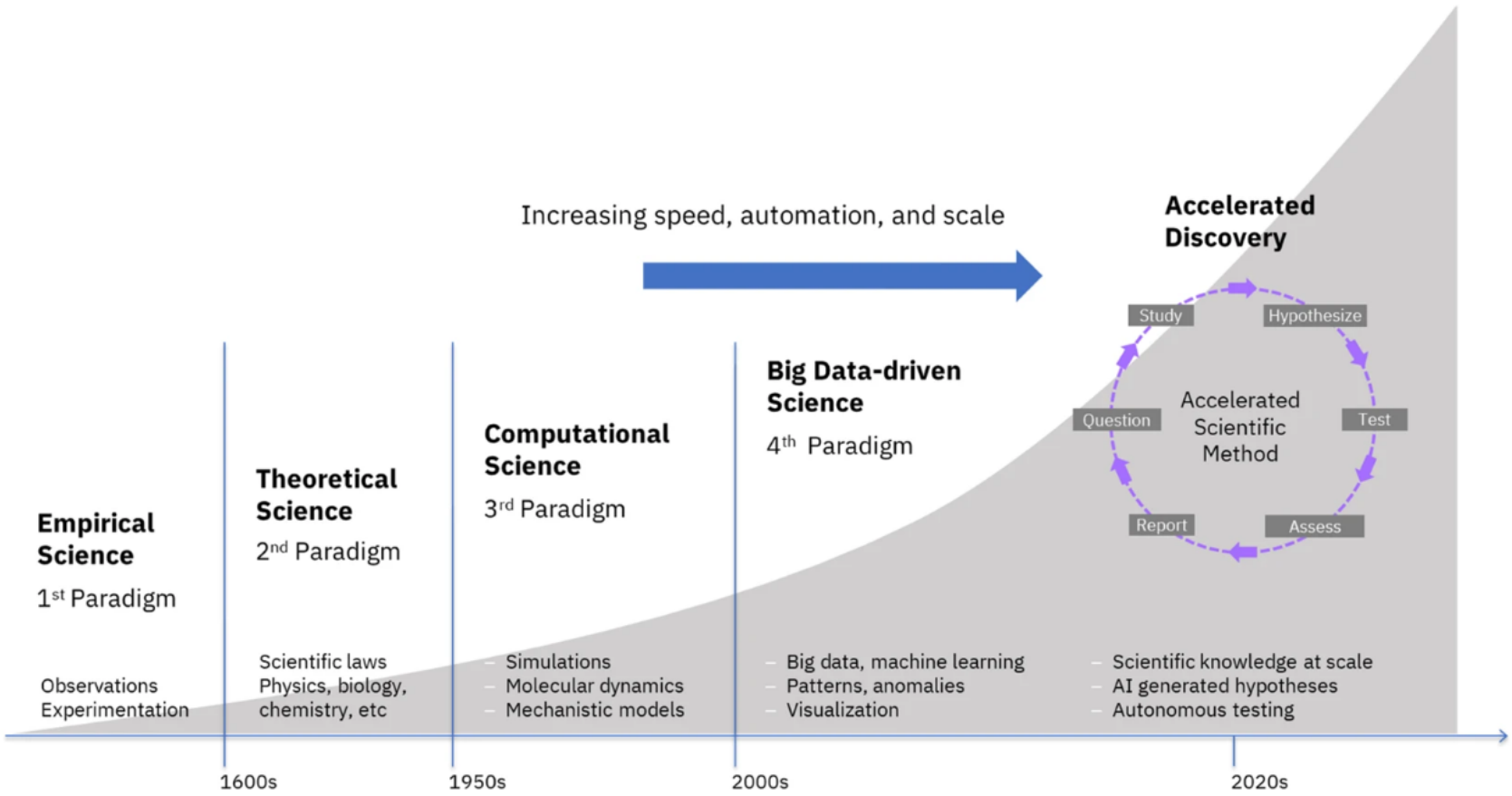
Moore's Law has led to smaller, more powerful, and less expensive computing





Advancement in Science, Automation and Insight

Moore's Law has led to smaller, more powerful, and less expensive computing



[Accelerating materials discovery using artificial intelligence, high performance computing and robotics | npj Computational Materials (nature.com)]

How did we get here?

Milestones in the journey to generative AI

Machine learning: Analysis and prediction phase

The first decade of the 2000s marked the rapid advance of various machine learning techniques that could analyze massive amounts of online data to draw conclusions – or "learn" – from the results. Since then, companies have viewed machine learning as an incredibly powerful field of AI for analyzing data, finding patterns, generating insights, making predictions and automating tasks at a pace and on a scale that was previously impossible.

Deep learning: Vision and speech phase

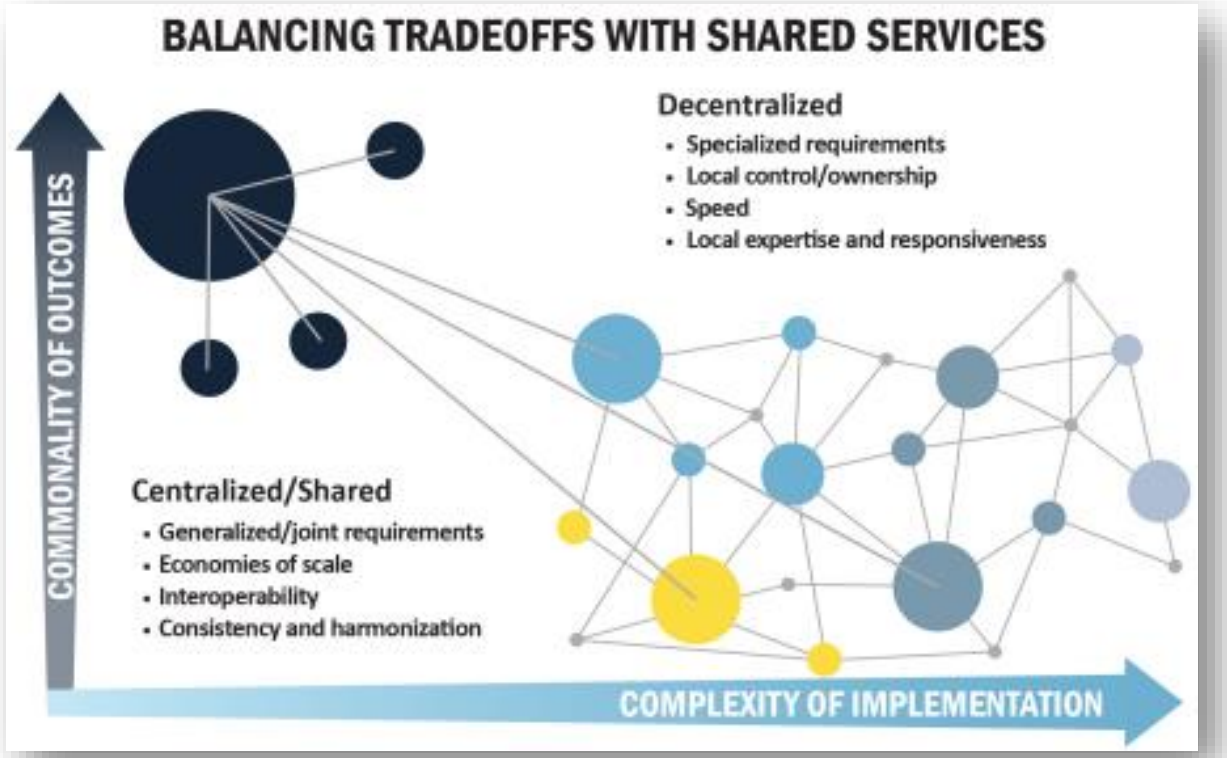
The 2010s produced advances in AI's perception capabilities in the field of machine learning called deep learning. Breakthroughs in deep learning enable the computer vision that search engines and self-driving cars use to classify and detect objects, as well as the voice recognition that allows popular AI speech assistants to respond to users in a natural way.

Generative AI: Enter the language-mastery phase

Building on exponential increases in the size and capabilities of deep learning models, the 2020s will be about language mastery. The GPT-4 language model, developed by OpenAI, marks the beginning of a new phase in the abilities of language-based AI applications. Models such as this will have far-reaching consequences for business, since language permeates everything an organization does day to day—its institutional knowledge, communication and processes.[2]

DoD Data, Analytics, and AI Strategy

FY25: Budget: $1.8 billion for AI and $1.4 billion for JADC2, and $17.2 billion for in S&T



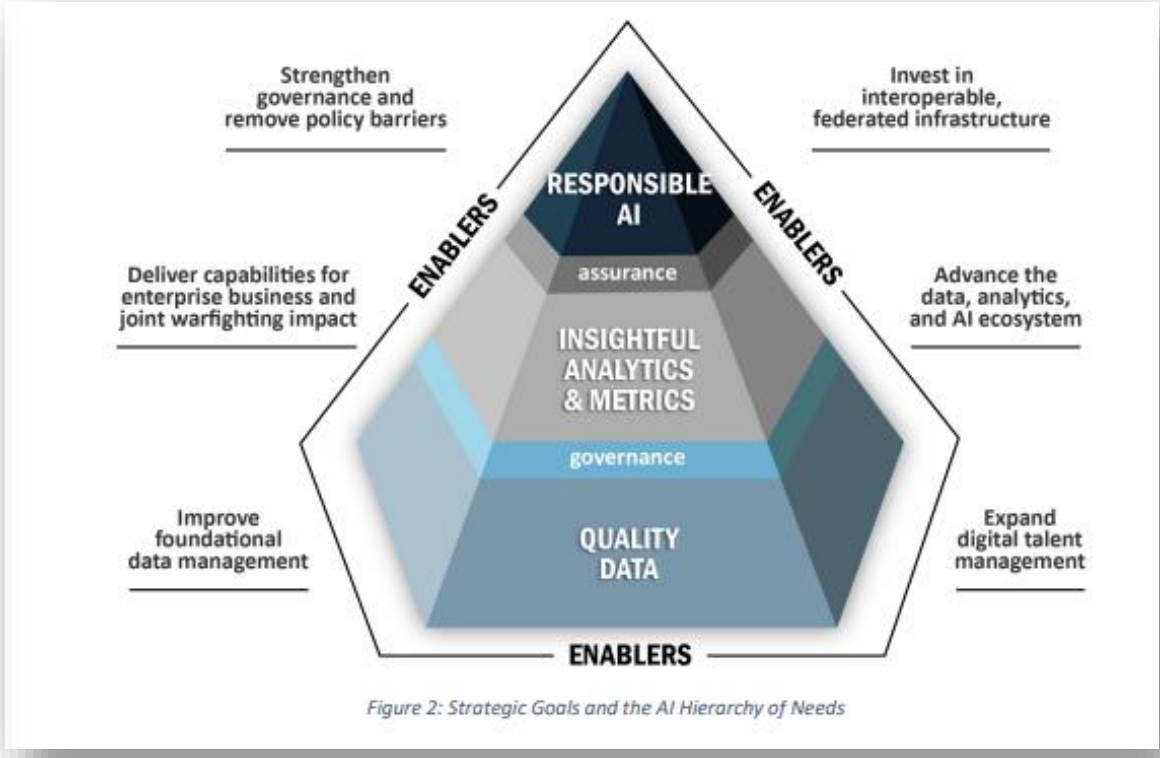


Figure 2: Strategic Goals and the AI Hierarchy of Needs

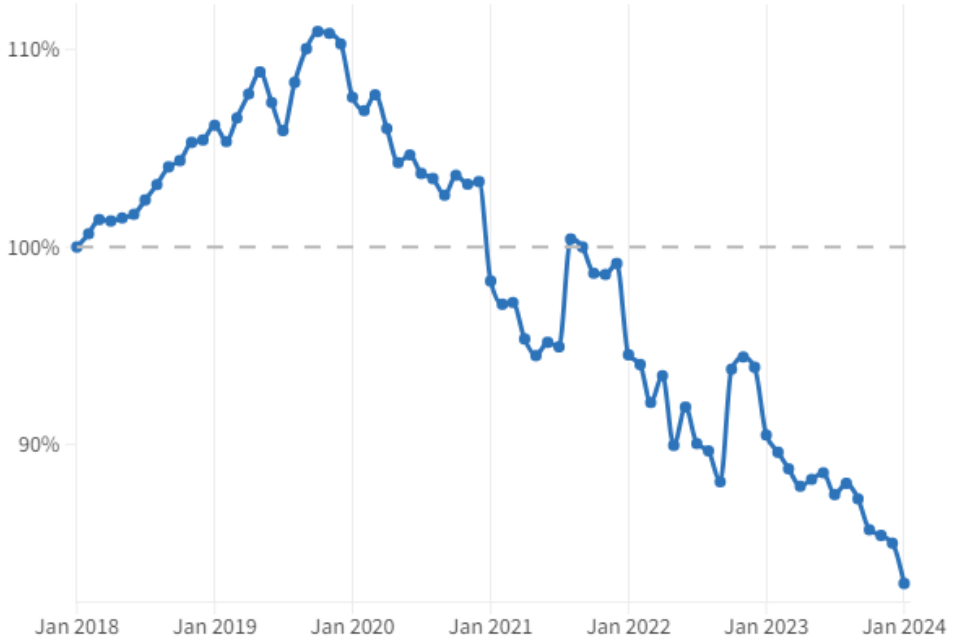
Source: 2023 Data, Analytics, and Artificial Intelligence Adoption Strategy (defense.gov)

Trends in U.S. Tech Labor

Declining Developer Employment, Increasing Developer Salaries

Software developer employment peaked in 2019 and has been declining since

U.S. software developer employment index (January 2018 = 100%)



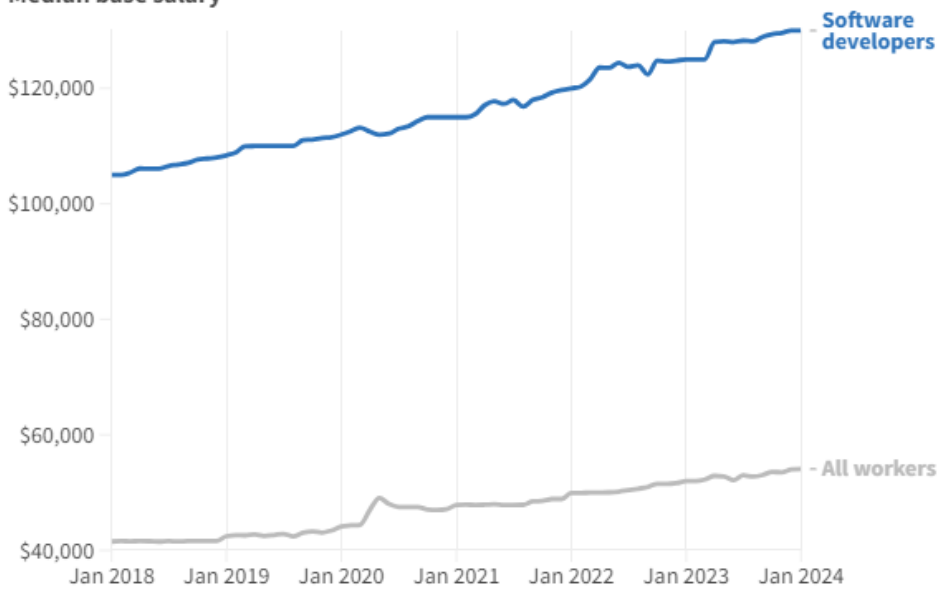
Source: ADP data

ADP Research INSTITUTE

Between 2018 and 2024, U.S. software developer base salaries increased by a larger dollar amount than average

But that's because their baseline salary was higher than average to start.

Median base salary



Source: ADP data

ADP Research INSTITUTE

What to Expect in Trump Administration

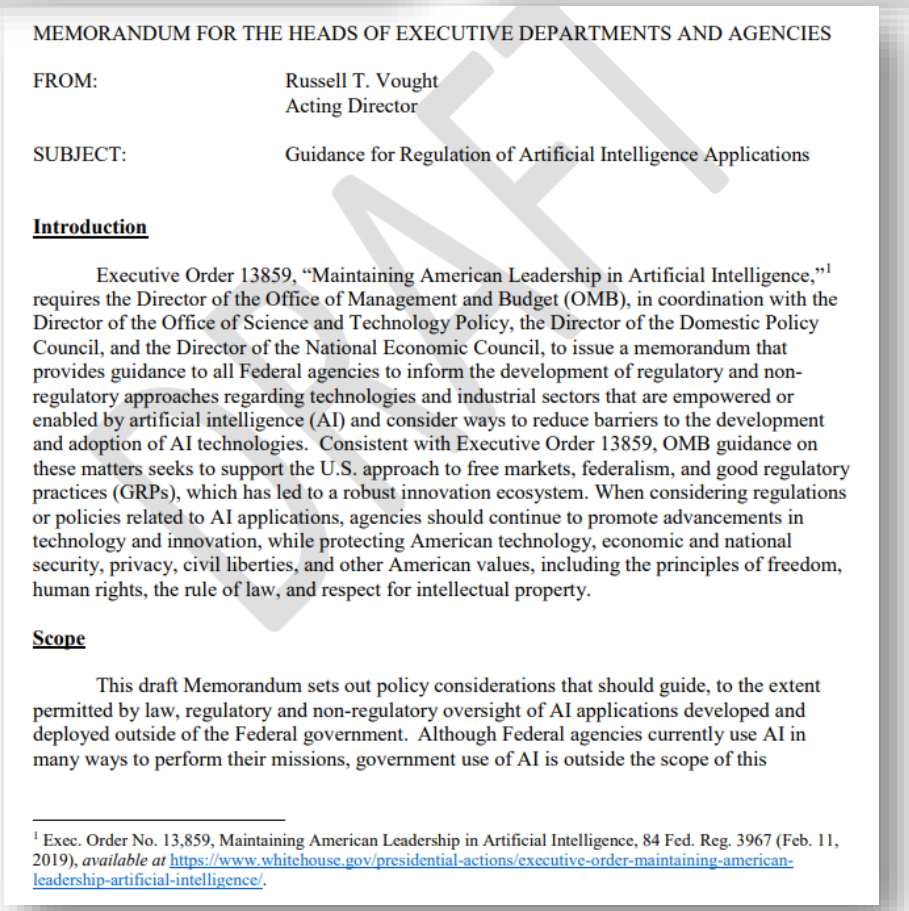
- Shifting Guardrails
- Rescinding of 2023 Biden AI EO
- Overlap with 2019 Trump EO
- Scaling Back Fairness Algorithm Focus
- NIST Framework May Continue
- AI Safety Institute Future Uncertain
- DPA Change: Sharing Safety Results
- Focus on PRC Competition


Executive Order on Promoting the Use of Trustworthy Artificial Intelligence in the Federal Government

INFRASTRUCTURE & TECHNOLOGY | Issued on: December 3, 2020


Executive Order on Maintaining American Leadership in Artificial Intelligence

INFRASTRUCTURE & TECHNOLOGY | Issued on: February 11, 2019



MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: Russell T. Vought
Acting Director

SUBJECT: Guidance for Regulation of Artificial Intelligence Applications

Introduction

Executive Order 13859, "Maintaining American Leadership in Artificial Intelligence,"[1] requires the Director of the Office of Management and Budget (OMB), in coordination with the Director of the Office of Science and Technology Policy, the Director of the Domestic Policy Council, and the Director of the National Economic Council, to issue a memorandum that provides guidance to all Federal agencies to inform the development of regulatory and non-regulatory approaches regarding technologies and industrial sectors that are empowered or enabled by artificial intelligence (AI) and consider ways to reduce barriers to the development and adoption of AI technologies. Consistent with Executive Order 13859, OMB guidance on these matters seeks to support the U.S. approach to free markets, federalism, and good regulatory practices (GRPs), which has led to a robust innovation ecosystem. When considering regulations or policies related to AI applications, agencies should continue to promote advancements in technology and innovation, while protecting American technology, economic and national security, privacy, civil liberties, and other American values, including the principles of freedom, human rights, the rule of law, and respect for intellectual property.

Scope

This draft Memorandum sets out policy considerations that should guide, to the extent permitted by law, regulatory and non-regulatory oversight of AI applications developed and deployed outside of the Federal government. Although Federal agencies currently use AI in many ways to perform their missions, government use of AI is outside the scope of this

[1] Exec. Order No. 13,859, Maintaining American Leadership in Artificial Intelligence, 84 Fed. Reg. 3967 (Feb. 11, 2019), *available at* https://www.whitehouse.gov/presidential-actions/executive-order-maintaining-american-leadership-artificial-intelligence/.

Accelerating Innovation for Defense and National Security