

# Running an Agile Government with Artificial Intelligence

Cognilytica: AI in Government Series

September 17, 2020

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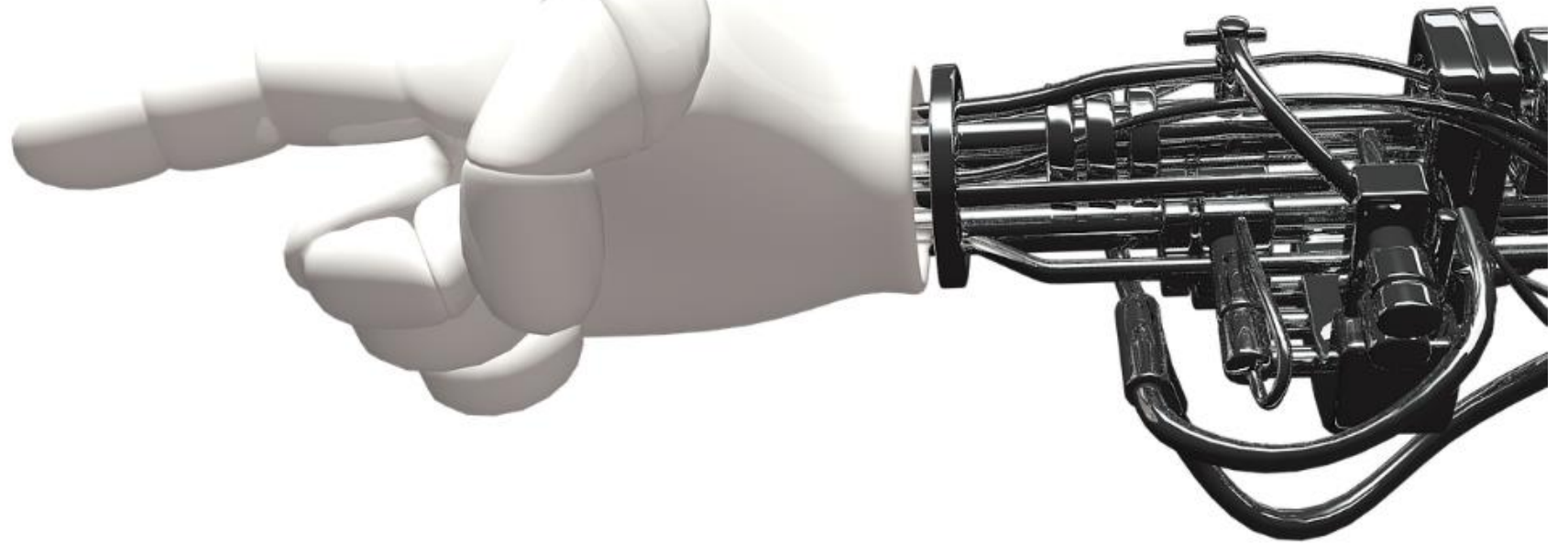
The logo for the U.S. Government Accountability Office (GAO), featuring the letters "GAO" in a bold, blue, serif font with a stylized blue swoosh or underline.

U.S. GOVERNMENT  
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With the federal workplace changing rapidly and the need for more efficient public service growing, running an agile government is critical.

AI is one technology that agencies are using in new, creative ways – revolutionizing how government employees work.



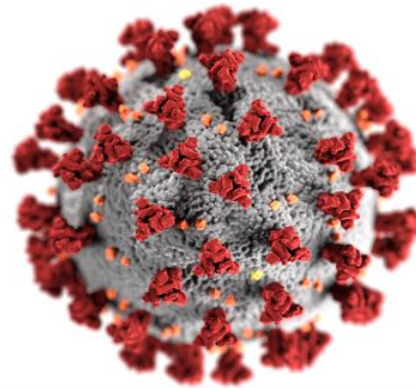
From developing early detection and therapies for COVID-19 patients to matching veterans with clinical trials and more, AI is helping federal employees work more productively and cost efficiently.



Improving science, public safety, and security:  
[National Oceanic and Atmospheric Administration](#)

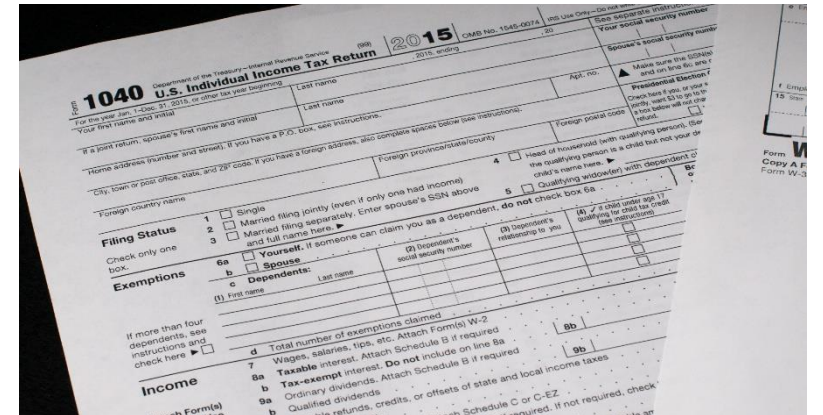


Harnessing the power of data for veterans:  
[Veterans Administration](#)



Source: Centers for Disease Control and Prevention, Alissa Eckert, Dan Higgins. | GAO-20-472SP

Creating new tools to fight COVID-19:  
[National Institutes of Health](#)

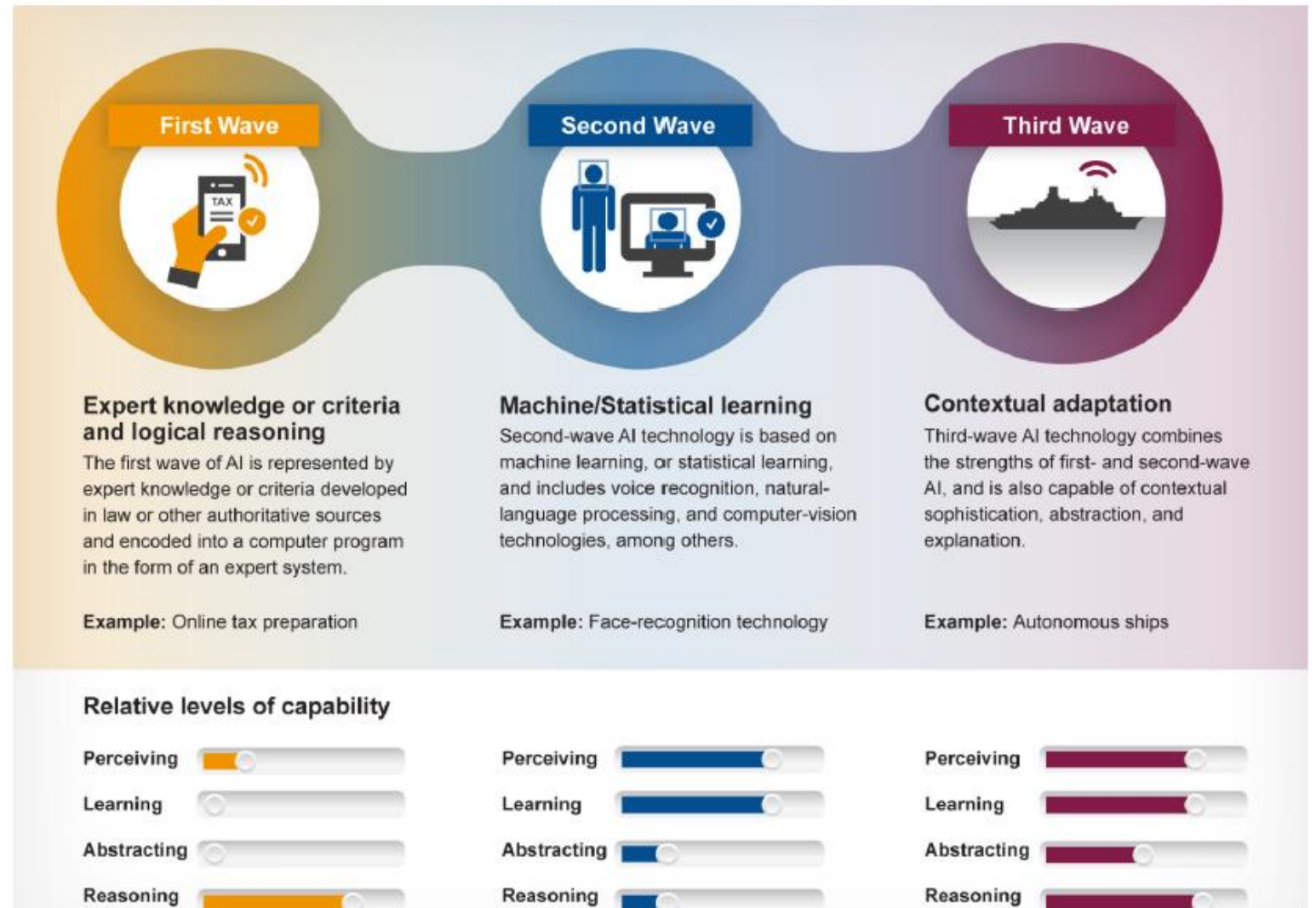


Modernizing the IRS to improve service to Americans:  
[Department of the Treasury](#)

I often refer to the 3-waves concept of AI development.

We've already moved from the first wave into the second wave which is more complicated and less transparent.

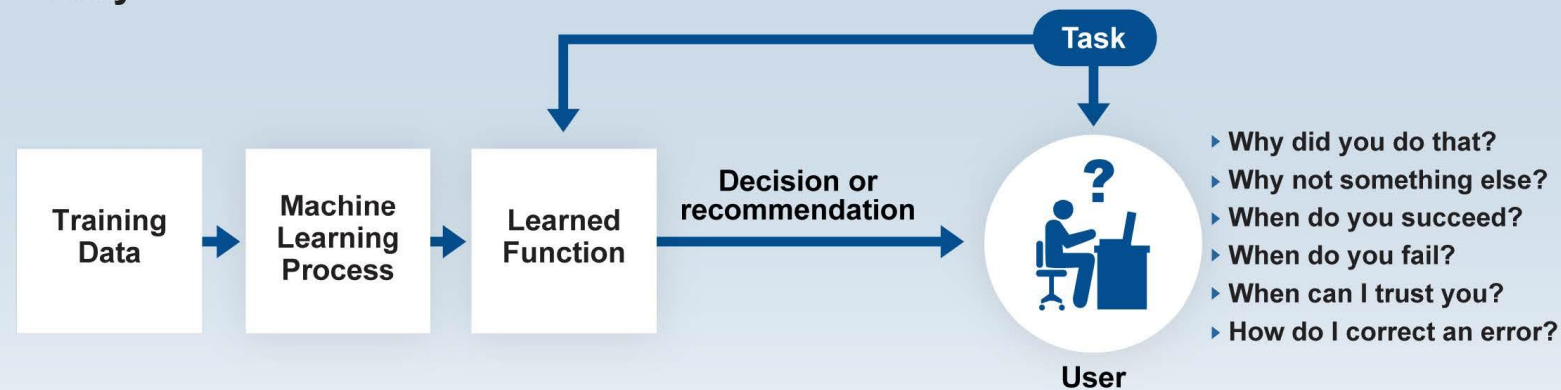
The third wave will require decades of R&D before we get there, if ever.



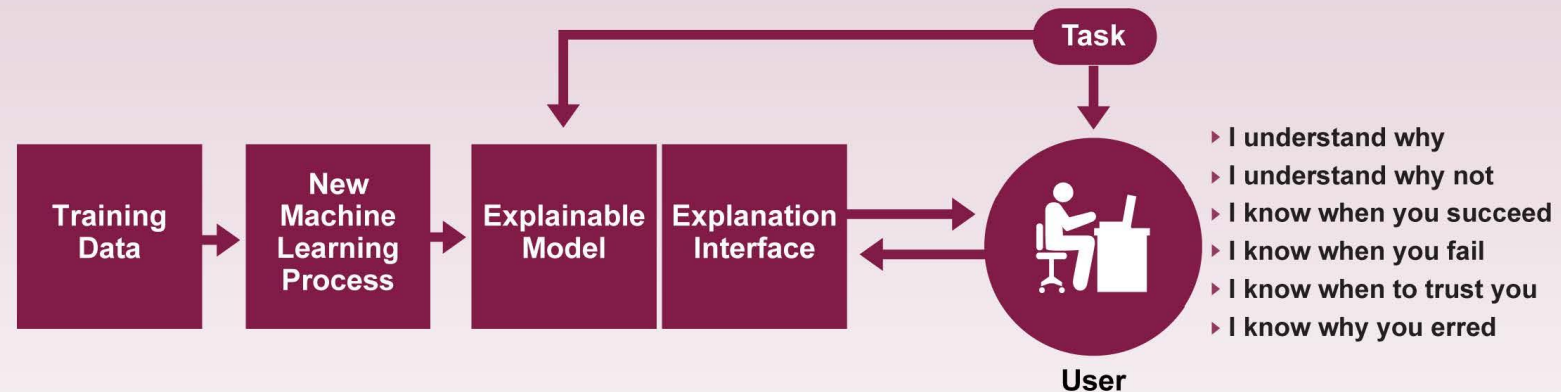
Today, AI is cutting edge, using machine learning to make countless decisions for us or make suggestions.

Tomorrow, explainable AI will allow us to understand the reasoning behind the decisions and actions taken by the technology.

### Today







### Explainable AI



Source: GAO and Defense Advanced Research Projects Agency (DARPA). | GAO-18-142SP

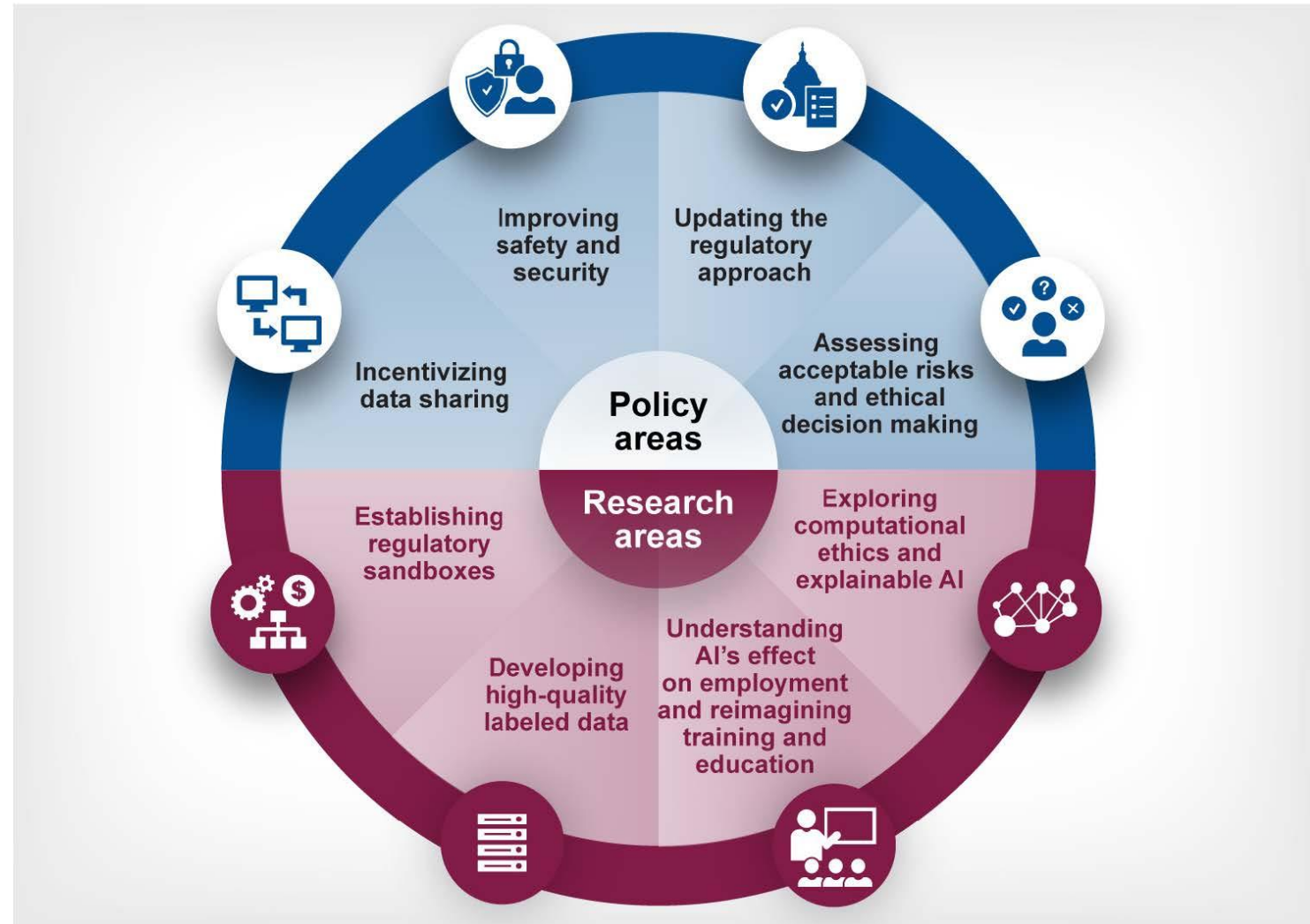
As with any disruptive technology, AI offers both opportunities and challenges.

For innovation to move forward strategically in the midst of change, our society must learn to adapt and balance opportunities with challenges.

		Selected Questions
	<b>Cybersecurity</b> AI applications face threats from cybersecurity attacks, but AI also may be used as a tool for detecting and defending against attacks.	<ul style="list-style-type: none"><li>▶ How can autonomous systems be made secure, without stifling innovation?</li><li>▶ How useful is a risk-based approach to determining if machine-learning algorithms adhere to legal requirements or ethical norms?</li></ul>
	<b>Automated Vehicles</b> Automated vehicles hold promise for increasing driving safety and providing enhanced mobility, but pose challenges for assuring increased safety.	<ul style="list-style-type: none"><li>▶ What is the appropriate regulatory framework for automated vehicle safety assurance?</li><li>▶ What are the roles of federal, state, and local governments in infrastructure adaptation and addressing issues of liability and enforcement?</li></ul>
	<b>Criminal Justice</b> The use of AI in criminal justice may improve the allocation of law enforcement resources and has the potential to reduce crime and jail populations, but also raises concerns about privacy and civil rights violations.	<ul style="list-style-type: none"><li>▶ What are the options for assessing accuracy and the potential for bias in AI data and algorithms?</li><li>▶ What are solutions for safeguarding privacy in the collection and use of personal information by AI systems?</li></ul>
	<b>Financial Services</b> The use of AI in financial services could improve client services and enhance surveillance monitoring, but also poses challenges to ensuring fair lending, attracting and retaining staff with requisite skills, and maintaining hardware and software.	<ul style="list-style-type: none"><li>▶ What are the mechanisms to address ethical considerations, tradeoffs, and protections?</li><li>▶ How can regulatory sandboxes be used to test new AI products, services, and business models?</li></ul>

Source: GAO Forum on Artificial Intelligence. | GAO-18-142SP

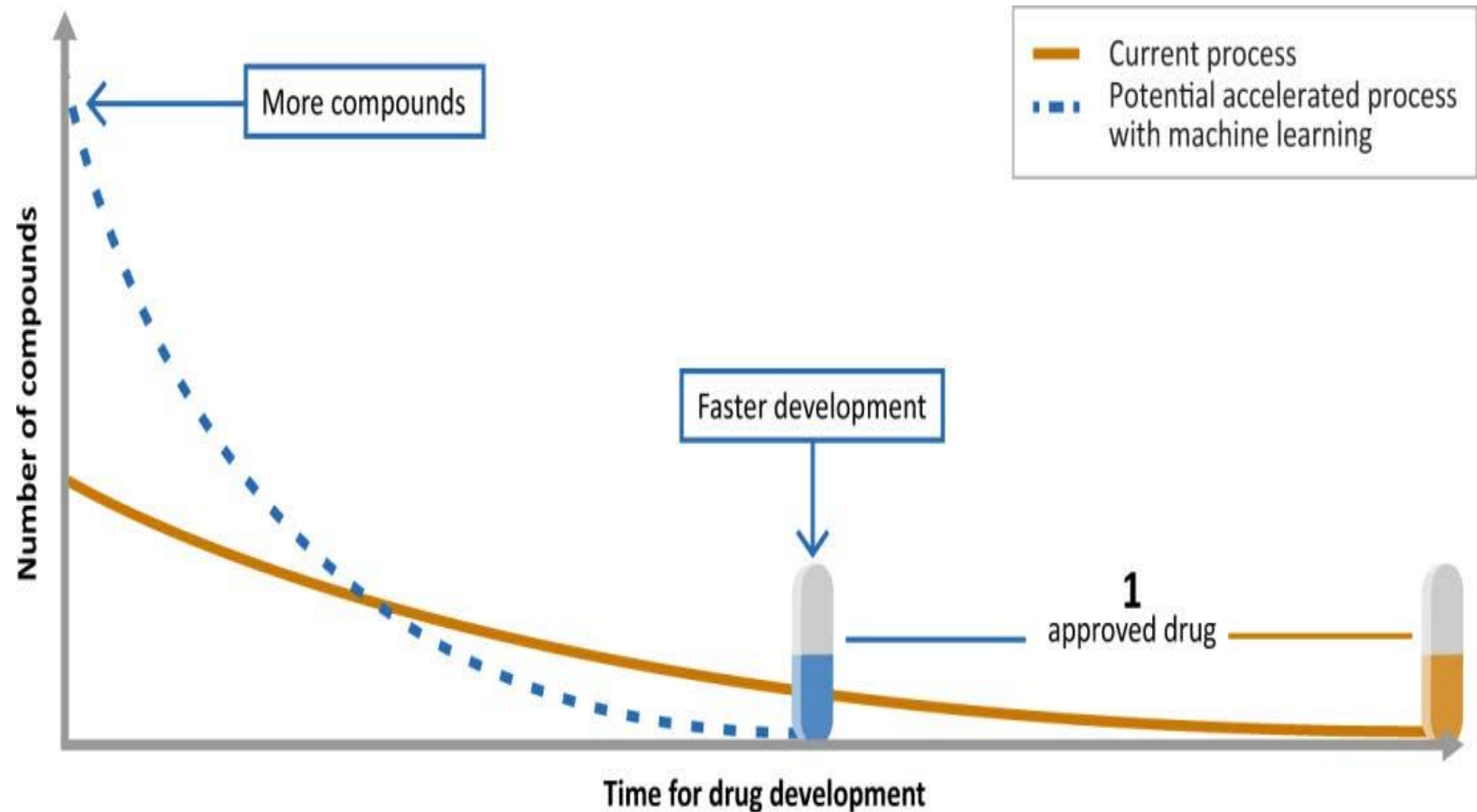
In considering the policy and research implications of AI's use in 4 areas with the potential to significantly affect daily life, we identified areas where changes in policy and research may be needed.



Source: GAO Forum on Artificial Intelligence. | GAO-18-644T

Using AI in the drug development process could decrease the time and cost required to bring new drugs to market.

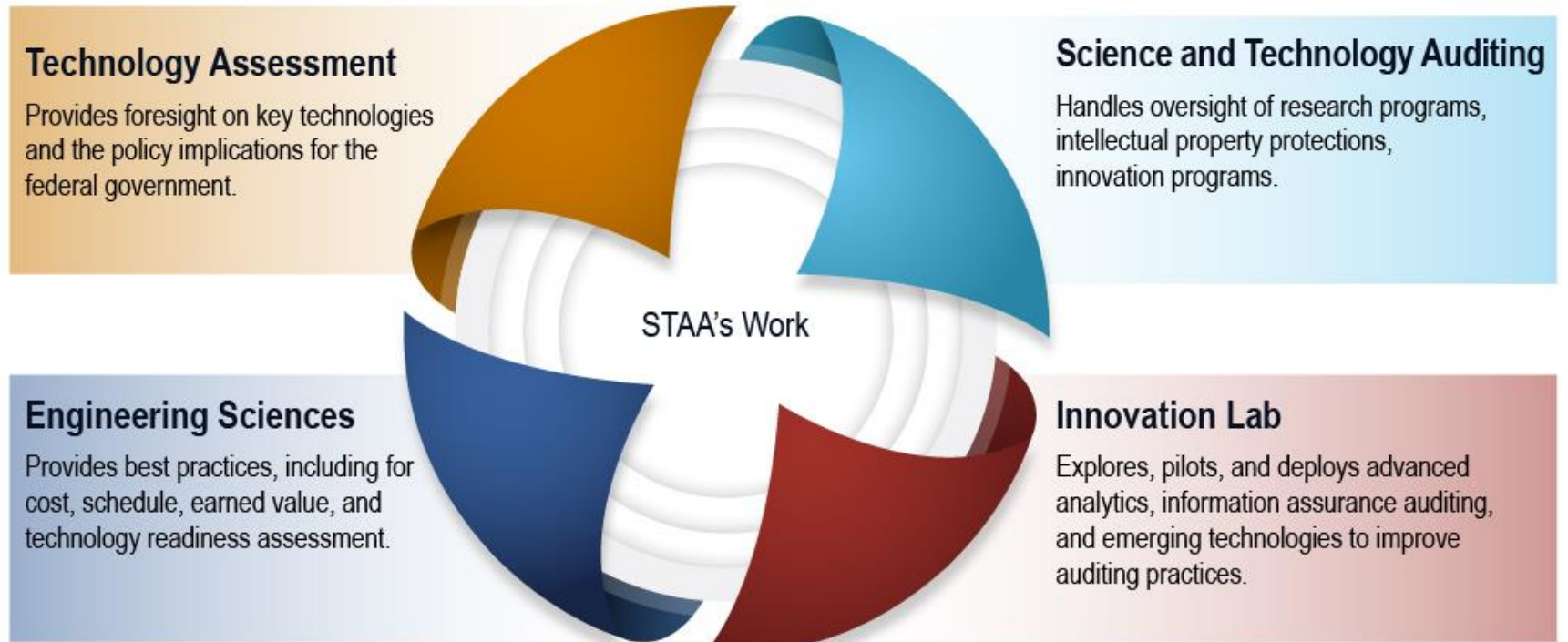
These improvements could save lives and allow researchers to invest more resources in areas such as rare diseases.



Source: GAO. | GAO-20-215SP



Today, STAA provides Congress with critical foresight, oversight, and insight of science and technology issues in order to ensure continued American security, innovation, and competitiveness in a rapidly changing world.

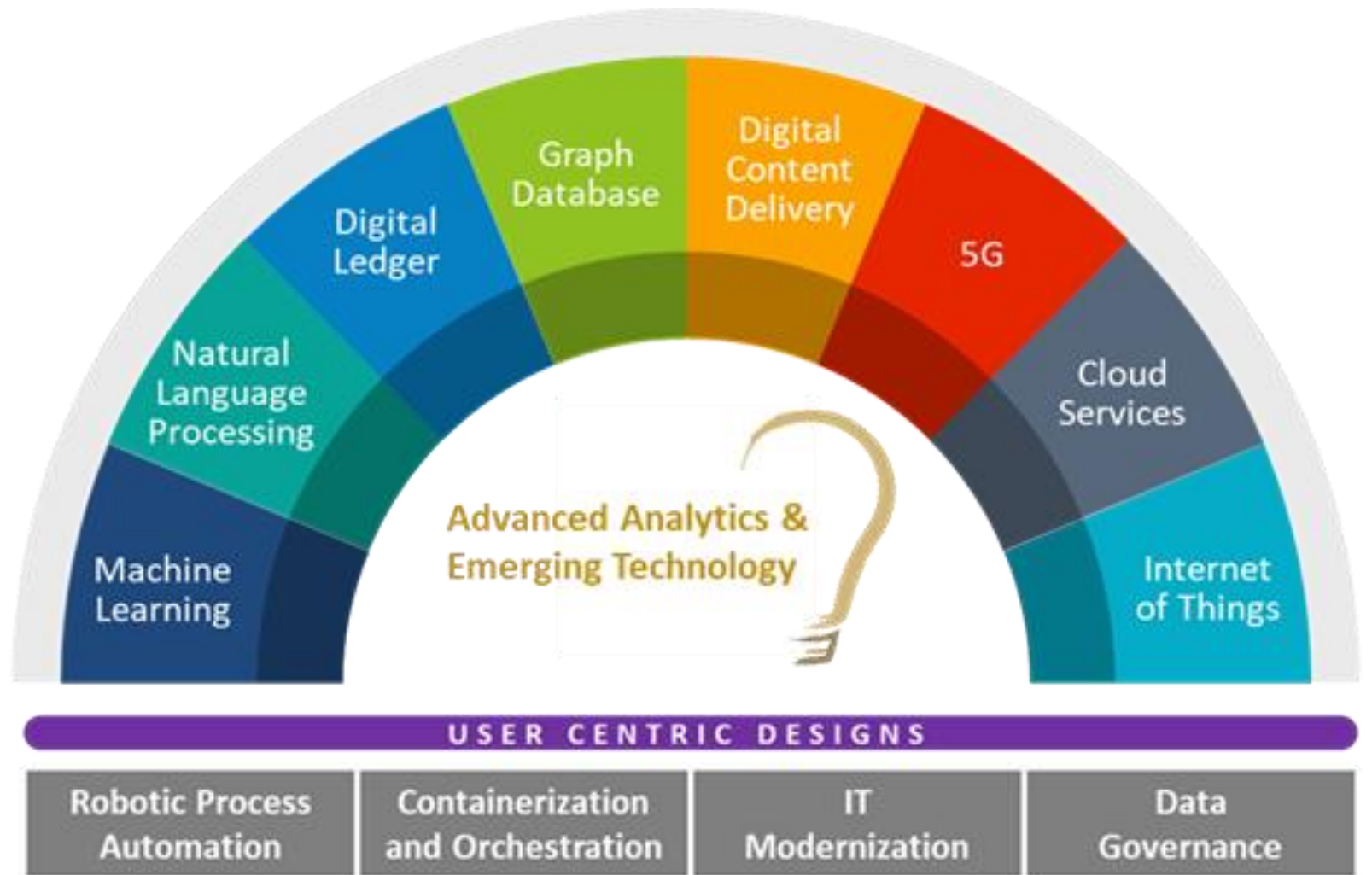


We work hard to make sure we're collaborating with a range of networks so that science and technology informs public policy discussions and improves the public policy debate.



The Innovation Lab is our most cutting-edge endeavor.

The Innovation Lab focuses on emerging technologies such as artificial intelligence, digital ledgers, 5G technologies, and quantum computing.



With accountability institutions increasingly called upon to provide AI oversight, GAO recently hosted experts from across the public and private sectors on creation of a first-of-its-kind framework for accountability and transparency in AI.



GAO predicts over a trillion dollars of improper payments over the next decade, unless we learn better prevention techniques.



Imagine a future where we use AI to accurately predict improper payments and prevent the payments before they are disbursed.

If AI were used in every federal agency, the government could save billions and improve public service in ways we can't even yet imagine.

