# Introduction

Federal IT managers know **it's all about the data**. Alongside their counterparts in the private sector, agencies are working to improve their data utilization and break free from the bottlenecks that once held them back.

Many have started optimizing their data through automation, big data analytics, deep learning, and – for some – even artificial intelligence (AI). While they still face challenges, agencies are making progress. And **AI is the next frontier**.

AI has the ability to transform the way Feds approach tasks from data entry to cybersecurity, and it stands to revolutionize citizen service and mission success. But **where do agencies stand** with AI today? Are they taking the right steps now to set themselves up for future AI success?

MeriTalk surveyed 150 Federal IT managers to answer these questions and further explore **The Federal AI Journey**.
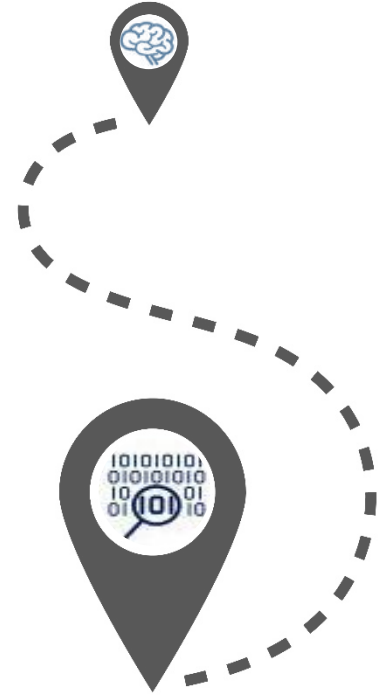
Executive Summary

- Data is a top priority for Federal agencies, but they still face many roadblocks:
  - **87%** of Federal IT managers say data is key to delivering better outcomes, and **80%** report the ability to draw intelligence from data ranks as one of their agency's top priorities
  - But, almost all say they are facing data challenges – most commonly security (**61%**), speed of access (**35%**), and quality/consistency issues (**35%**). **Seventy-three** percent say their challenge is not just harnessing and securing the data, but also analyzing and interpreting it

- Artificial Intelligence (AI) offers a superhighway:
  - **77%** of Feds say AI will be a game changer in the way government thinks about and processes data
  - **48%** say AI is a part of their agency's technology roadmap, and another **37%** say they are working to add it
  - Speed of adoption, however, varies by agency type – **83%** of DoD managers report taking action on AI (preparing a business case, implementing it, or benefiting from a pilot program) vs. just **47%** of those from civilian agencies

- Next-gen technology will pave the way:
  - **80%** of Feds say success in big data analytics, automation, and deep learning will lead to more robust AI adoption
  - While not all agencies are using these technologies today, those who are report improvements in operational efficiency (**50%**), cybersecurity (**39%**), and strategic decision-making (**35%**)

Data Drives Government

- Data is a top priority for Federal agencies

95% of Federal IT managers either already have or are working on a comprehensive data strategy

87% say data is key to delivering better outcomes,

and

80% say the ability to draw intelligence from data ranks as one of their agency's top priorities

Take away: Destination Clear

But, Insight Still Out of Reach

- Despite data efforts, drawing intelligence from data remains a challenge

Just **17%** of Federal IT managers see their agencies as "completely successful"
when it comes to their ability to draw insight from the data they collect

73% say their agency's challenge is not just harnessing and securing the data, but also analyzing and interpreting it
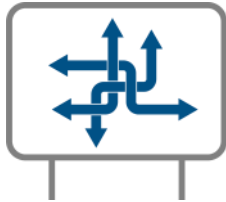
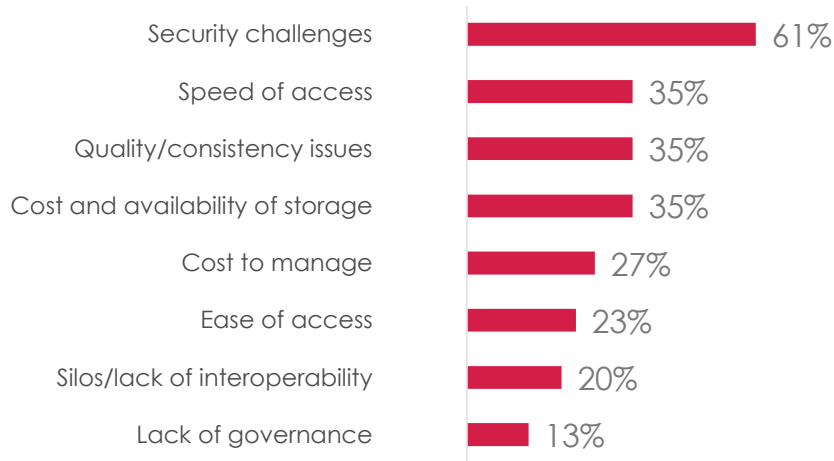And **81%** say the speed at which data can be received, analyzed, interpreted, and acted upon is key

Take away: Long Journey Ahead

Biggest Data Roadblocks

- **97%** of Federal IT managers say they are facing data challenges, and **63%** say their agency is frequently uncovering data bottlenecks that hold them back

Top data challenges:*

Challenge	Percentage
Security challenges	61%
Speed of access	35%
Quality/consistency issues	35%
Cost and availability of storage	35%
Cost to manage	27%
Ease of access	23%
Silos/lack of interoperability	20%
Lack of governance	13%

C-level leadership is significantly more likely than other IT managers to say they are facing challenges with quality/consistency issues (47% to 32%), ease of access (34% to 20%), and silos/lack of interoperability (31% to 17%)

Civilian agencies are significantly more likely than DoD agencies to say they are facing challenges with cost to manage (34% to 19%), ease of access (29% to 13%), and speed of access (38% to 25%)
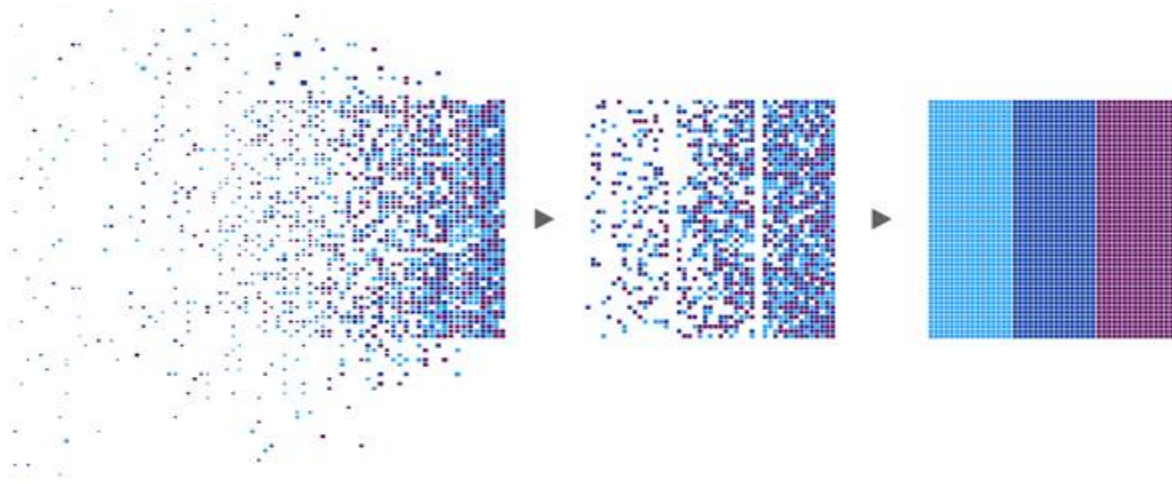
Take away: Security and Management Issues Cause Delays

*Respondents asked to select all that apply

AI Offers a Superhighway

- More than three out of four Feds (**77%**) say AI will be a game changer in the way government thinks about and processes data

And, **61%** say their agency currently has a problem AI could solve

Take away: Time to Hit the Gas

A(I) Vision of Success

- Feds see their agencies using AI to improve citizen service and mission success

Thinking ahead 10 years, how would you like to see your agency use AI?

" *Improving access to services, reducing wait times, and managing claims more efficiently* "

" *Leveraging against humanity capital areas of vulnerability like pilots and analysts* "

" *Identifying cyber attacks on the IT infrastructure* "

" *Providing automation within the judiciary, creating a true standard across all districts* "

" *Providing prevention health recommendations to high risk groups* "

" *Simplifying every interface to improve user experiences and ensure mission success* "

> " *[Agencies should] leverage AI to enable machine-processing of data streams because human analysts will be unable to process all of it. We are drowning in data and **AI should be our lifeboat** "*

**Take away:** Endless Possibilities

Where Are We Now?

- Agencies are looking to ramp up AI adoption, with a growing number including it in their technology roadmap

Nearly half (**48%**) of Federal IT managers say AI is a part of their agency's technology roadmap, and an additional **37%** say they are working to add it

Agencies with a **comprehensive data strategy** are **three times** more likely than those without one to include AI as part of their technology roadmap – **61%** to **19%**
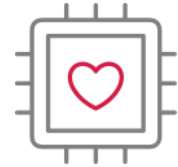
C-level leadership is also significantly more likely than other IT managers to say AI is part of their agency's technology roadmap – **69%** compared to **42%**
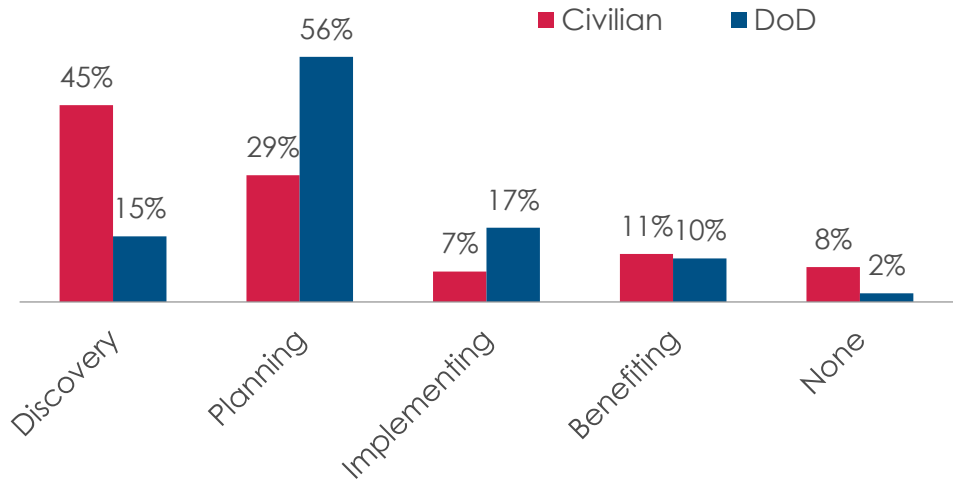
Take away: Feds Beginning to Put AI on the Map

DoD Leads the Charge

- While the vast majority are in the early stages of AI, approximately **one in 10** Feds have implemented at least one AI pilot program and are already experiencing benefits. Speed of adoption, however, varies by agency

83% of DoD managers report taking action on AI (preparing a business case, implementing, or benefiting from a pilot program) vs. just **47%** of managers from civilian agencies

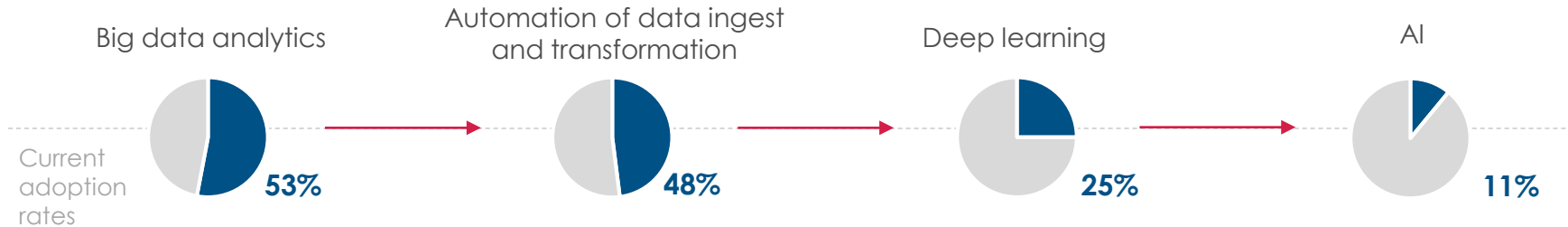## What is the status of AI within your agency today?

Legend: ■ Civilian ■ DoD

	Discovery	Planning	Implementing	Benefiting	None
Civilian	45%	29%	7%	11%	8%
DoD	15%	56%	17%	10%	2%

Take away: Look to DoD for Direction

Critical Mile Markers

- Feds see big data analytics, automation, and deep learning as important milestones on the road to AI

80% of Feds say the success in efforts like big data analytics, automation, and deep learning will lead to more robust AI adoption
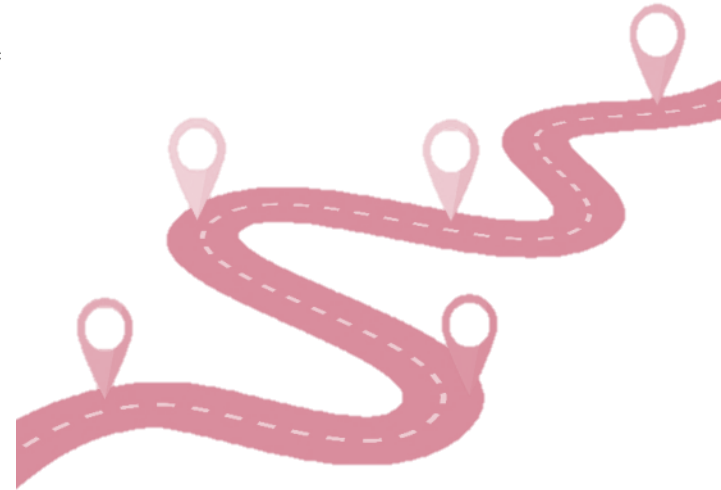
Big data analytics	Automation of data ingest and transformation	Deep learning	AI

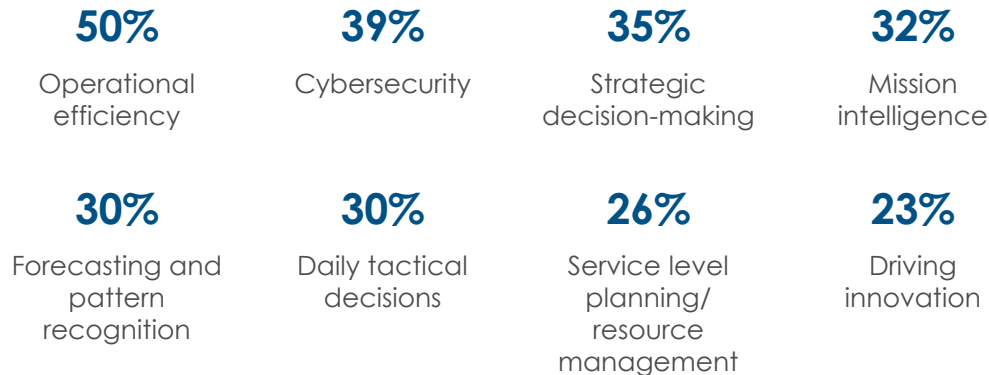Current adoption rates

53% → **48%** → **25%** → **11%**

C-level leadership is significantly more likely than other IT managers to say their agency is currently implementing the automation of data ingest and transformation – 63% compared to 44%

Take away: Analytics and Automation Build Momentum

How Next-Gen Tech Paves the Way

MeriTalk
Improving the Outcomes
of Government IT

- While not all agencies are using these technologies today, those who are report success in operational efficiency, strategic decision-making, and cybersecurity

How is your agency currently using big data analytics, automation, or deep learning to make the most of its data?*

50%
Operational efficiency

39%
Cybersecurity

35%
Strategic decision-making

32%
Mission intelligence

30%
Forecasting and pattern recognition

30%
Daily tactical decisions

26%
Service level planning/ resource management

23%
Driving innovation

Take away: Innovative Agencies are Picking Up Speed

*Those currently using big data analytics, automation, or deep learning asked to select all that apply

For Most, Still a Long Road Ahead

- When it comes to AI prep, some Feds are increasing efforts, but most are still missing the mark

Which steps have you taken to prepare for AI?*

35% Increased analytics training for the team

33% Invested in modern hardware platforms/storage options

33% Invested in data analytics software platforms

32% Moved at least one mission-critical dataset to the cloud

29% Established a centralized repository for agency data

27% Improved data tagging or overall organization

25% Implemented an image processing or computer vision solution

23% Implemented a voice recognition solution

Fewer than one in five have:

19% Implemented a virtual customer assistance or chatbot application

17% Implemented a natural-language processing (NLP) solution

DoD managers are significantly more likely than Civilian managers to have invested in modern hardware platforms/storage options (44% to 29%) and increased analytics training (40% to 29%)

C-level leadership is significantly more likely than other IT managers to have invested in data analytics software platforms (47% to 29%)

Take away: What's the Hold Up?

*Respondents asked to select all that apply

Fear Taps the Breaks

- Feds report fear or a lack of understanding around AI will slow agency adoption

Those who have not yet begun using AI are almost twice as likely as AI leaders* to say **fear** or a **lack of understanding** about the potential of AI will significantly slow adoption – 62% to 32%

To prepare, agencies say they'll need:**

- IT staff knowledge (84%)
- IT platform/infrastructure (82%)
- Analytics capabilities (81%)
- Data organization (81%)

Those with a **comprehensive data strategy**, however, remain ahead of the game. They're significantly more likely than other agencies to say they are well prepared for AI in terms of IT staff knowledge, IT platform/infrastructure, analytics capabilities, and data organization

Take away: Understanding May Ease the Tension

More Hazards Along the Route

▪ A lack of available funding and formal Federal guidance also stand to hold Feds back

Top challenges:*

39% Lack of available funding
30% Lack of Federal policy or other formal guidance
28% Lack of internal skills/competency to implement
23% Lack of necessary processes/methods to implement
23% Not ready from a data organization standpoint
21% Not ready from a data platform/infrastructure perspective

Additionally, **55%** of Federal IT managers say the **complexity** of the AI marketplace has made it difficult for their agency to find the solution that best fits their needs

C-level leadership is significantly more likely than other IT managers to say they are held back by a lack of Federal policy or other guidance (41% to 27%) and necessary processes/methods to implement (38% to 19%)

Civilian managers are significantly more likely than DoD managers to say they are held back by a lack of internal skills/competency to implement (35% to 15%)

Take away: Navigate with these Issues in Mind

*Respondents asked to select all that apply

Early Wins

- The good news? AI leaders – those currently implementing or already benefitting from at least one AI pilot program – are experiencing fewer data challenges

AI leaders are significantly less likely to experience challenges with data management costs (**14%** to **32%**) and security (**49%** to **65%**)
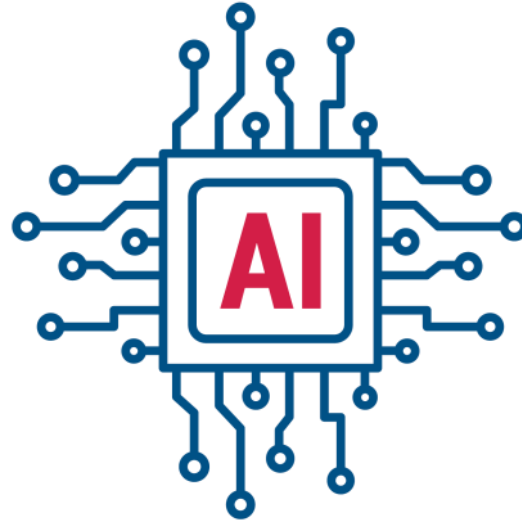
AI leaders are also significantly less likely to say their agency is frequently uncovering data bottlenecks – **43%** to **69%**

Take away: AI is Easing the Data Drive

Travel Tips from AI Leaders

- Those already implementing or benefiting from AI suggest agencies have a good grasp on the process, start small, and focus on measurable results

AI leaders:* What advice would you offer to other agencies currently researching, considering, or implementing AI?

" My keys to success have been working with a team that is ready to work and implement our plans regarding AI "

" Start small and simple, work your way up to something more complex. And don't try to tackle too much at once "

" Understand the costs associated with maintaining the equipment "

" Ensure all the various stakeholders get their requirements known early "

" [It's about] predictive analysis and robotics. Robotics keep our people safe and predictive analysis ensures that we learn. The keys are ensuring that funding is available as well as having real outcomes "

Take away: Set Expectations and Plan Ahead

*Those currently implementing or already benefitting from at least one AI pilot program

Recommendations

Commit to the Journey: Before agencies can tackle analysis and interpretation, they must start with a solid foundation for data organization, storage, and security. Make sure your agency begins with the end in mind by developing a comprehensive data strategy and embracing a data-centric architecture that will fuel success

Hit the Road: Feds say experience with AI-building blocks like big data analytics, automation, and deep learning can led to more robust AI success. Make analytics or automation your first stops to improve data usage, gain workforce buy-in, and secure much-needed momentum for the rest of the journey

Put AI on the Map: One in ten agencies are using AI. As adoption ramps up, be sure to take a macro view – incorporate AI in your agency's overall technology roadmap. Increase employee education and comfort levels, move datasets to the cloud and invest secured funding in the necessary infrastructure solutions to support your efforts

Methodology & Demographics

MeriTalk, on behalf of Pure Storage, conducted an online survey of 150 Federal IT managers familiar with their agency's use of or plans for AI, in May 2018. The report has a margin of error of ±7.97% at a 95% confidence level.

Respondent job titles

CIO/CTO/CDO	**11%**
Deputy CIO/CTO/CDO	**11%**
IT Director/Supervisor	**24%**
IT Systems Engineer or Administrator	**11%**
Data Center Manager or Administrator	**5%**
Network Manager or Administrator	**11%**
Data Scientist	**15%**
Other IT Manager	**12%**

Agency type

Federal civilian agency	**57%**
Federal DoD agency	**32%**
Federal intelligence agency	**11%**

Expertise

100% of qualifying Federal IT managers are familiar with their agency's use of or plans for artificial intelligence (AI)

Thank You

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Appendix: DoD Results

Data is a top priority for DoD:

96% of DoD managers either already have or are working on a comprehensive data strategy

88% say data is key to delivering better outcomes

And **83%** say the ability to draw intelligence from data ranks as one of their agency's top priorities

But challenges remain.

Top challenges:*

#1 Security challenges (60%)

#2 Quality/consistency issues (38%)

#3 Leveraging data for strategic decision making (35%)

73% say their challenge is not just harnessing and securing the data, but also analyzing and interpreting it, and

73% say the speed at which data can be received, analyzed, interpreted, and acted upon is key

*Respondents asked to select all that apply

Appendix: DoD Results (Cont.)

AI offers a superhighway:

77% of DoD managers say AI will be a game changer in the way government thinks about and processes data

And, **67%** say their agency currently has a problem AI could solve

90% of DOD managers say AI is either already on their agency's technology roadmap or they're working to add, **48%** and **42%**, respectively

Where are we today?

83% of DoD managers report taking action on AI (preparing a business case, implementing, or benefiting from a pilot program)

15% Discovery

56% Planning

17% Implementing

10% Benefitting

2% None

Appendix: DoD Results (Cont.)

Critical mile markers:

75% of DoD managers say the success in efforts like big data analytics, automation, and deep learning will lead to more robust AI adoption

Current adoption rates:

48% Big data analytics

44% Automation of data ingest and transformation

31% Deep learning

10% AI

Benefits to date:

How is your agency currently using big data analytics, automation, or deep learning to make the most of its data?*

#1 For operational efficiency (59%)

#2 For cybersecurity (43%)

#3 For mission intelligence (39%)

#4 For strategic decision-making (36%)

#5 For forecasting and pattern recognition (32%)

Appendix: DoD Results (Cont.)

Still, slow progress:

Which steps have you taken to prepare for AI?*

44%   Invested in modern hardware platforms/storage options

40%   Increased analytics training for the team

35%   Moved at least one mission-critical dataset to the cloud

33%   Invested in data analytics software platforms

33%   Established a centralized repository for agency data

Fewer than one in five have:

19%   Implemented a voice recognition solution

15%   Implemented a NLP solution

13%   Implemented a virtual customer assistance or chatbot application
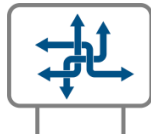
Remaining hurdles:

What challenges are still holding you back from adopting or further implementing AI?*

#1   Lack of available funding (35%)

#2   Lack of Federal policy or other formal guidance (27%)

#3   Not ready from a data organization standpoint (27%)

#4   Lack of necessary processes/methods to implement (23%)

#5   Lack of senior management buy-in (19%)

Additionally, **52%** say fear or a lack of understanding about the potential of AI will significantly slow adoption