

# How Artificial Intelligence Is Reshaping the Accounting Industry



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**Hello!**

**How is  
everyone?**

**Are you ready  
to get started?**

**What did we just do?**

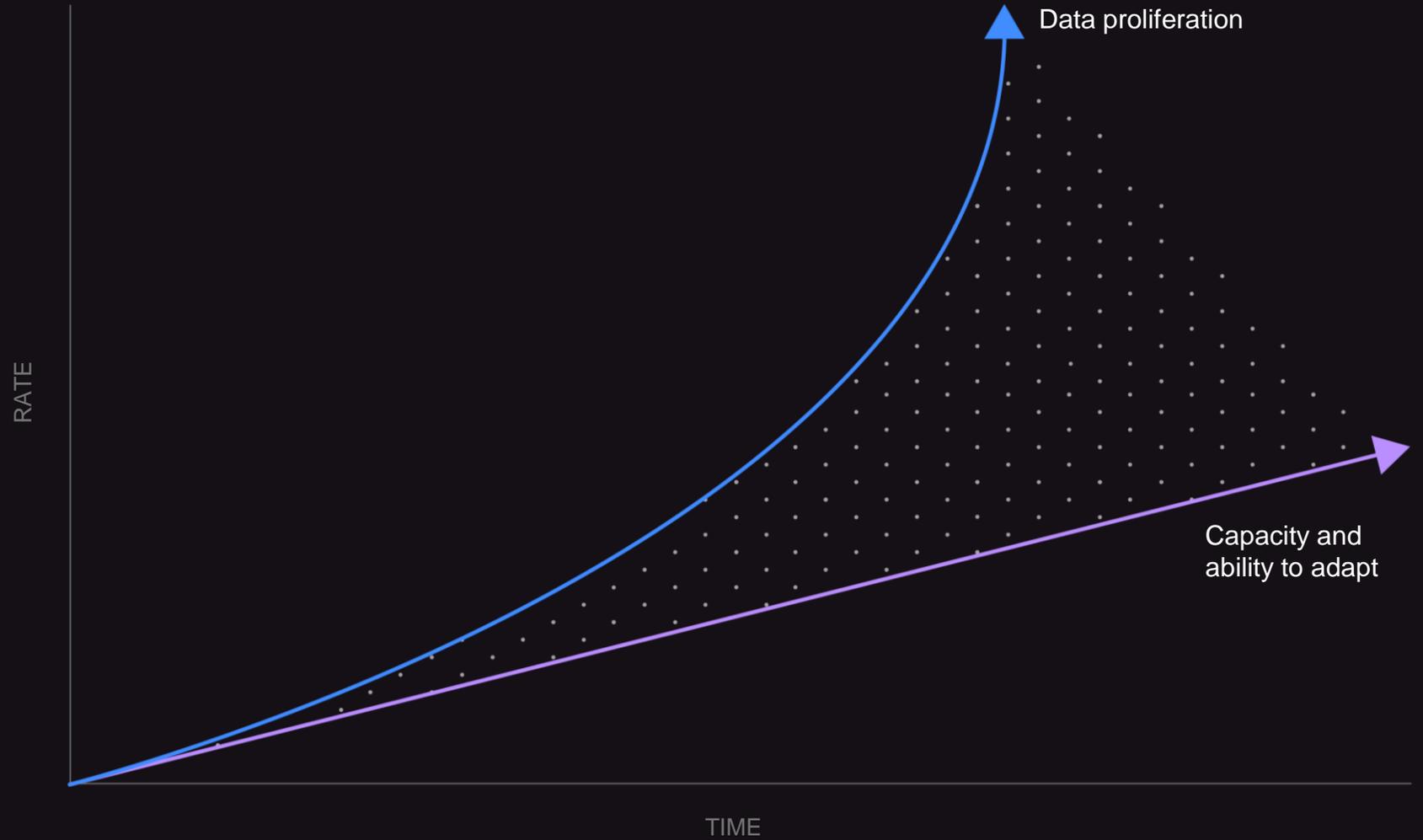
**How did it make you feel?**

**Do you typically get that  
feeling when interacting  
with your digital devices?**



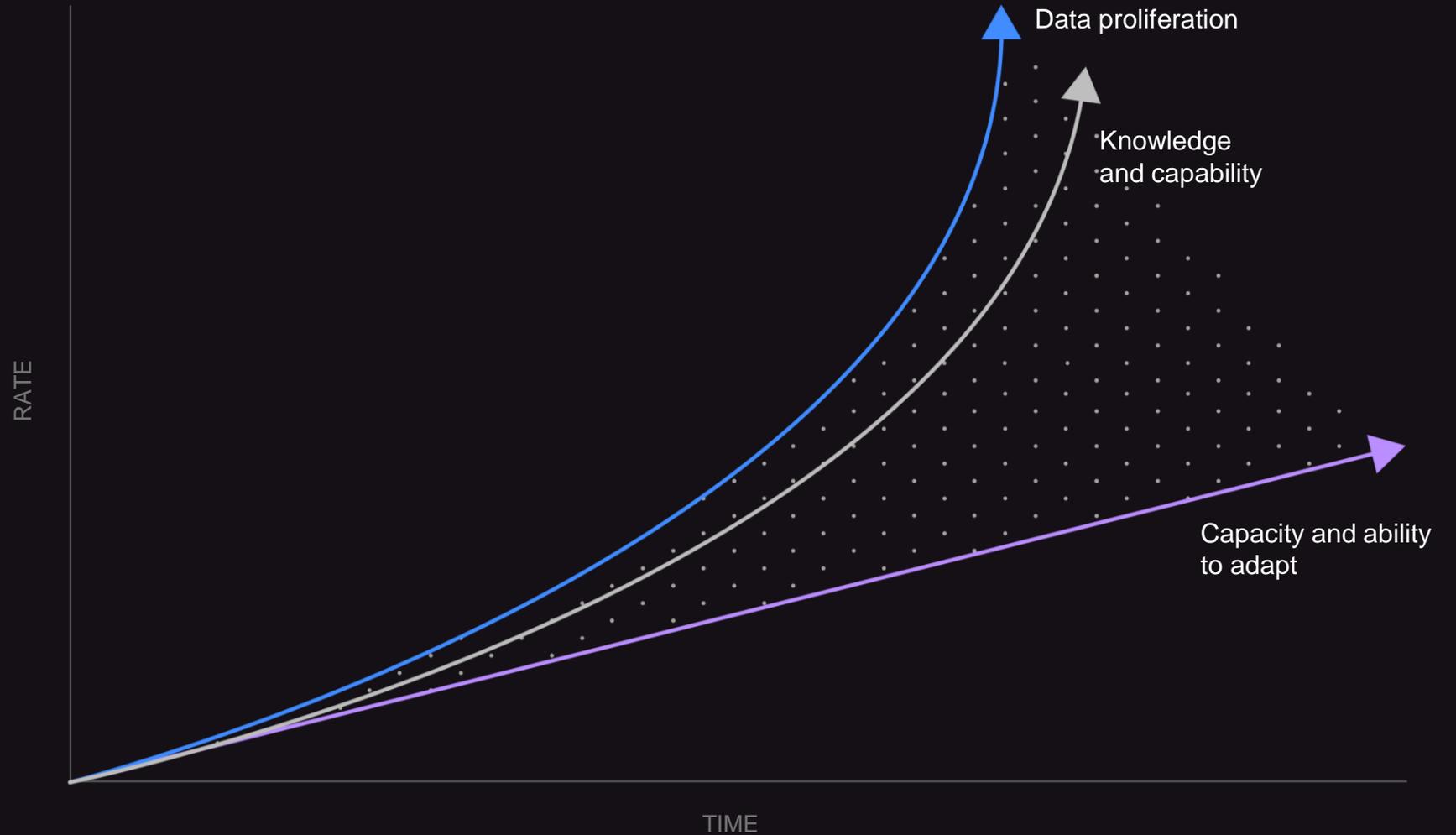
# AI is the next disruptor

As the volume of data, digital transformation, and the pace of technological change accelerate, the ability of organizations and professionals to keep up and capitalize on the opportunity is becoming more challenging.



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AI provides an opportunity to help professionals close the gap and harness the full potential of data by creating new tools to improve their work and outcomes.





**No Data**  
**No AI**

# Cognitive systems are fundamentally different from what you have today

## UNDERSTAND



Adapt and make sense of data; **read** text, **see** images with context **like humans do.**

## REASON



Interpret information, organize it, and offer explanations as to what it means, with **rationale for the conclusions.**

## LEARN



With each data point, interaction and outcome, they develop and sharpen their expertise, so **they never stop learning.**

## INTERACT



With abilities to see, talk and hear, Cognitive systems **interact with humans in a natural way.**

# Cognitive businesses will redefine how decisions are made

## **AI is the system of the future.**

People will define what is to be learned.  
System will learn how to learn it.

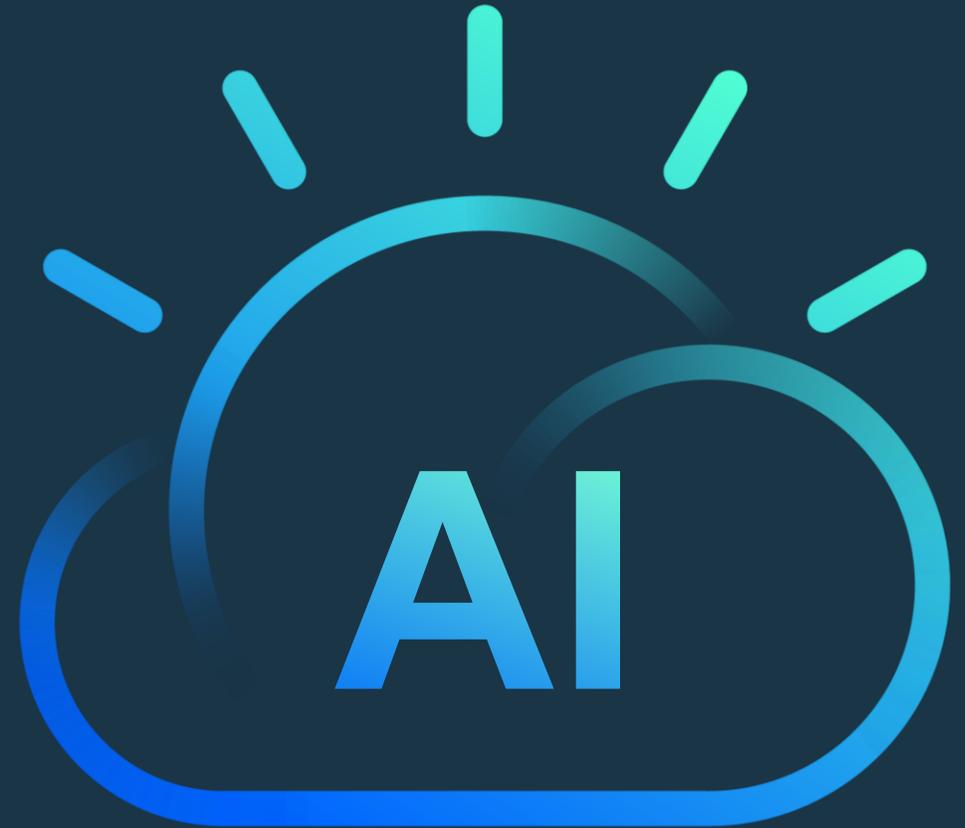
- Interactive decision making, learning and evidence-based explanations
- A range of techniques including natural language processing, knowledge and planning
- Statistical prediction analysis and pattern recognition to make highly data-driven decisions



# Artificial Intelligence and the Future of Accounting

## AI is the system of the future.

- Major accounting software vendors offering capabilities to automate data entry, reconciliations and more
- Expected that by 2020 accounting tasks, tax, payroll, audits, banking, etc. will be fully automated using AI technology
- Not an effort to eliminate accountants but a means to provide time to focus on decision making, problem solving, strategy development, etc.



**Humans  
+  
Machines** > **Humans  
or  
Machines**



**Not  
all robots  
are evil**



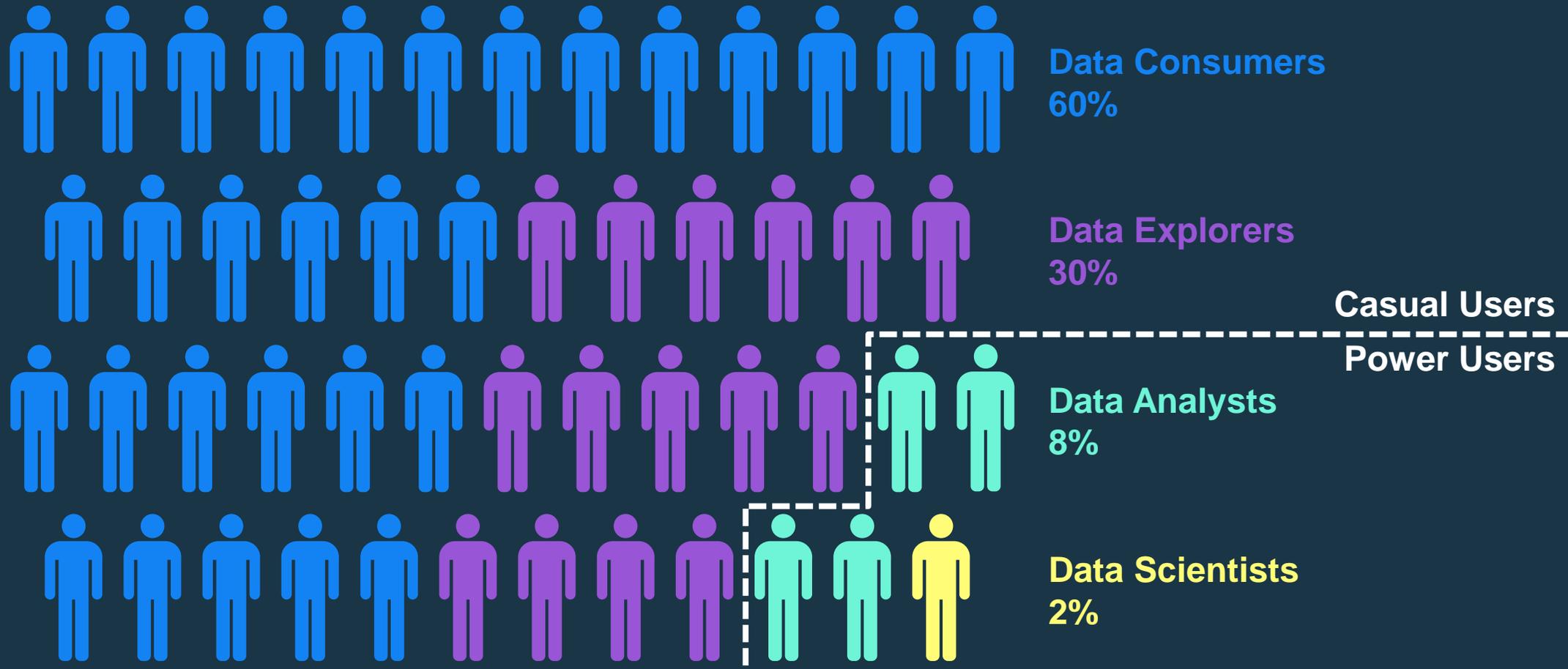
# “Coping With Humans”



**99%** say their firms are trying to become insights-driven, but only **one-third** report succeeding

Your data has **outgrown** the  
analytics **capacity** of your  
average business user.

# There is a growing population of Professionals hungry to put data to work



Business users with only **basic** analytics skills could conduct analysis yielding **misleading** or **incorrect** insight

Bringing together **man and machine** to help us make better, smarter decisions.

### Humans excel at

Common Sense

Dilemmas

Morals

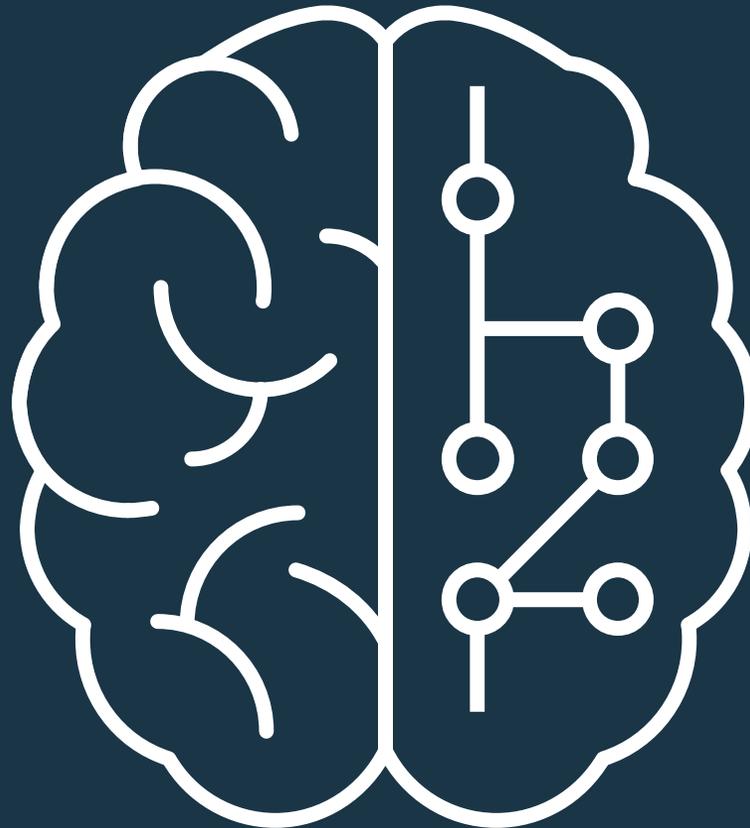
Compassion

Imagination

Dreaming

Abstraction

Generalization



### AI Systems excel at:

Pattern Identification

Locating Knowledge

Machine Learning

Eliminate Bias

Endless Capacity

Natural Language

Understanding

# Data Science and Business Analytics makes data simple, accessible and actionable

*Descriptive, Diagnostic, Predictive, Prescriptive to plan a course, monitor the business, predict the future, and change the outcome*

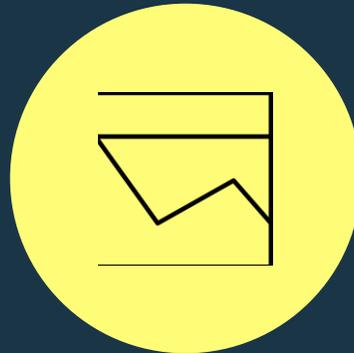
Grow  
Revenue



Grow, Retain, and  
Satisfy Customers

*Better understand customer  
behavior*

Reduce  
Cost



Increase Operational  
Efficiency

*Streamline operations*

Mitigate  
Risk



Mitigate and Manage  
Risks

*Identify high risk signals*

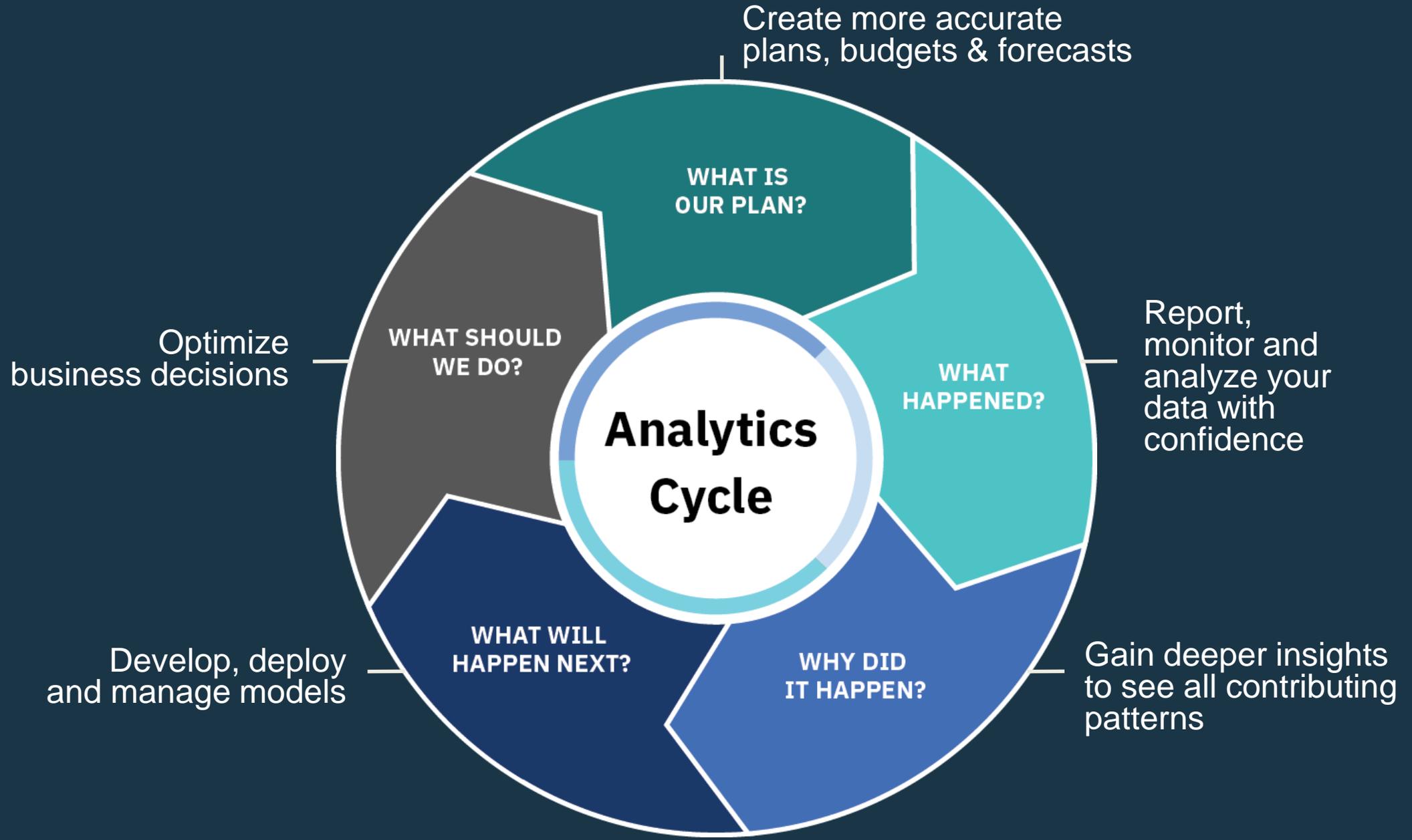
Drive  
Innovation



Drive Innovation with  
Analytics

*Validate business  
decisions with data*

# Analytics Lifecycle



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We make data  
simple and  
accessible

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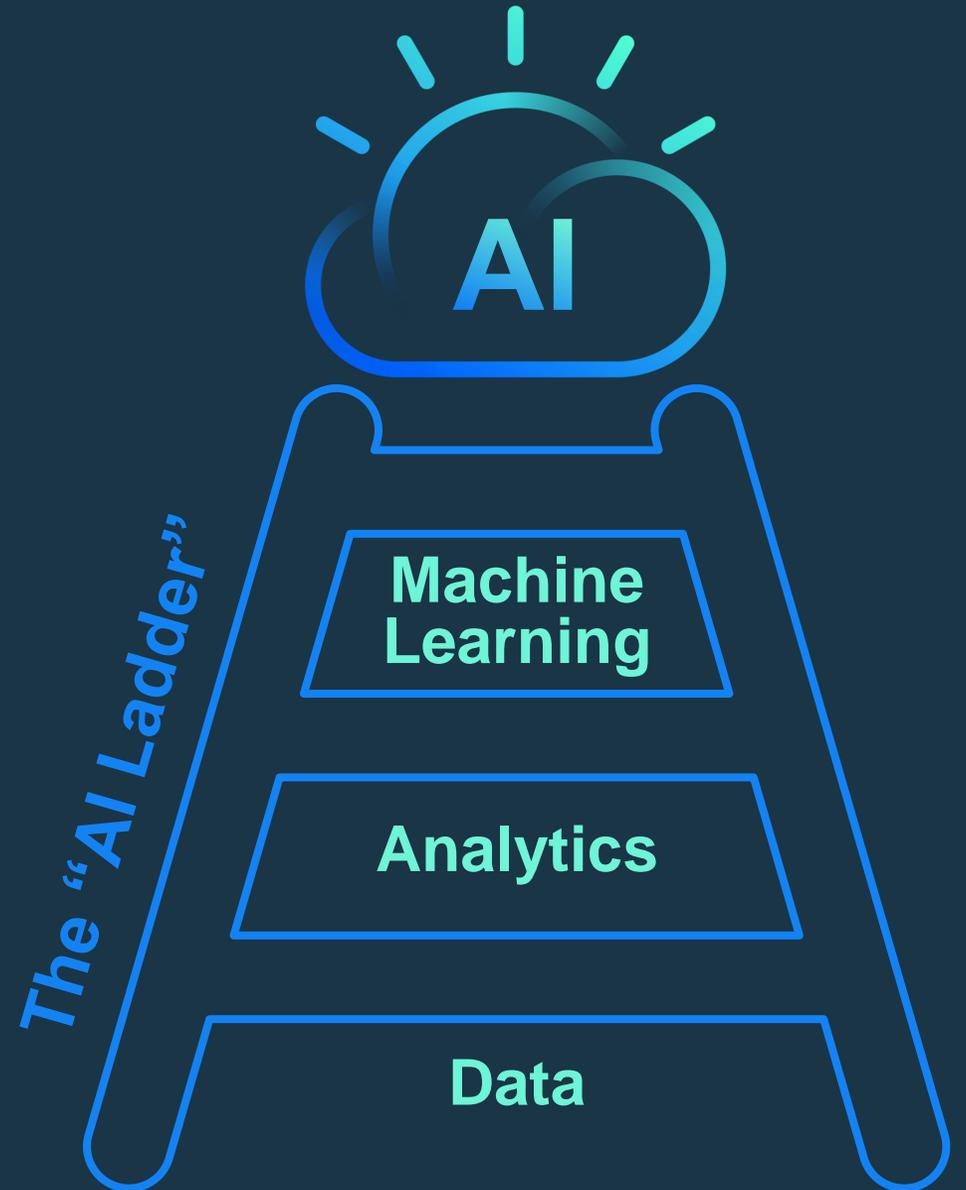
We deliver data  
insights for better  
business decisions

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We help our  
clients climb  
the AI Ladder

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Live Transcript

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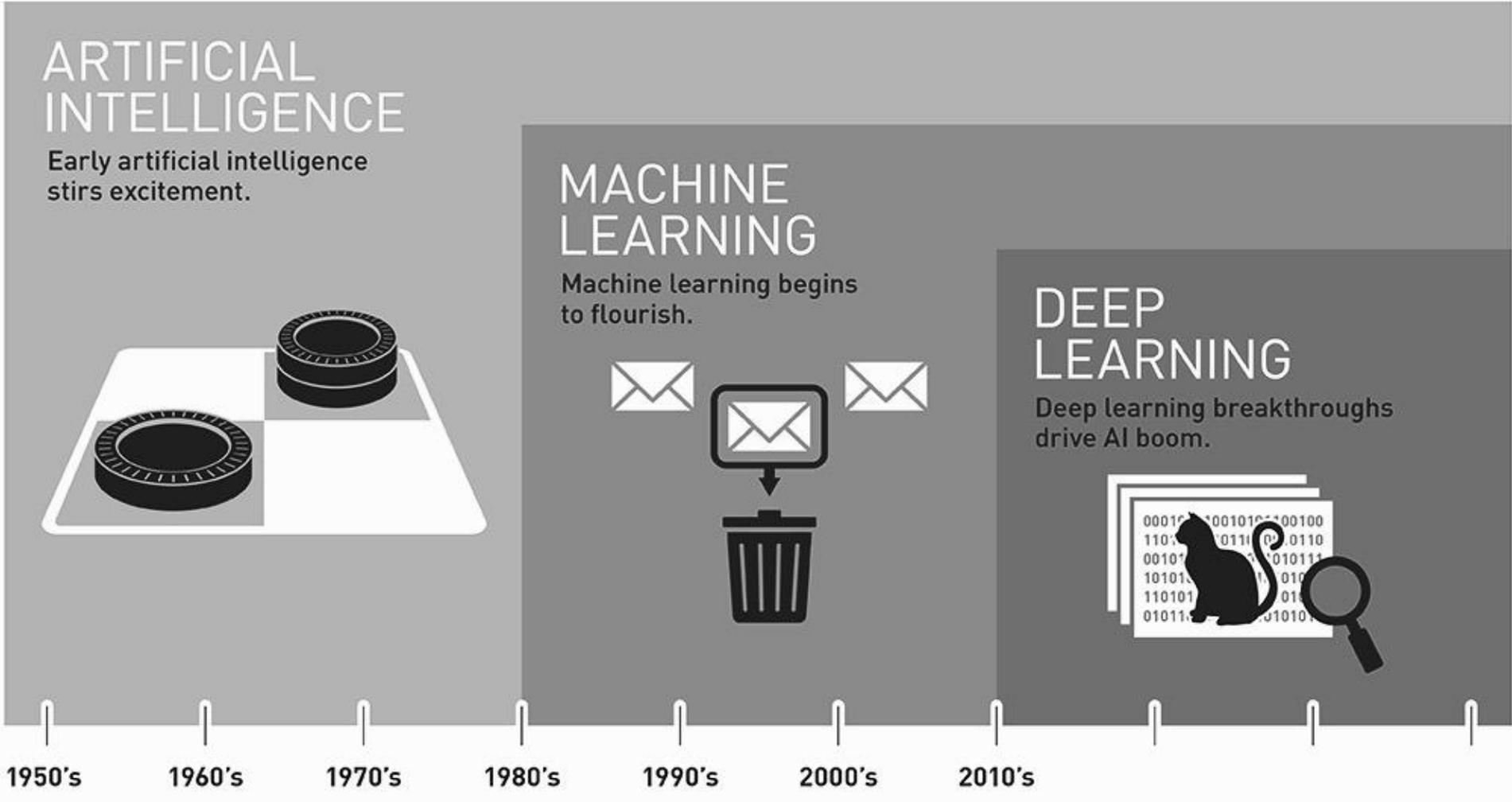
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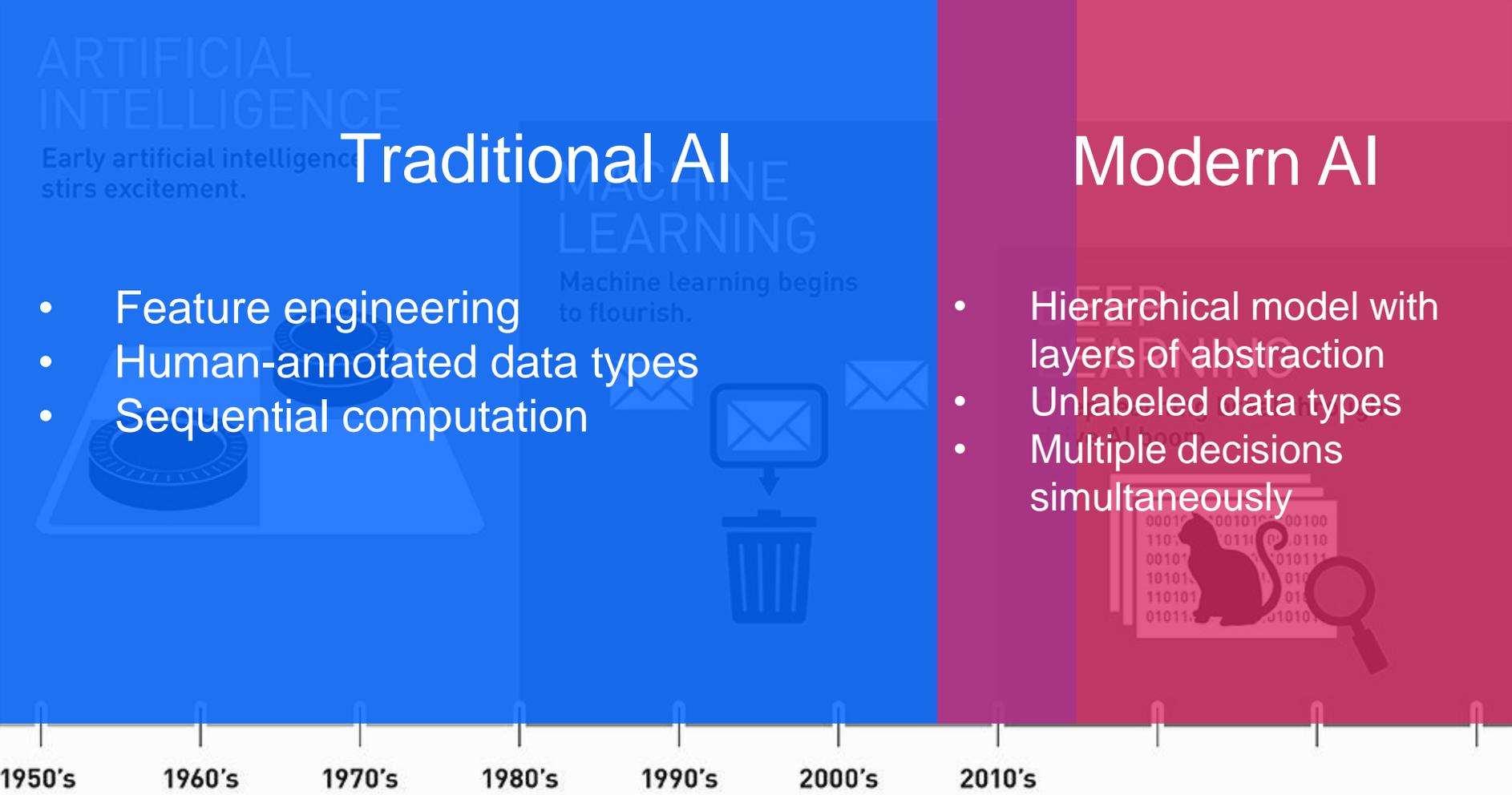
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# One perspective to view AI, ML, and DL

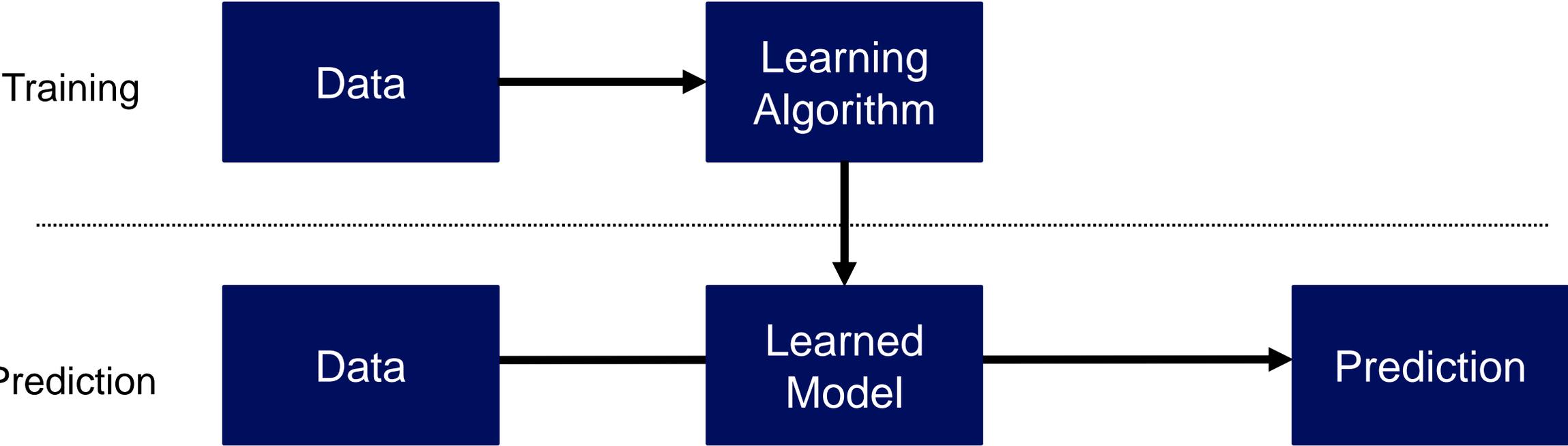


# One perspective to view AI, ML, and DL



# What is Machine Learning?

Machine Learning is a type of AI that provides computers with the ability to learn **without being explicitly programmed**

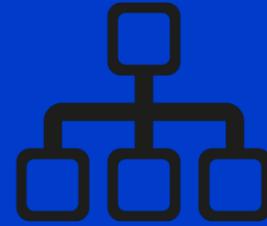


# What is Deep Learning?



Part of machine learning field of learning representations of data

Exceptional effective at learning patterns



Utilizes learning algorithms that derive meaning out of data by using hierarchy of multiple layers that mimic the neural networks of our brain



If you provide the system tons of information, it begins to understand it and respond in useful ways

**No feature engineering required!**

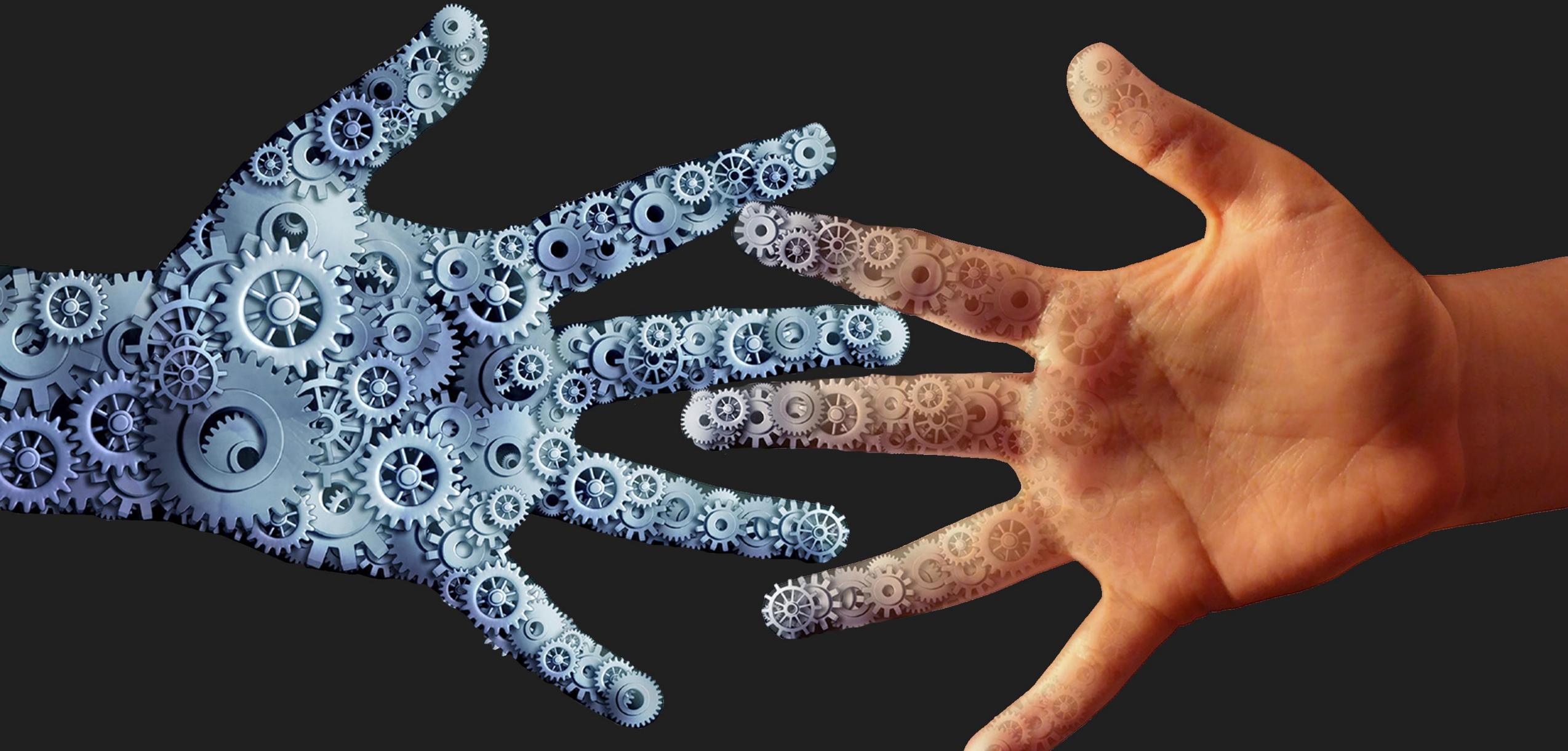


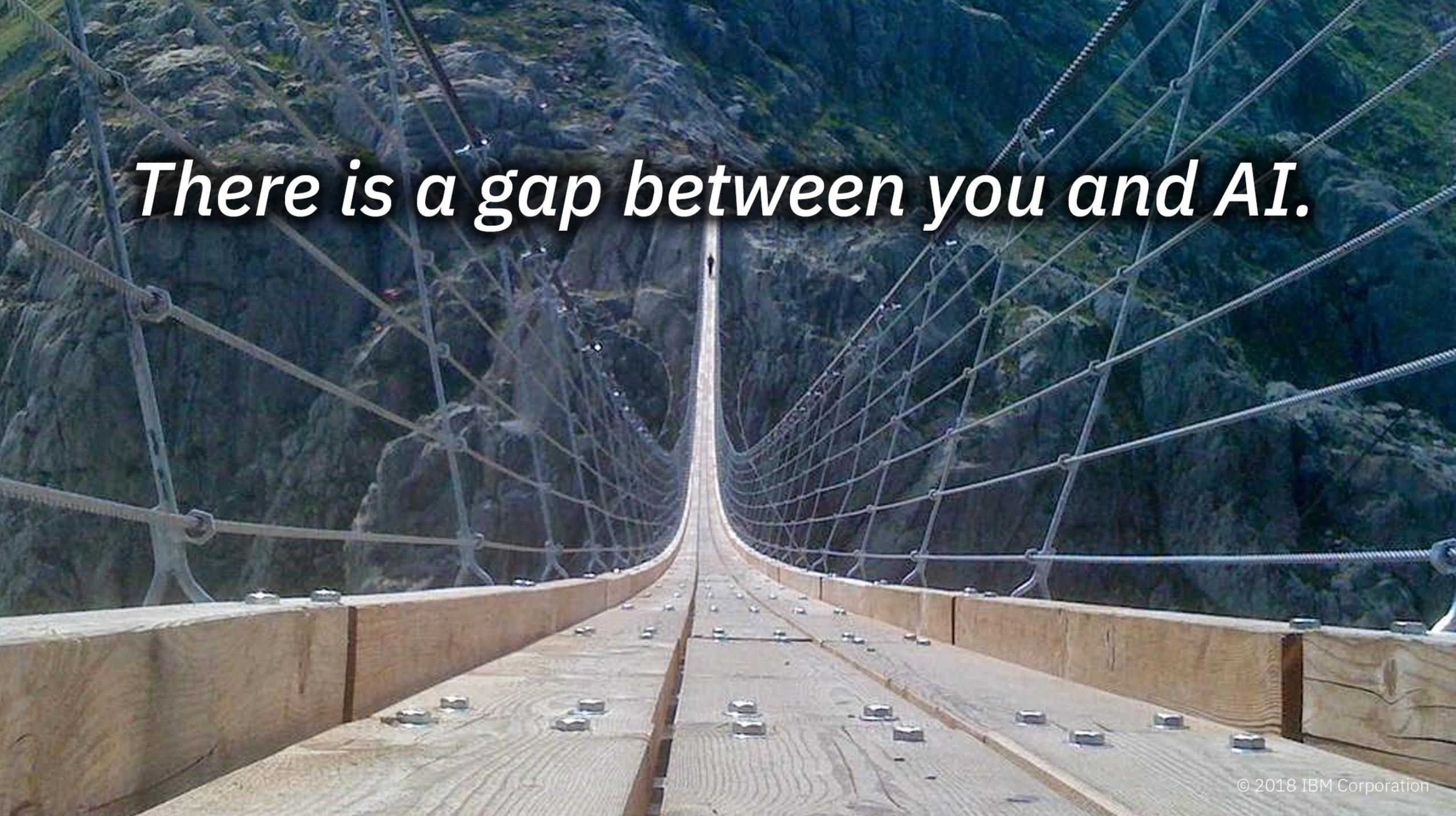
THIS ISN'T ABOUT  
SEARCHING FOR  
**BETTER**  
ANSWERS

IT'S ALL ABOUT  
SEARCHING FOR  
**BETTER**  
QUESTIONS

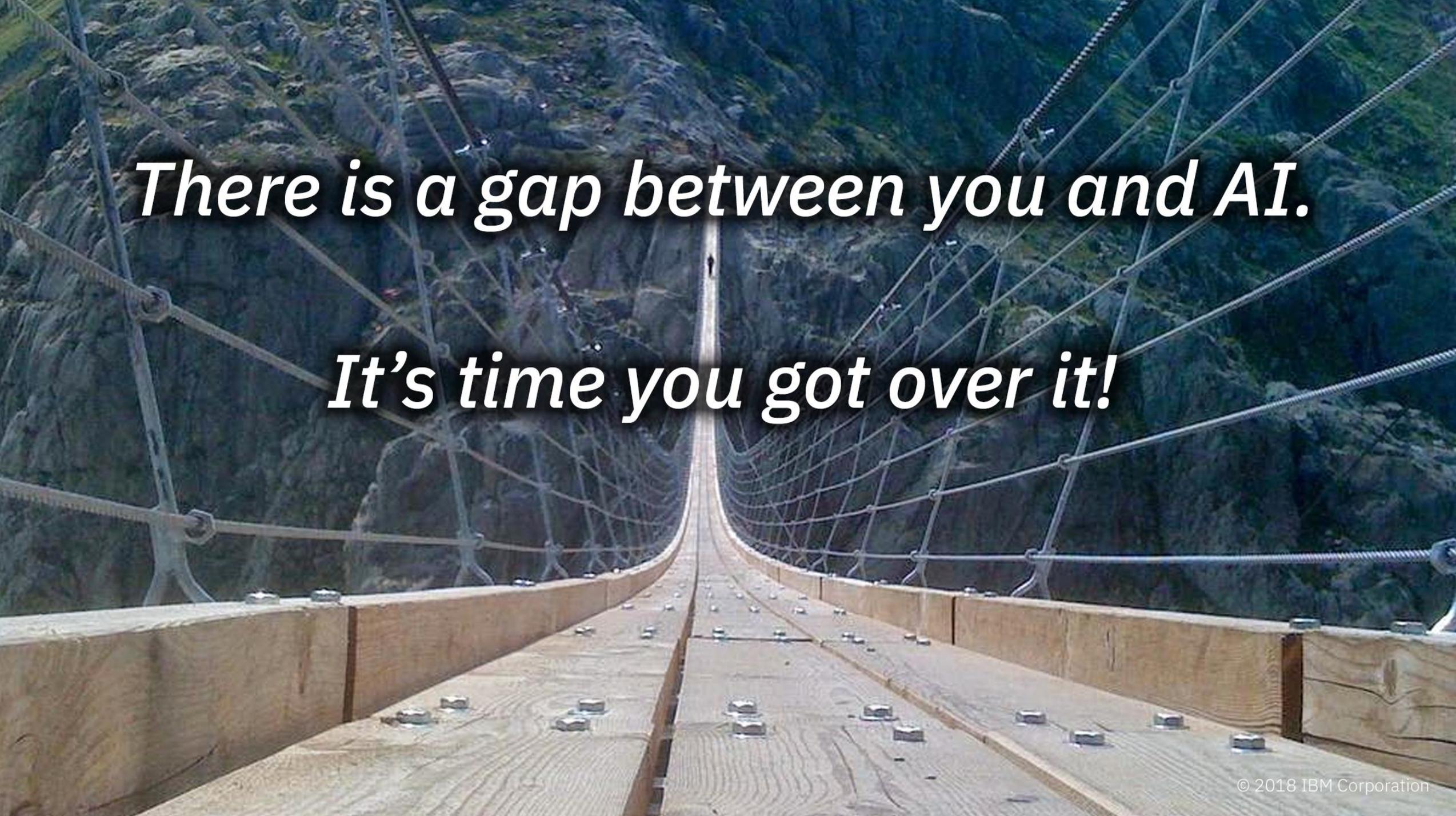


# AI: Augmented Intelligence



A perspective view of a suspension bridge with wooden planks and metal cables, stretching across a deep, rocky canyon. A small figure of a person is visible in the distance on the bridge. The text "There is a gap between you and AI." is overlaid in white, italicized font.

*There is a gap between you and AI.*

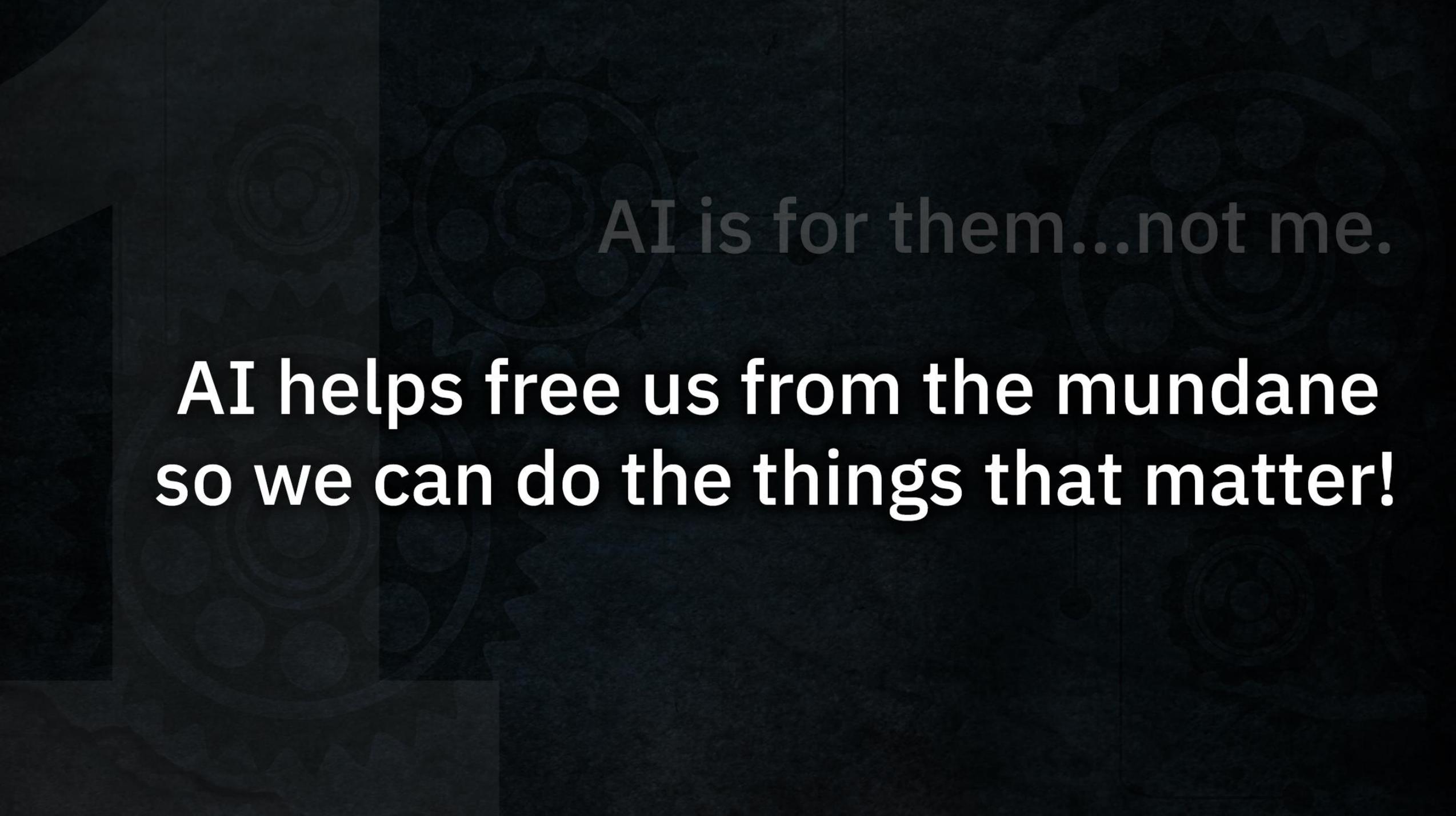
A perspective view of a suspension bridge with wooden planks and metal cables, stretching across a deep, forested valley. A small figure of a person is visible in the distance on the bridge deck.

*There is a gap between you and AI.*

*It's time you got over it!*

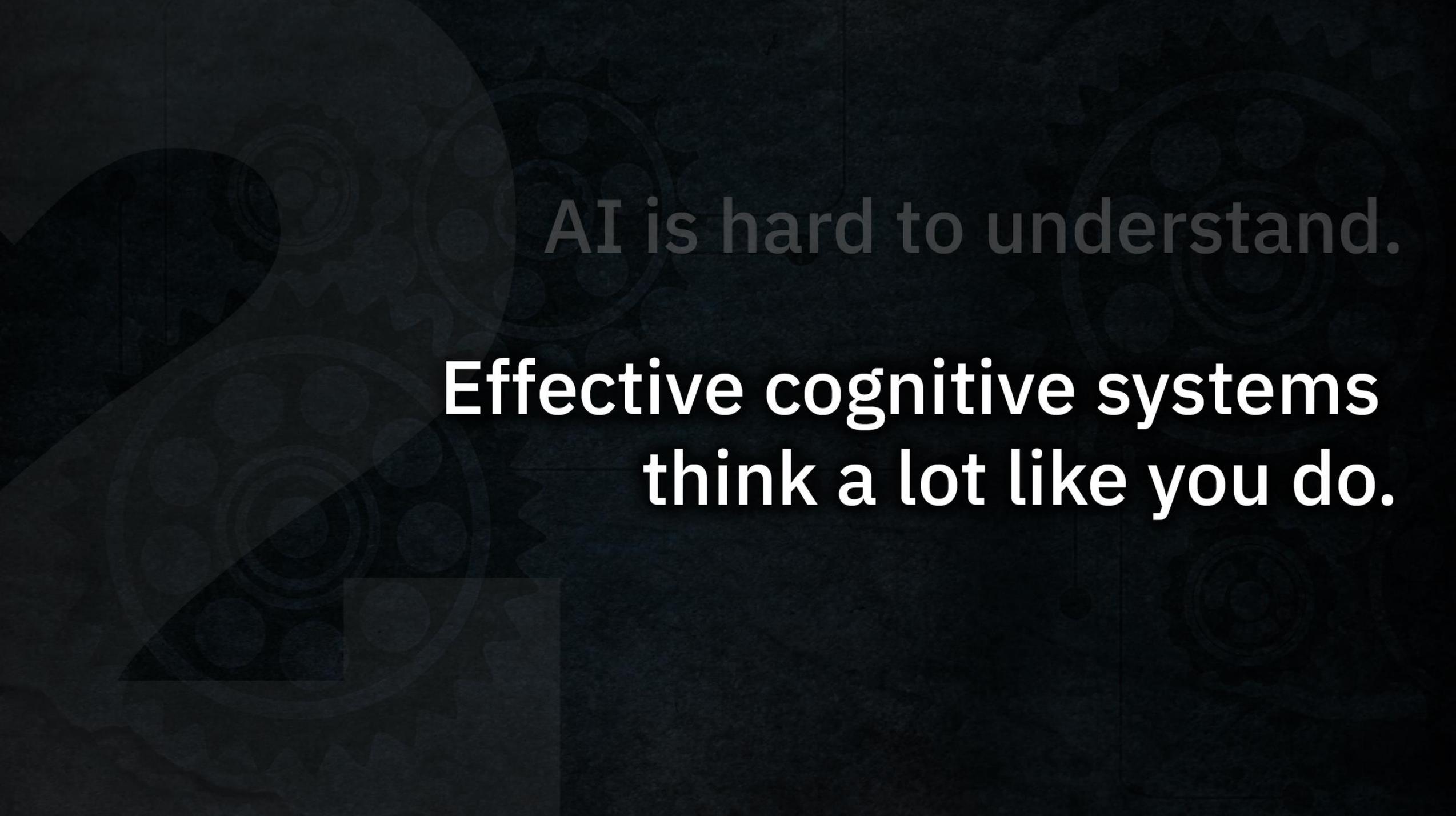
# *Four misconceptions*



The background is dark with a pattern of faint, overlapping gears. On the left side, there is a large, semi-transparent number '1'.

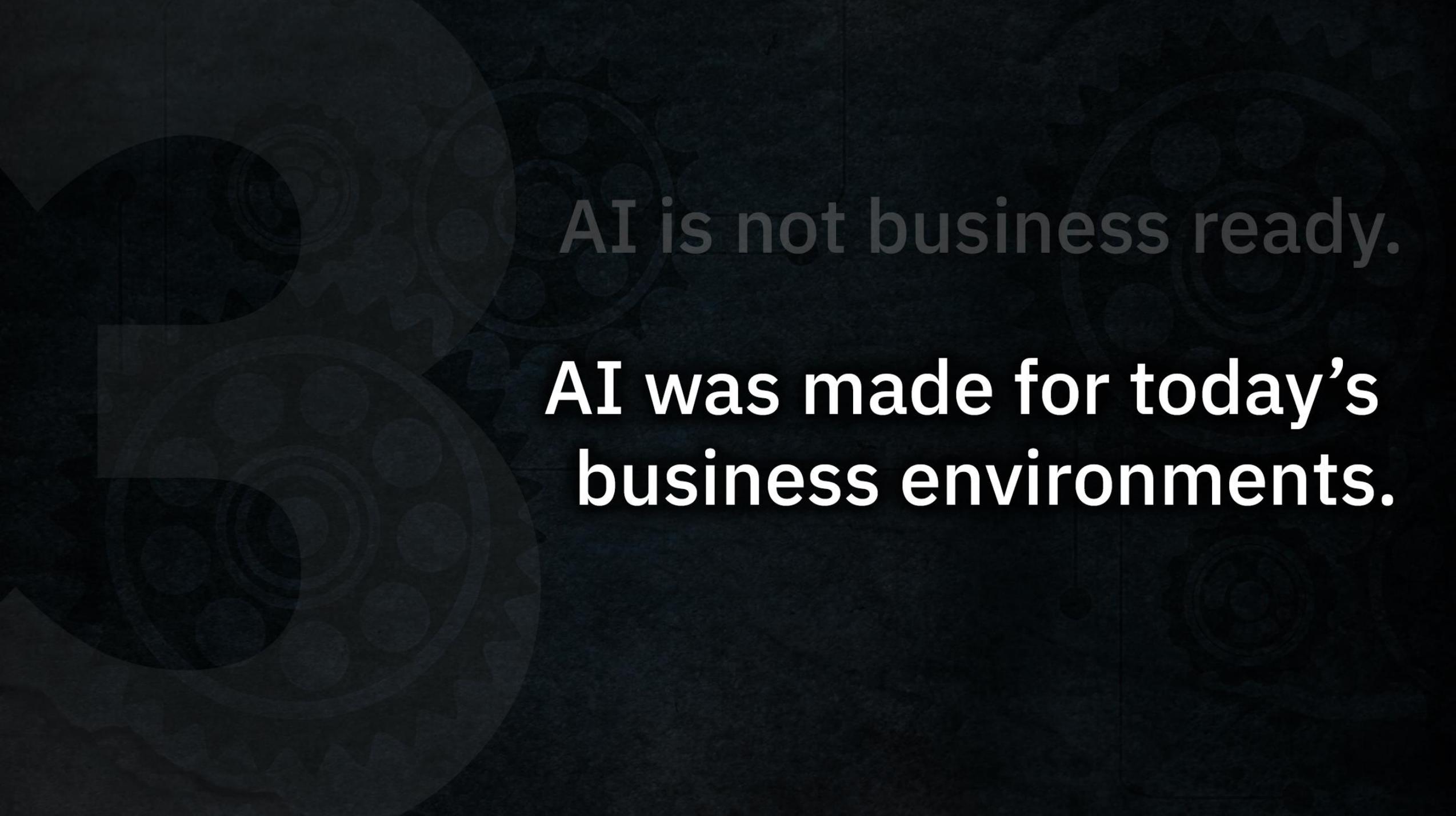
AI is for them...not me.

**AI helps free us from the mundane  
so we can do the things that matter!**

The background is dark with a pattern of faint, overlapping gears. On the left side, there is a large, semi-transparent silhouette of a human brain.

AI is hard to understand.

**Effective cognitive systems  
think a lot like you do.**

The background of the slide features a dark, monochromatic pattern of interlocking gears of various sizes, creating a mechanical and industrial aesthetic. The gears are rendered in shades of dark gray and black, with some appearing more prominent than others, giving a sense of depth and complexity.

AI is not business ready.

**AI was made for today's  
business environments.**

I should wait to see what happens.

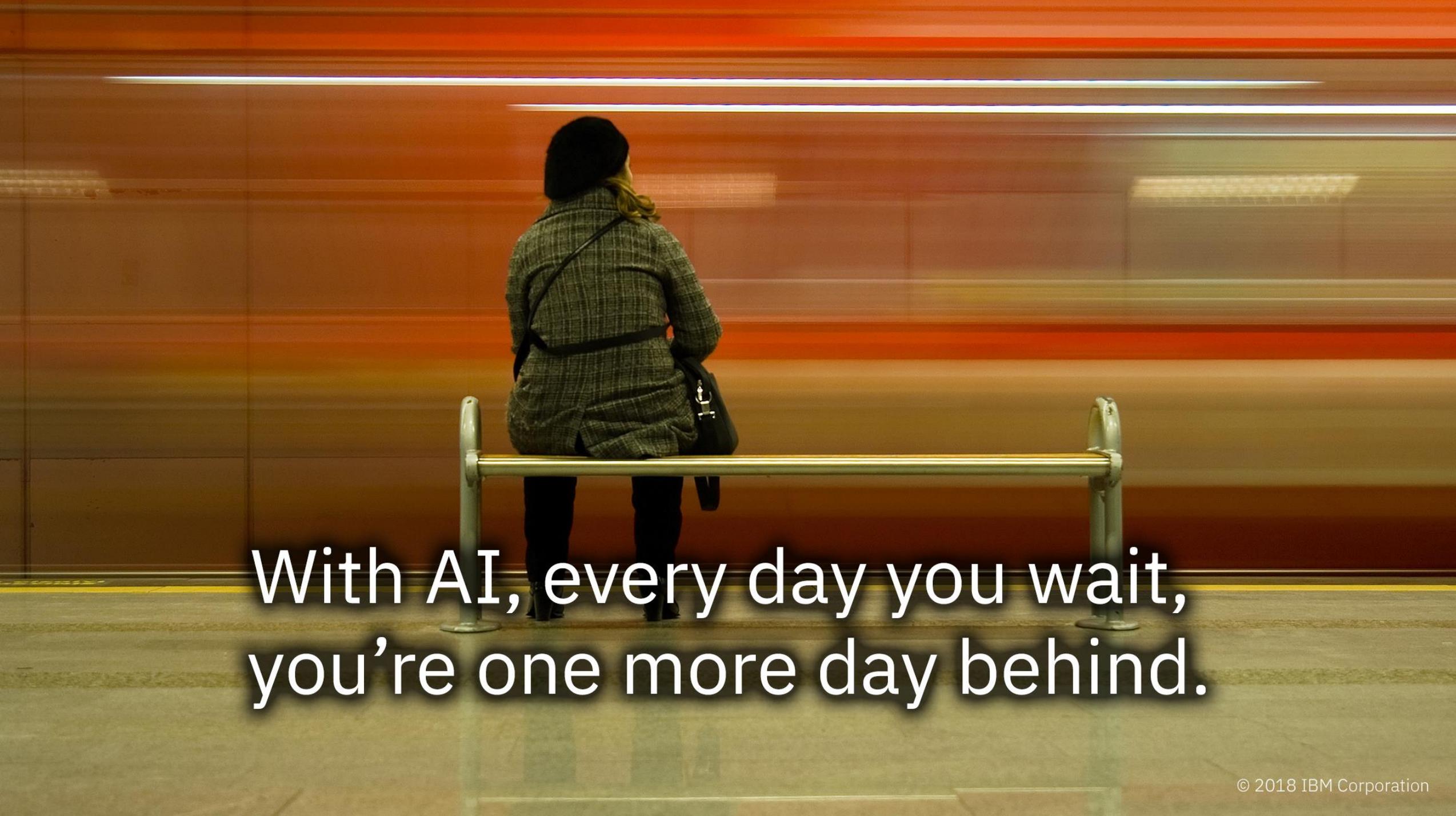
**If you're not moving forward  
you're backing up.**

All learners begin at day one.

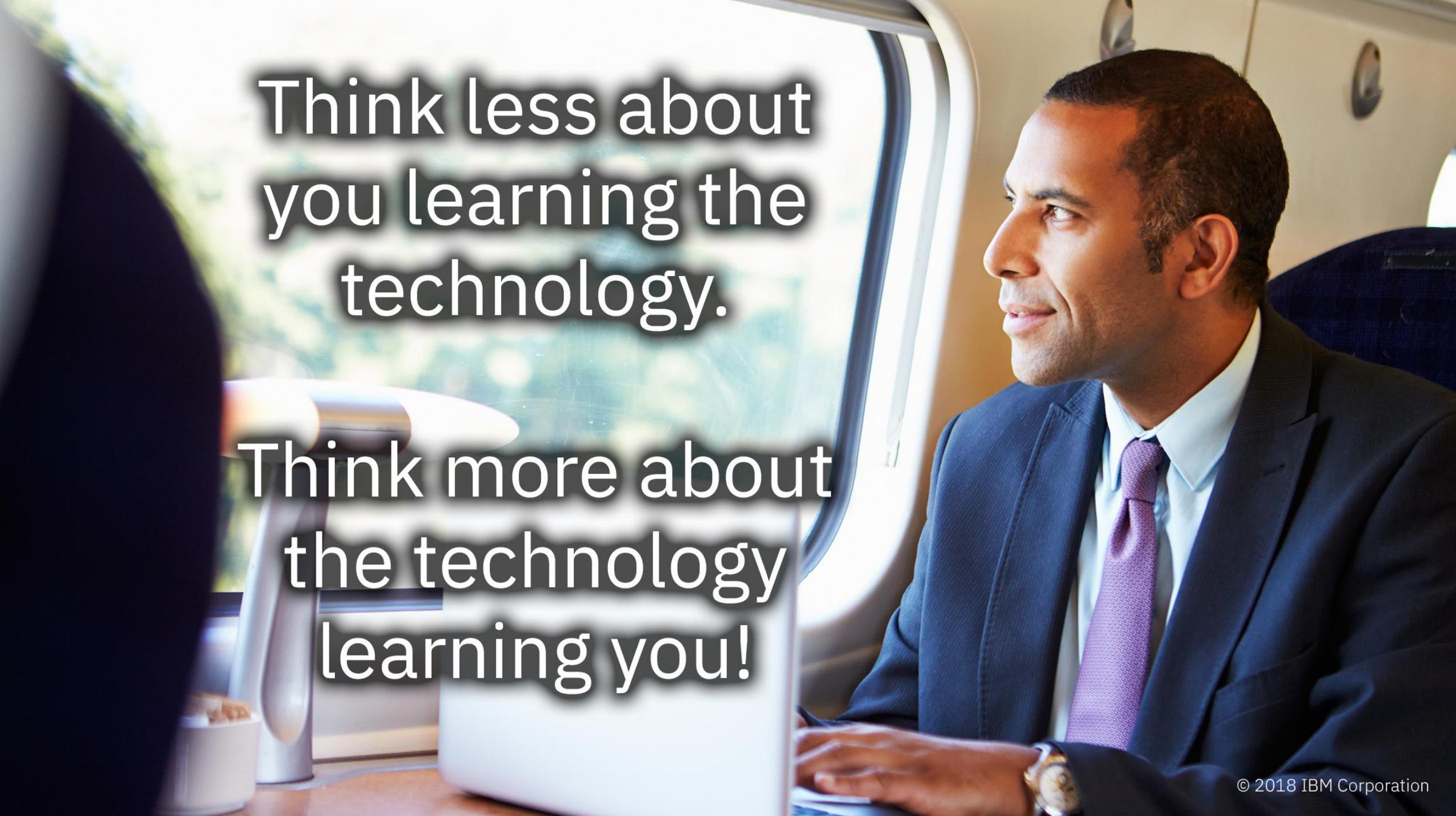


With earlier technologies you might  
have waited to start your journey.



A woman wearing a dark beanie and a grey plaid coat is sitting on a metal bench in a subway station. She is facing away from the camera, looking towards a blurred train passing by. The background is a warm, orange-toned wall with horizontal light streaks. The overall mood is one of waiting and being out of sync with the fast-moving world.

With AI, every day you wait,  
you're one more day behind.

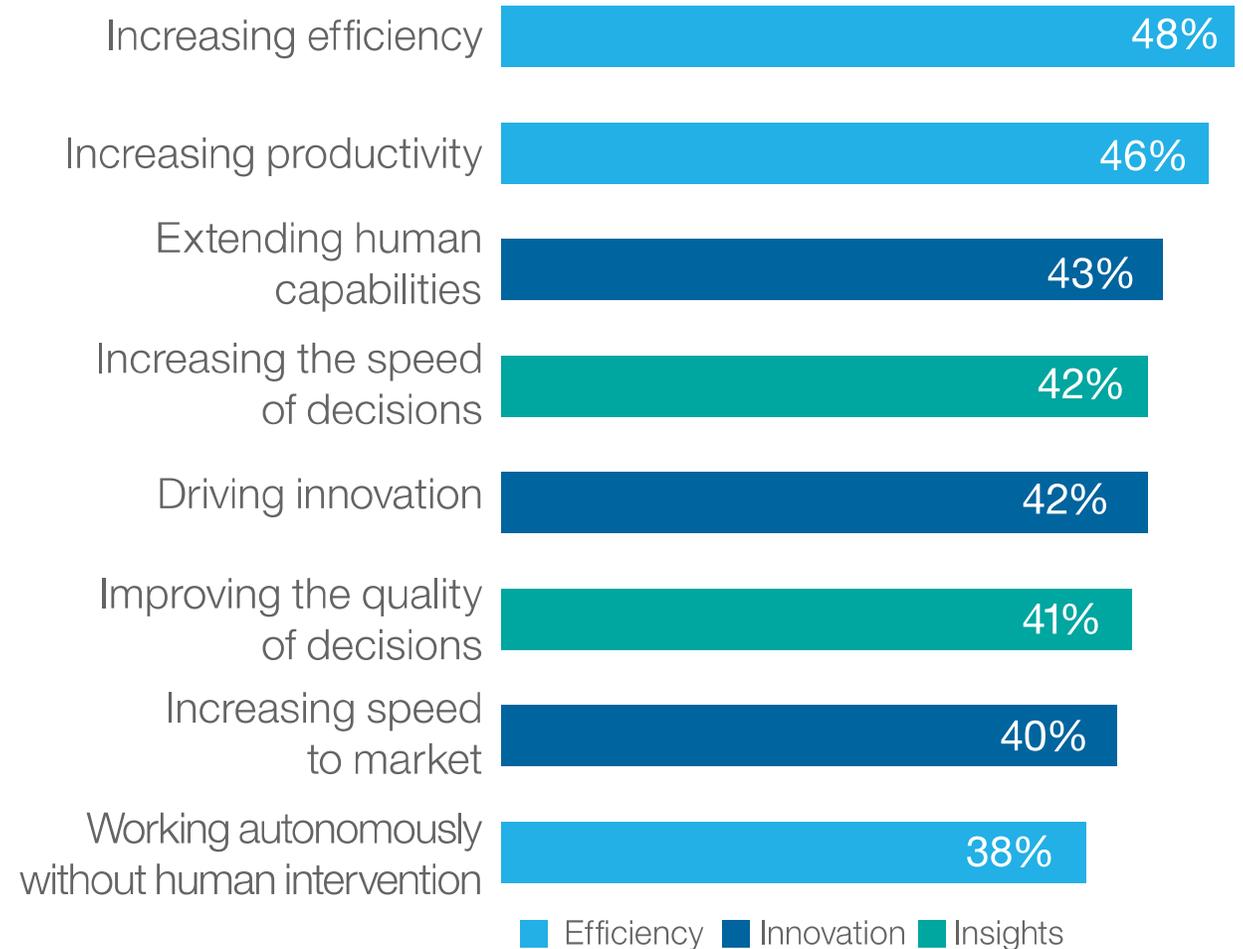
A man in a dark blue suit, light blue shirt, and purple tie is sitting at a desk in an office. He is looking out a window to his left. On the desk in front of him is a silver laptop. To the left of the laptop is a white desk lamp and a small white container. The background is a bright window showing a blurred outdoor scene.

Think less about  
you learning the  
technology.

Think more about  
the technology  
learning you!

# Early benefits of intelligent machines include efficiency, innovation and insights

- Automotive firms are realizing substantially more value than others across industries in nearly every area; Industrial, Electronics, and Banking firms also report more value in a range of areas.
- The largest companies in our survey (more than \$10 billion in revenue) are more likely to report value from robots and intelligent machines in a range of areas, including increasing efficiency (76%), increasing productivity (67%), and extending human capabilities (67%).
- Organizations that are using machine learning in some or all parts of the business are more likely to have realized value in a range of areas, including increasing the quality and speed of decisions.



Source: Intelligent Automation Study. Question: To what extent has your organization realized value from robots and other intelligent machines? “Some positive impact” and “substantial positive impact” responses.



# Executives are seeing the positive impact intelligent machines can have on their businesses

Increasing automation will have a positive impact on operational efficiency



Intelligent machines will have a meaningful impact on my business performance in the next three years



Intelligent machines will provide new categories of insight that enhance decision-making



Increasing automation will have a positive impact on quality



Natural language processing will allow human-to-device and device-to-human understanding



Increasing automation will reduce financial risk

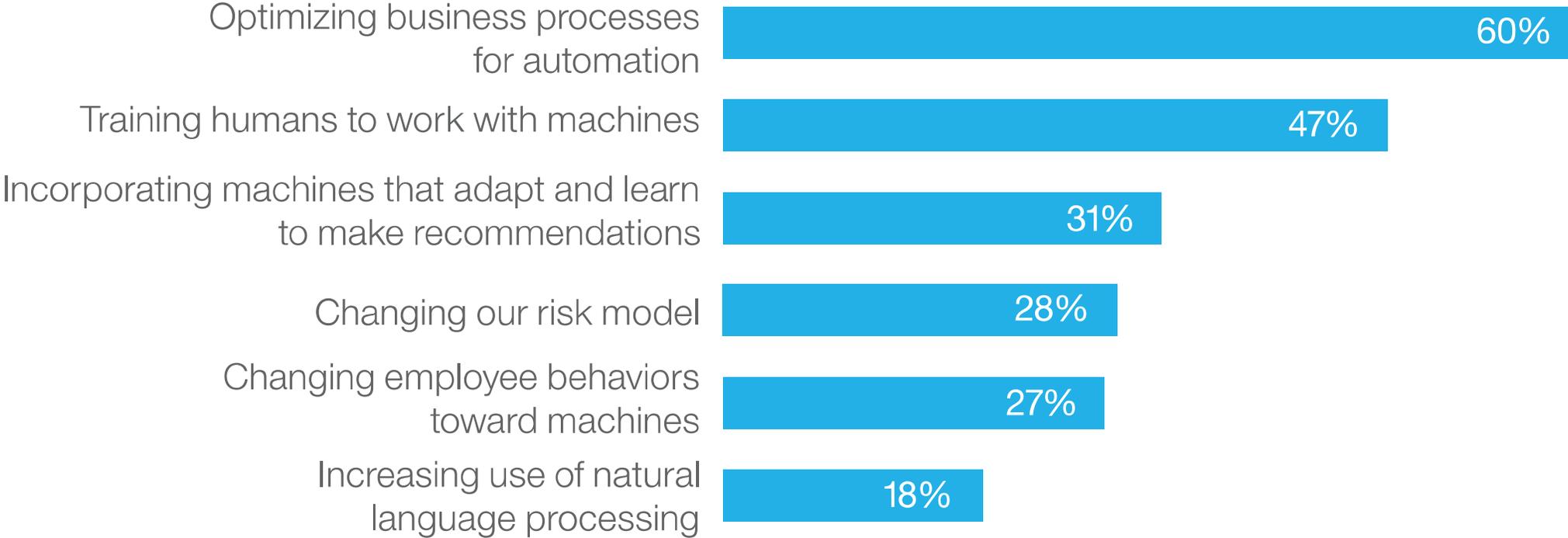


Source: Intelligent Automation Study. Question: To what extent do you agree with the following statements about human-machine interactions? “agree” and “strongly agree” responses.



# Process optimization precedes cutting-edge technology

*AI/Machine learning requires process optimization*



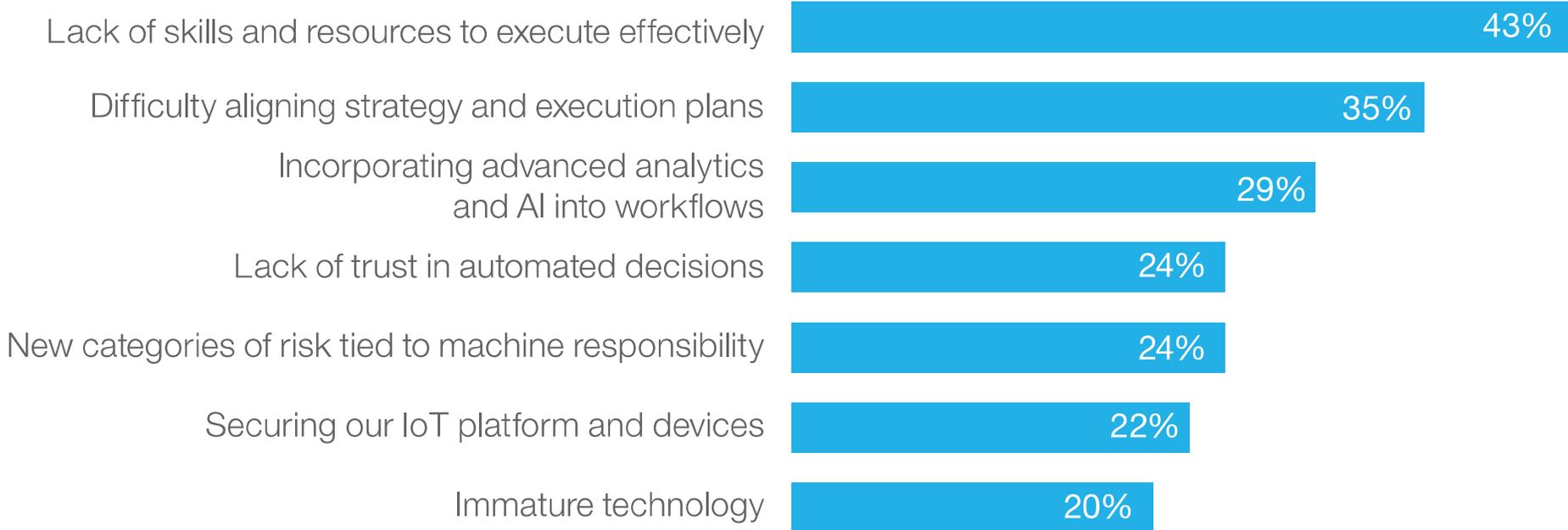
Source: Intelligent Automation Study. Question: How has your organization changed processes and workflows, if at all, to reflect the involvement of artificial intelligence/machine learning/adaptive robotics? Select all that apply.



# But, most have not taken steps to make this happen - people are the biggest hurdle to cognitive adoption

*People skills and resources are the biggest hurdles to cognitive adoption*

*Greatest challenge to your organization's use of artificial intelligence*

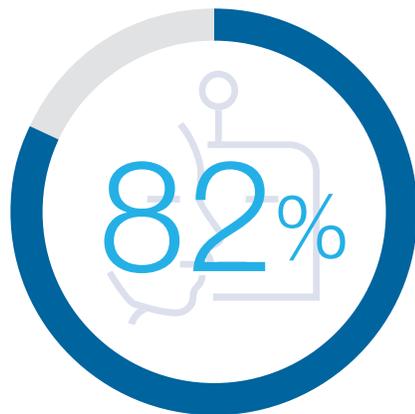


Source: Intelligent Automation Study. Question: Which of the following present the greatest challenges to your organization's use of artificial intelligence/machine learning/adaptive robotics and automation? Select up to three.

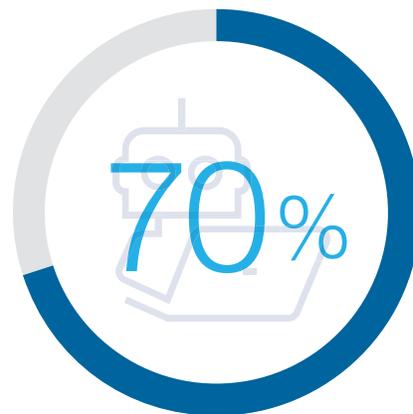


# Teaching humans to work with machines begins with “feeling” comfortable

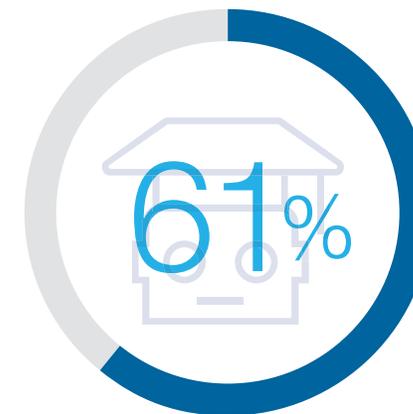
*Teaching humans to work with machines begins with “feeling” comfortable*



Employees need training and encouragement to feel comfortable working with intelligent machines



Intelligent machines will lead to higher-value work for our employees



Intelligent machines will have a meaningful impact on job descriptions and activities in the next three years

Source: Intelligent Automation Study. Question: To what extent do you agree with the following statements about human-machine interactions? “Agree” and “Strongly agree” responses.



# Staying competitive in the cognitive era will demand an effective use of Intelligent Automation

## Invest with intention

- Prioritize the landscape of emerging technologies
- Always align technology with business strategies and goals
- Investing intentionally requires detailed execution plans
  - ✓ Impact analysis
  - ✓ Communication plans
  - ✓ Change management

## Rebuild the business for automation

- Layering new technologies on top of old business processes is not productive
- Rethink processes for the cognitive age – optimize workflows for automation
- Envision the end; enable through prototyping; repair and scale

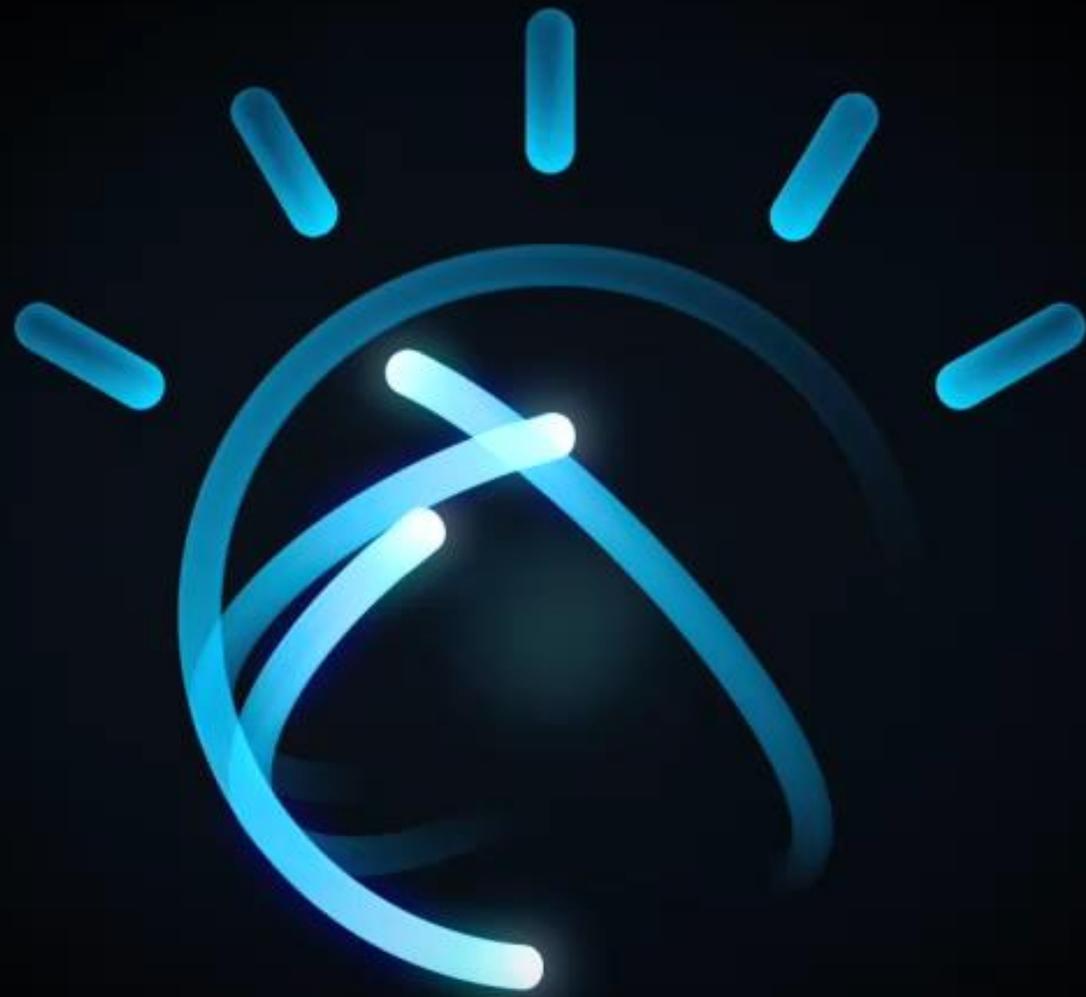
## Educate to automate

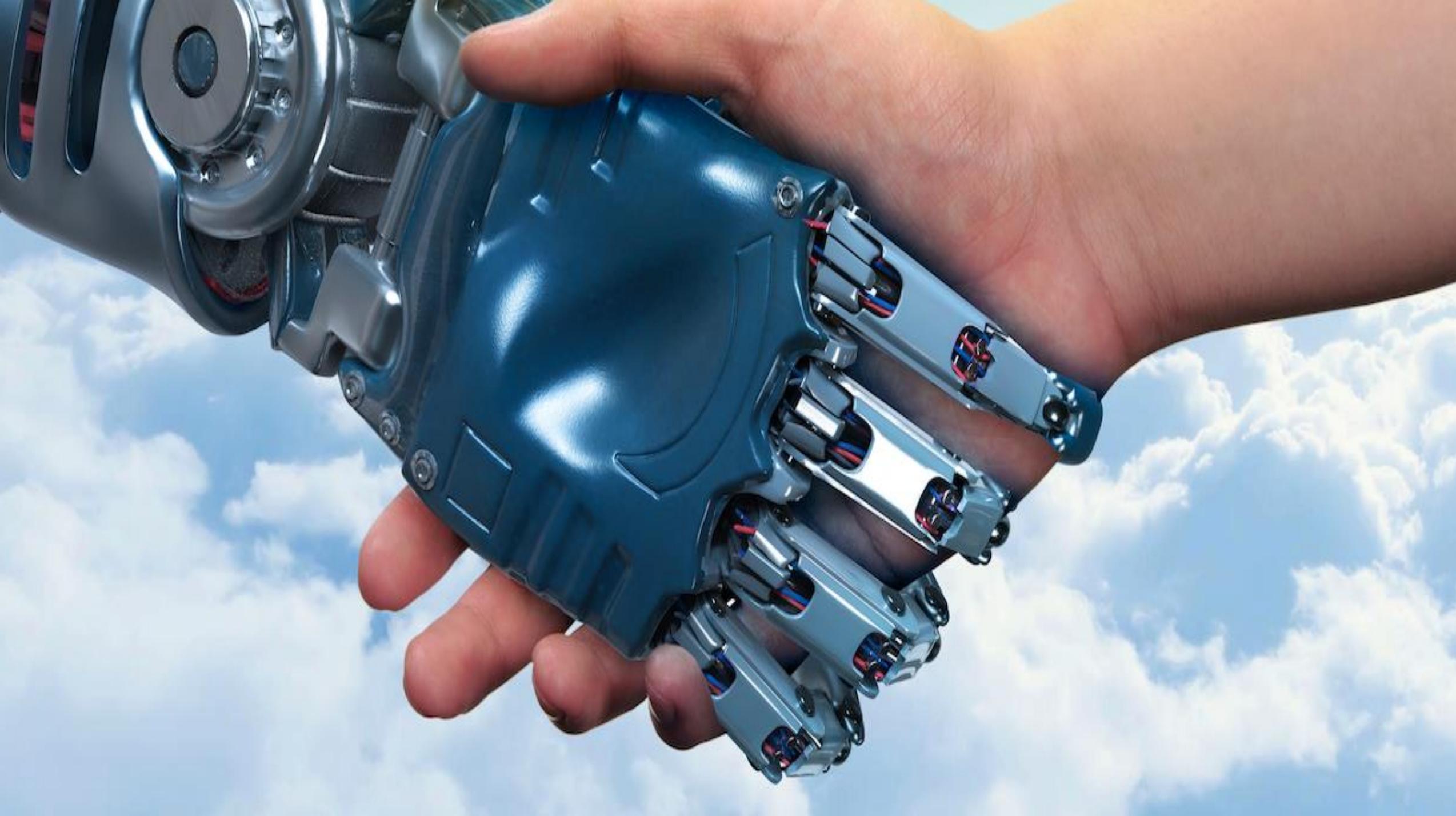
- Build agile, innovative workforces
- Encourage employees to think “big”, focus on higher-level tasks
- Participate in broader ecosystems to expand new ways of thinking and working





The Future of Finance and Accounting and the Changing Role of the CFO Includes Transformation through Cognitive Technologies and Artificial Intelligence





IBM