

Artificial Intelligence in the Enterprise: A Real-World Perspective

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Goal, Agenda and Methodology



Determine AI application usage in US businesses

What applications
What tools are used
Where AI apps are deployed
Goals and challenges



Online survey of 504 US-based businesses building and/or using AI applications

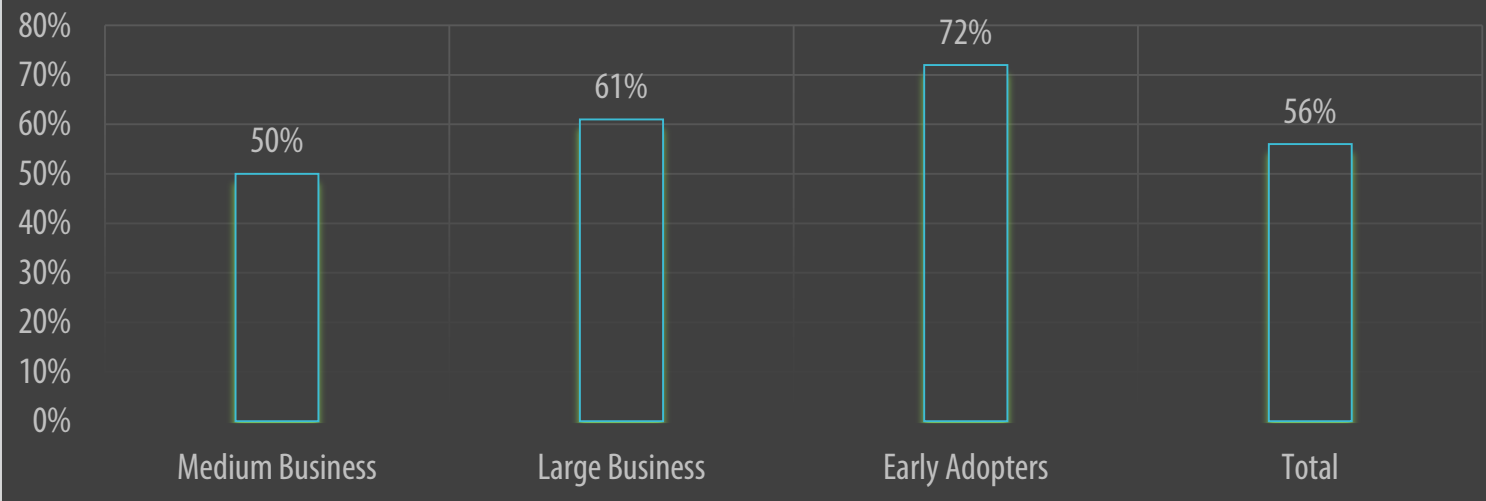
Medium and Large Businesses
Over 3,700 in initial sample

AI in Business is Very Real

- 18% of companies using AI apps
 - Within that group, 56% in full deployment
- Average number of AI apps per company is 9.9

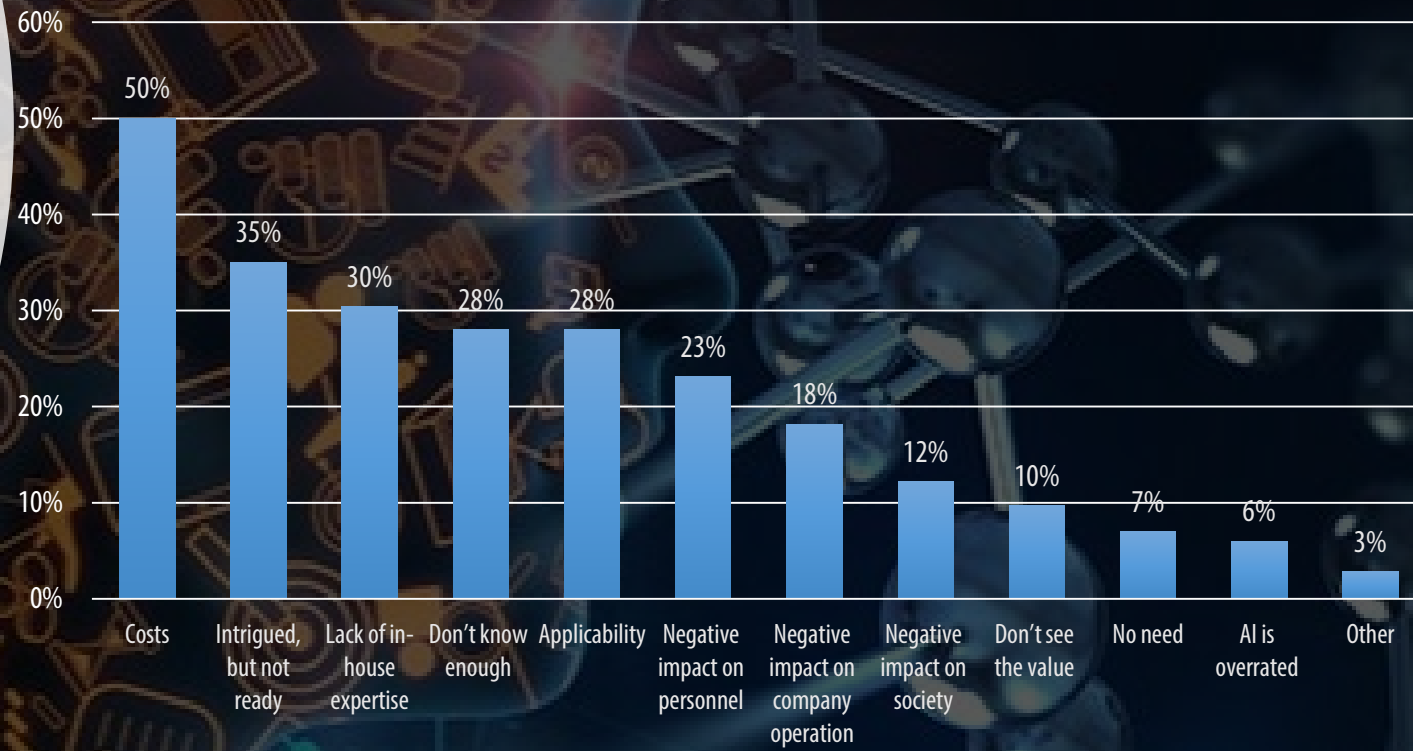


AI in Full Deployment



But Doubts Remain For Those Who Don't Use AI

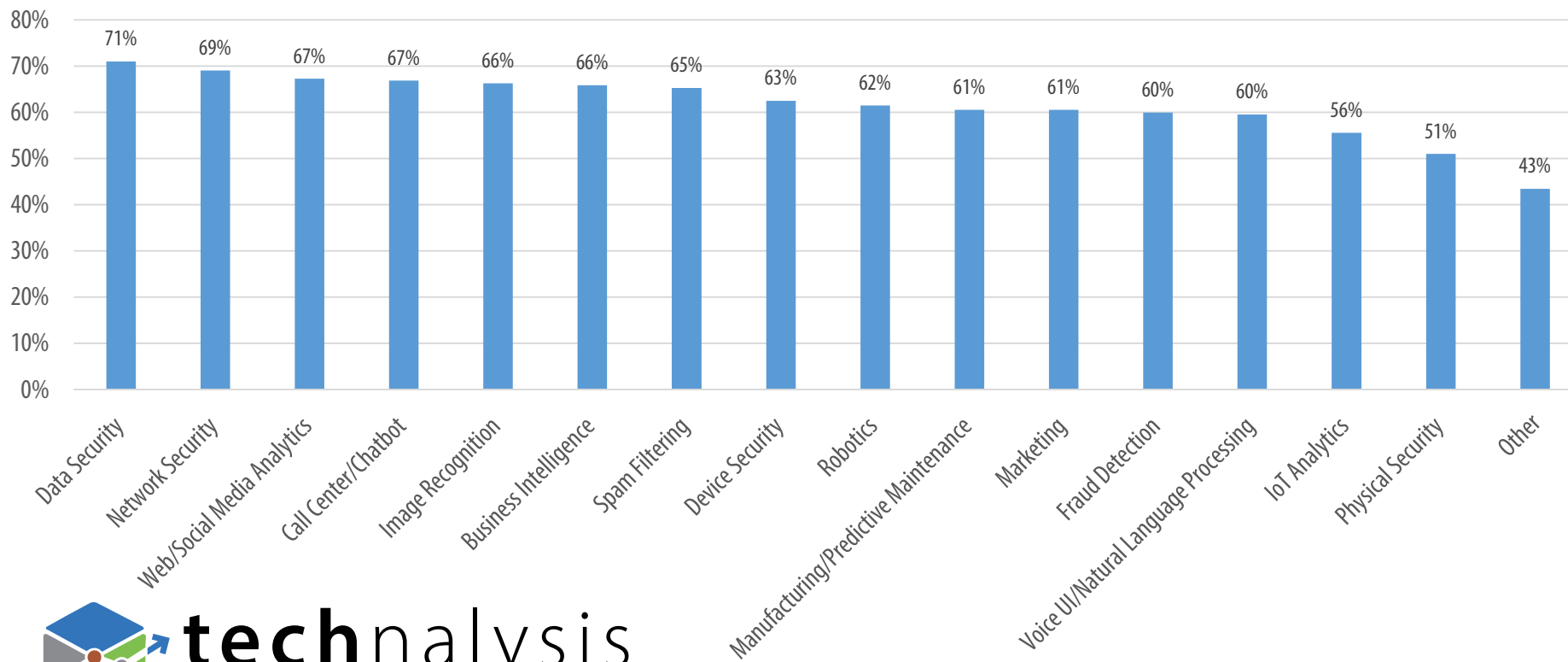
Non-AI Usage Concerns



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AI Applications Focused On Real World

Most Common AI Applications

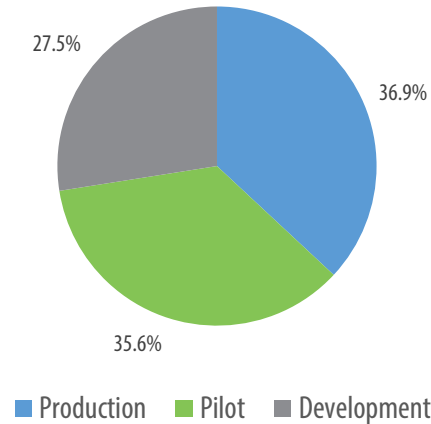


- Back office applications are most common
- New variations on “big data” analytics also strong
- Futuristic applications, like computer vision and voice, are growing

AI App Maturity

Varies Greatly

AI App Development Stages



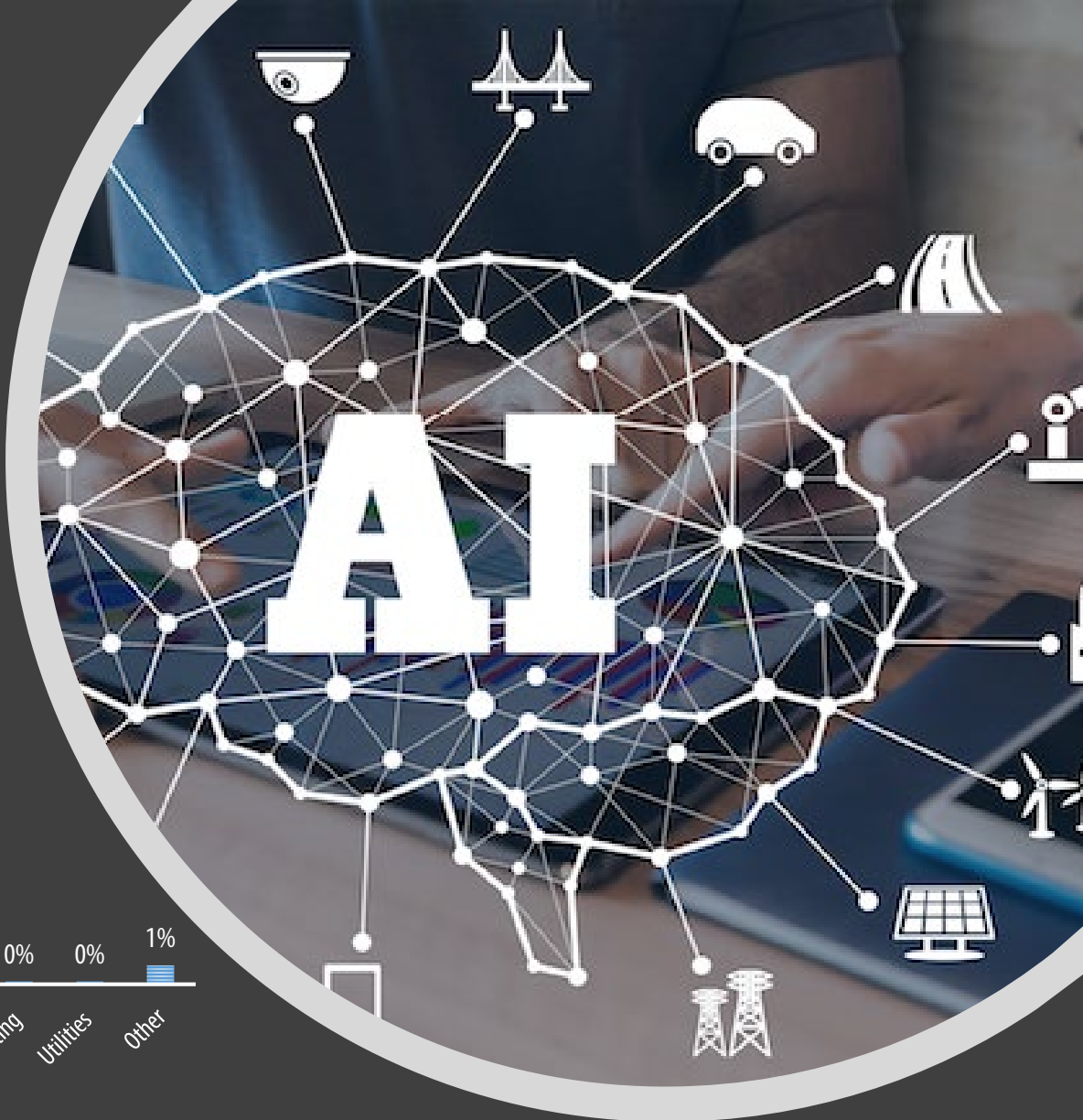
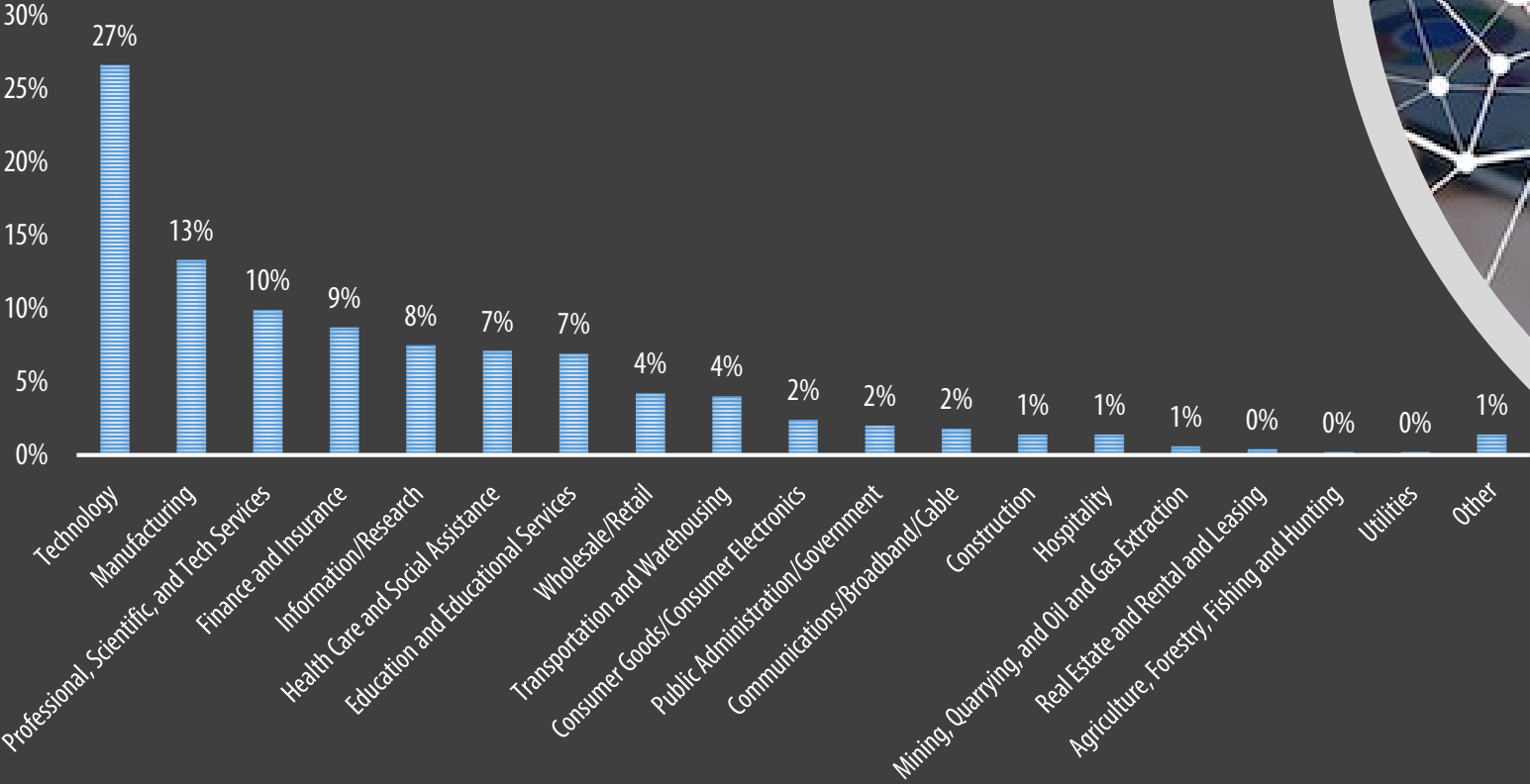
Top 5 AI Apps in Pilot
Business Intelligence
Voice UI/Natural Language Processing
Image Recognition
Web/Social Media Analytics
Data Security

Top 5 AI Apps in Production
Data Security
Spam Filtering
Network Security
Device Security
Call Center/Chatbot

Top 5 AI Apps in Development
Robotics
Manufacturing Efficiency/Predictive Maintenance
Call Center/Chatbot
IoT Analytics
Physical Security

Tech Companies Dominate Current AI User Base

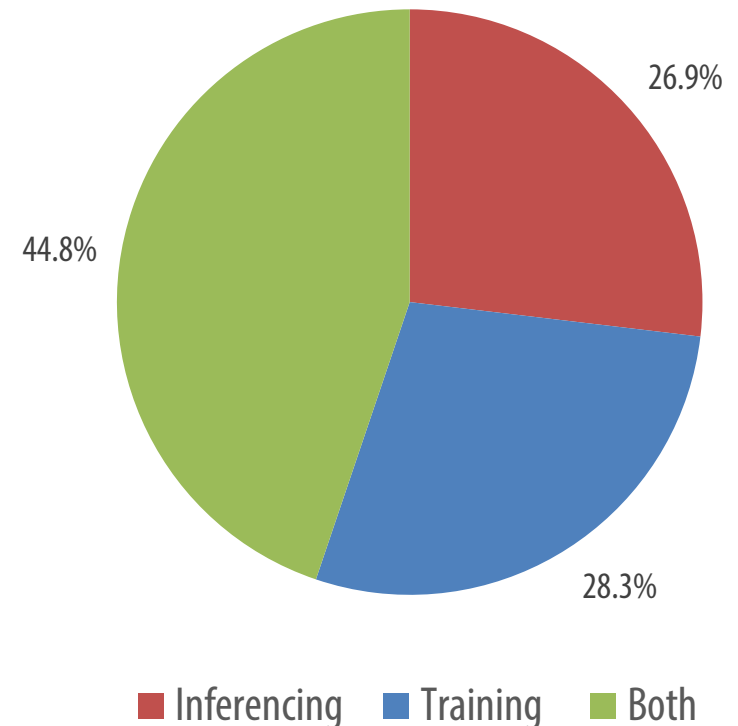
INDUSTRIES USING AI

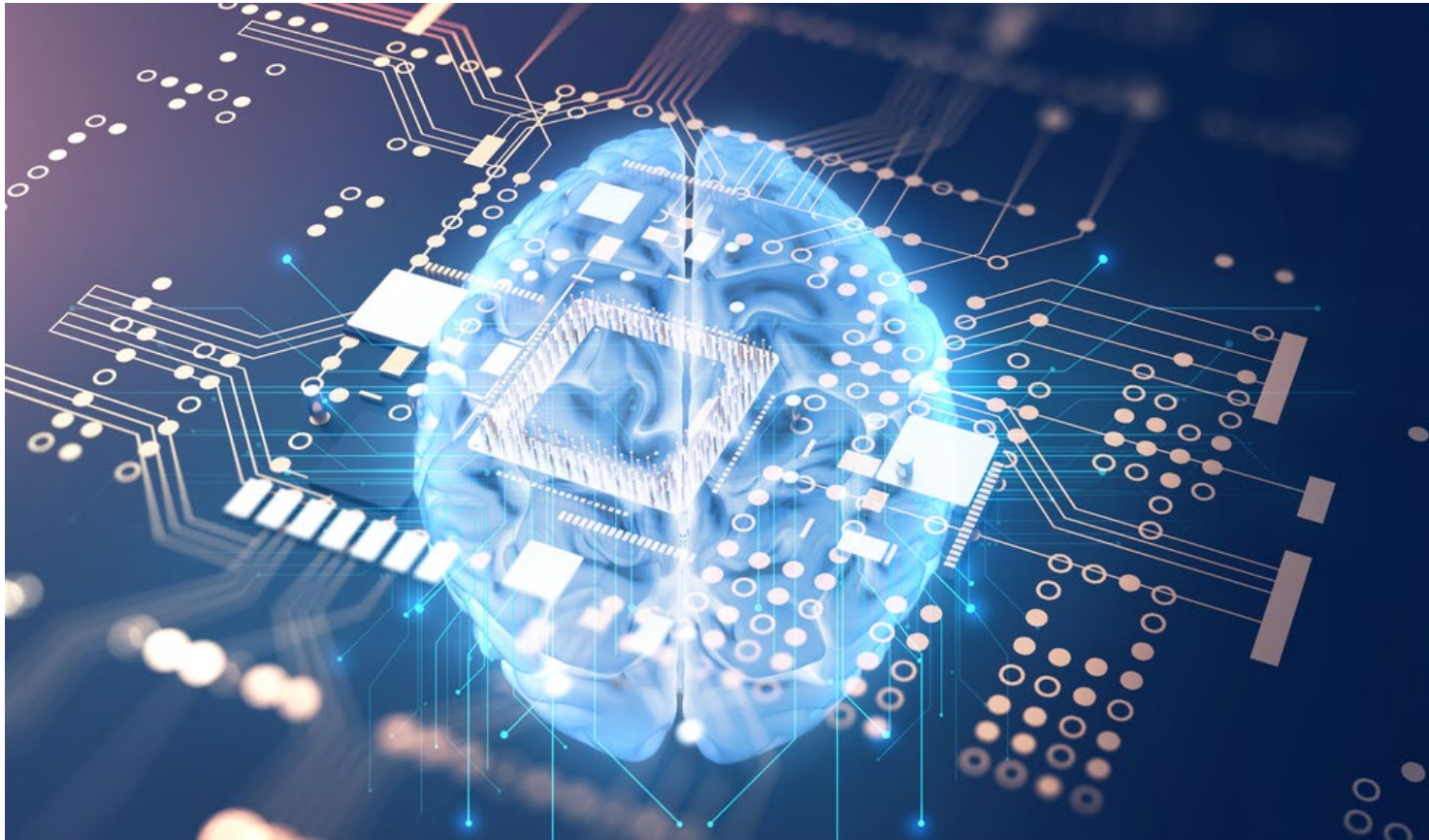


Inferencing vs. Training

- Most companies (73%) are building their own AI models and training them
- But over ¼ are relying on other models and only doing inferencing

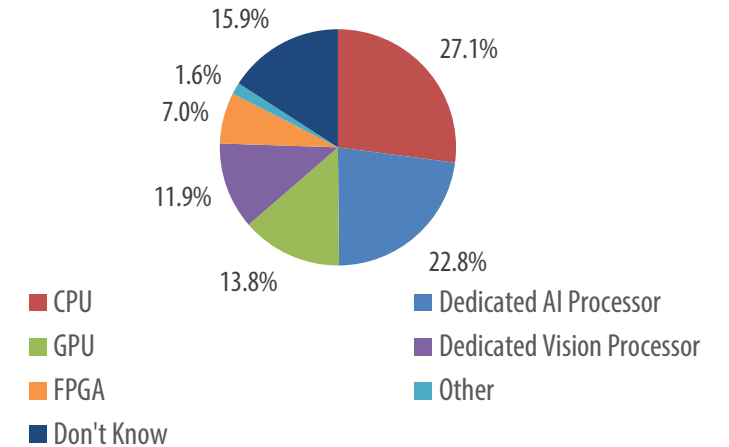
Inferencing and Training Usage



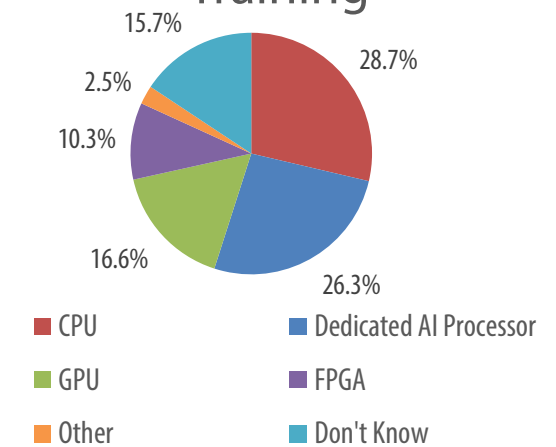


Chip Architectures for AI More Varied Than Expected

Chip Architecture Used For Inferencing



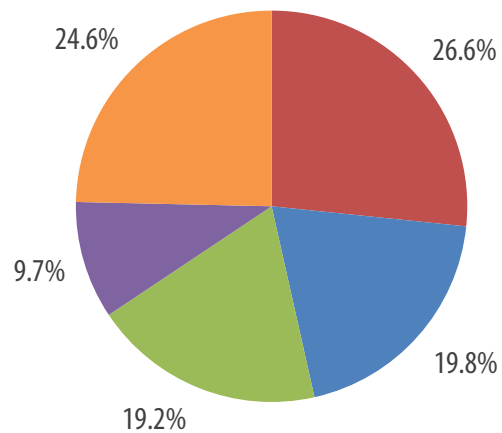
Chip Architecture Used For Training



Google Winning in the AI Cloud

But 25% Not Using Cloud For AI

Cloud Platform Usage

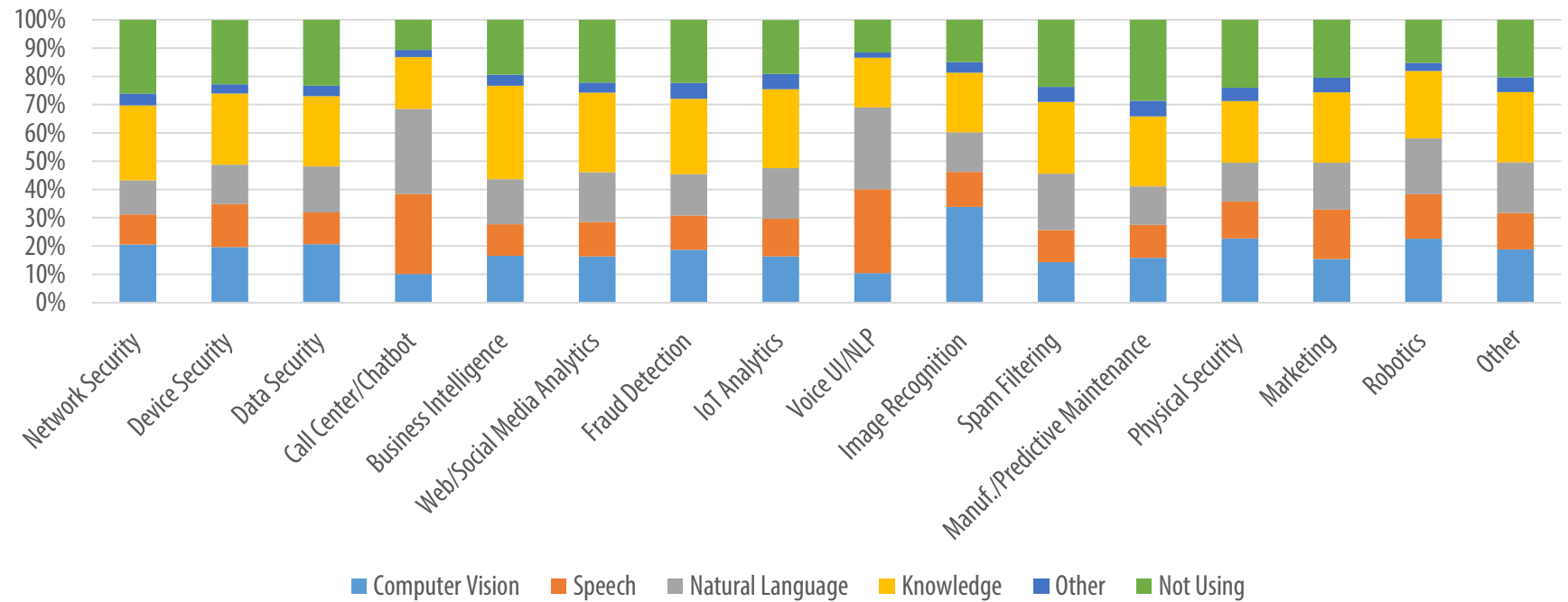


■ Google Cloud ■ Amazon AWS ■ Microsoft Azure ■ Other ■ Not Using

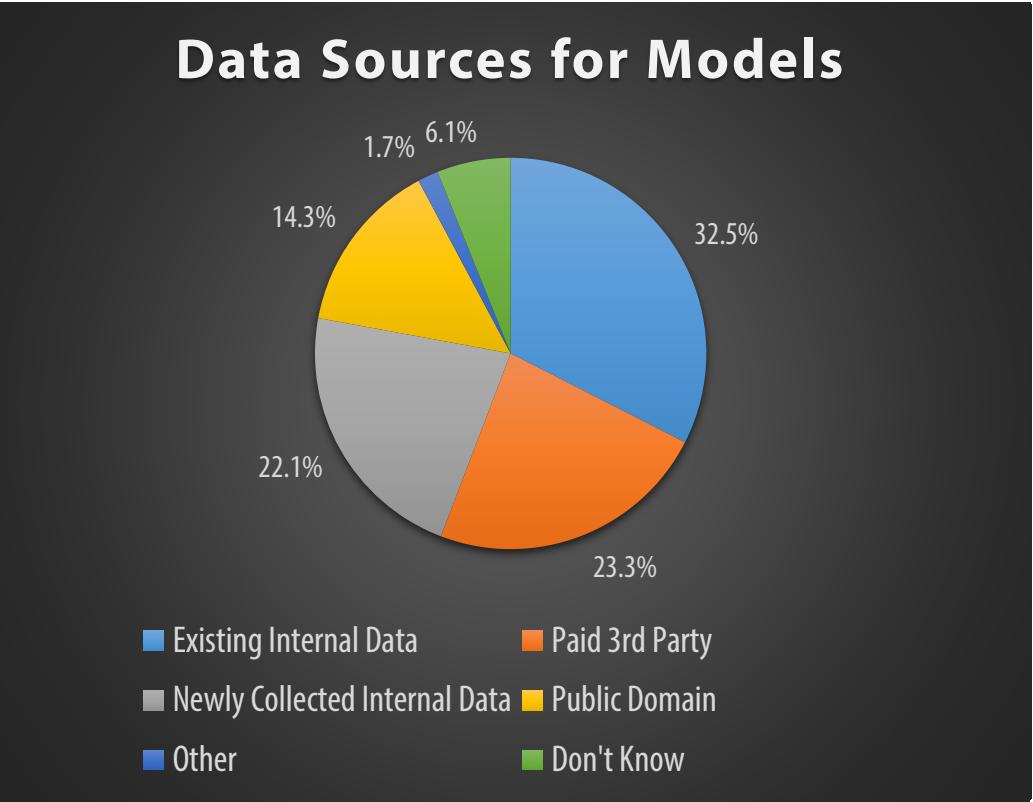


Cognitive Services Used by 80% of AI App Developers

Cognitive Services by Application



Data Sources for AI Models a Challenge



Interesting AI Application Facts

AI Application Users

- 84% Internal
- 54% External
- 38% for Both

Cloud Functions

- 38% Inferencing
- 30% Training
- 29% AI as a Service

Container Usage

- 37% Currently Using
- 32% Planning to Use
- 31% No Intention of Using



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FRAMEWORK USAGE VARIED

63% Split Across 10 Options
31% Don't Know

Top 5 AI Frameworks
TensorFlow
ONNX
MXNet
ResNet
Theano

Top 5 Apps Where AI is Core
Call Center/Chatbot
Image Recognition
Robotics
Voice UI/Natural Language Processing
Network Security

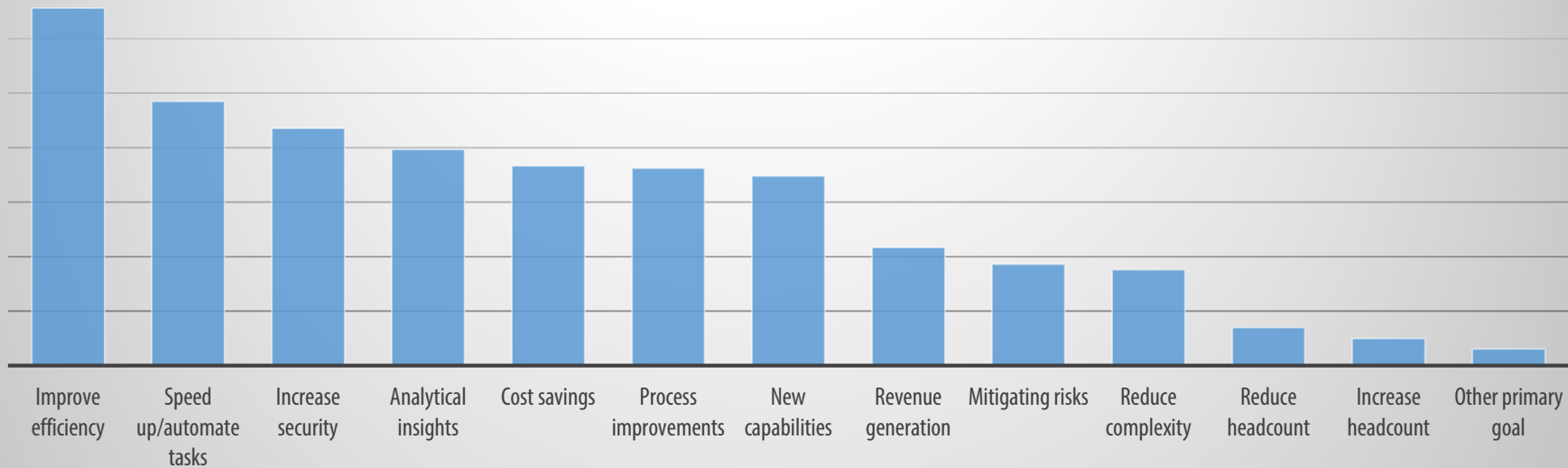
AI FUNCTIONS

55%

See AI as a
Feature

Improving Efficiency is Top Goal for AI

AI Goals

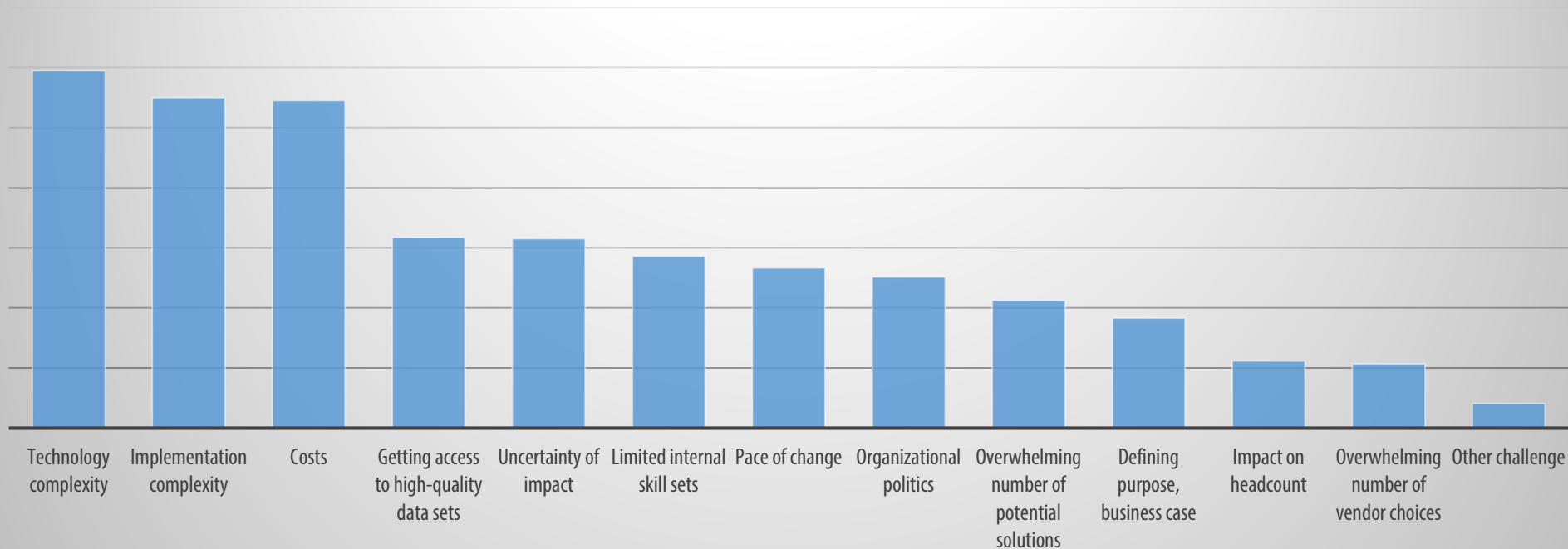


- Taking into consideration both the frequency of selection and the rankings, it's clear companies are hoping to gain efficiency and speed from deploying AI
- Security applications are also important



Complexity and Cost Remain Top Challenges for AI

AI Challenges

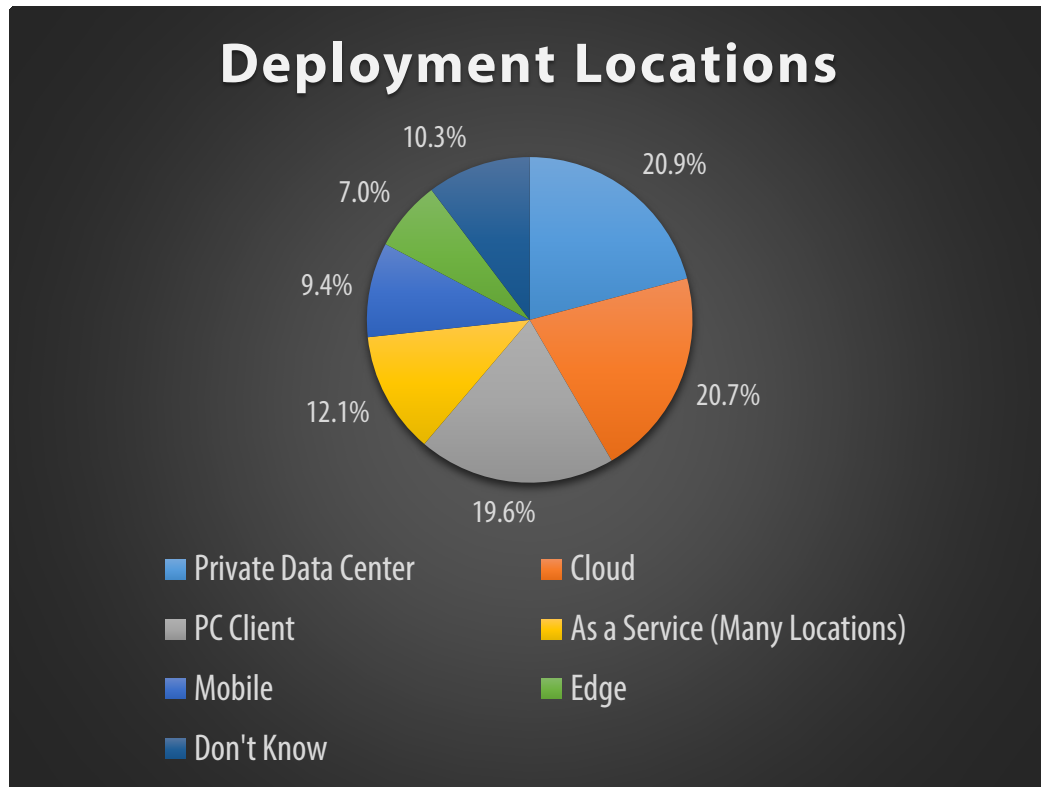


- Access to good data to train models and uncertainty of the full impact of AI are also big concerns



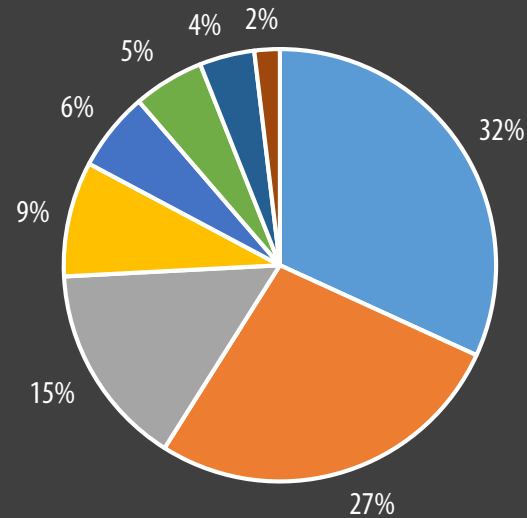
Private Cloud and Public Cloud Usage for AI Apps Nearly Identical

Mobile and Edge Still Small

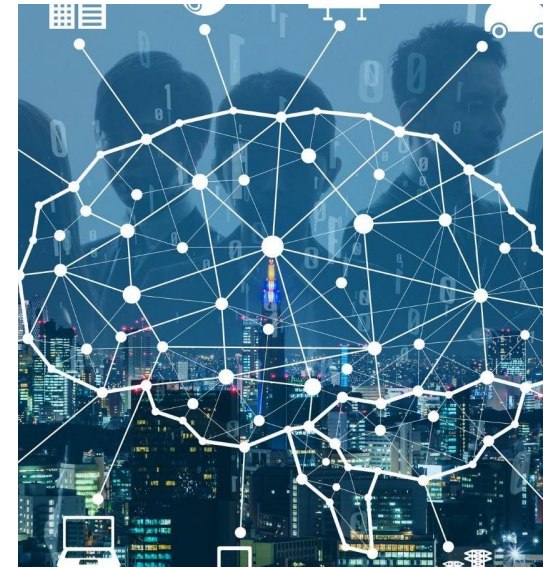


IT and Engineering Lead, but AI Apps Built By Many People

AI App Builders

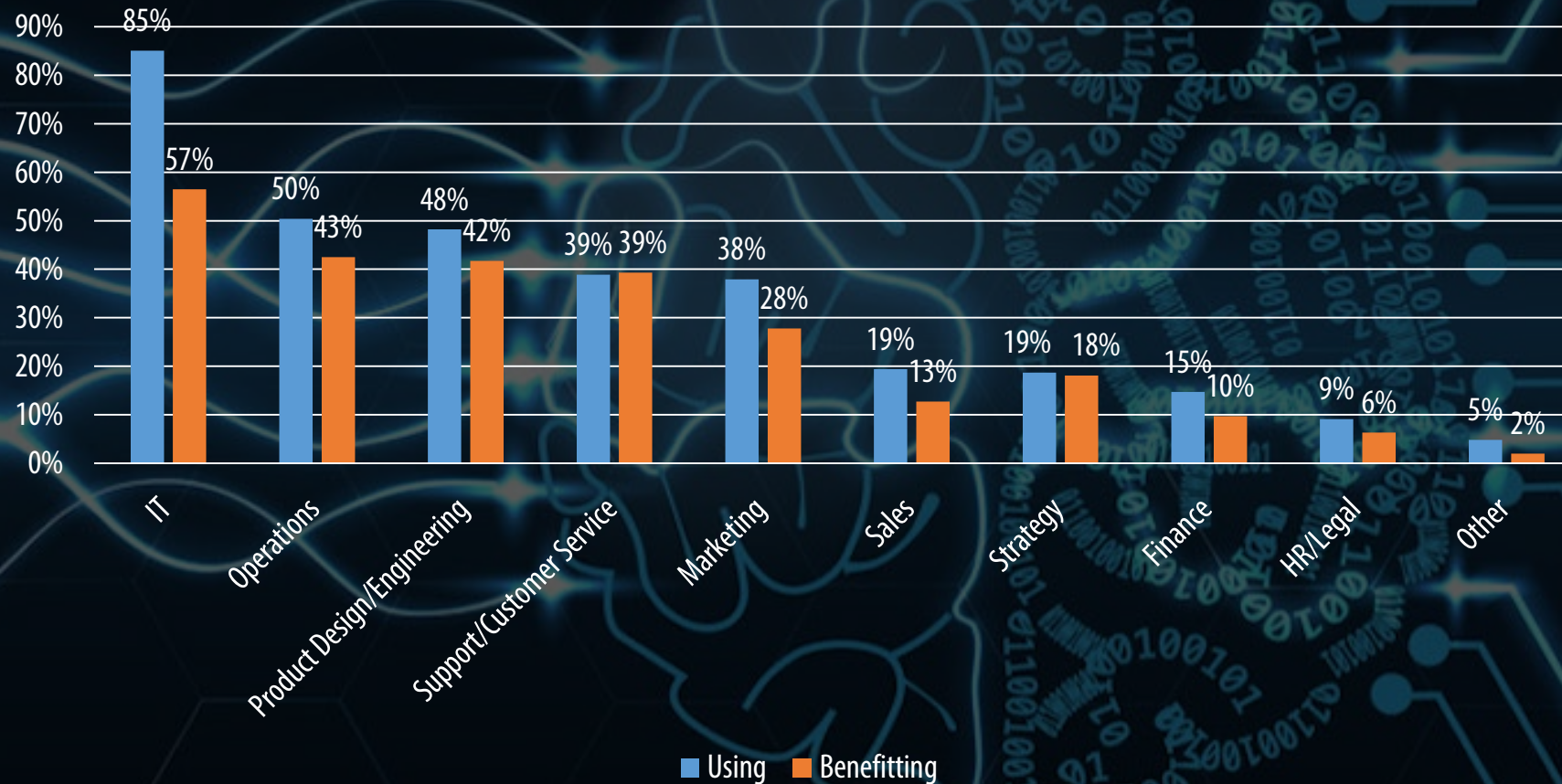


- In-House IT
- Contractors
- Large SI
- Specialty SI
- In House Engineering/Programming
- Tech Vendor
- AI Specialty Developer
- Other



IT, Operations and Engineering Top AI Department Users

Using vs. Benefitting



- Large gap in usage vs. value for IT
- Support and customer service getting best value for their efforts



Conclusions

- Most early AI efforts are more practical than futuristic
 - Security and efficiency improvements are key
- For many, AI applications are next generation analytics tools
- No easy AI solution
 - Technology requirements and deployments vary greatly by application
- Legitimate concerns exist, but there is a lot of excitement for the technology and its potential impact
- Costs and complexity remain big concerns



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For additional information and complete survey results, a 178-slide version of this report is available for purchase.



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