

FORRESTER®

Fuel Application Innovation With Cloud AI Services

A Faster Approach To Implementing AI

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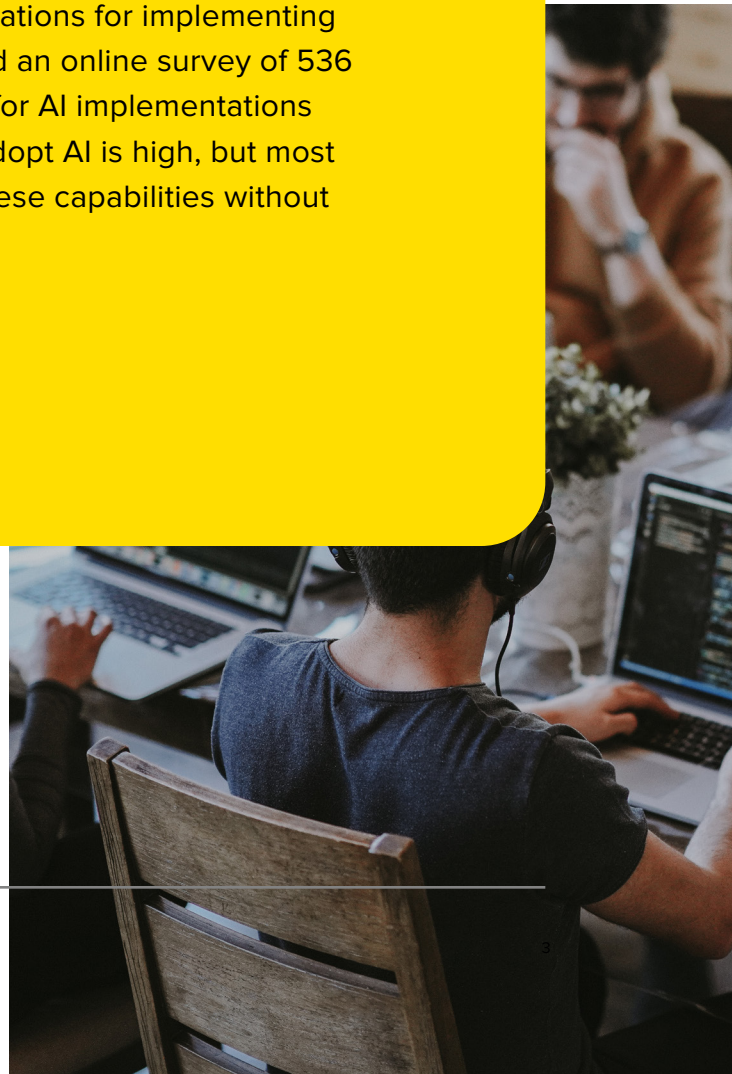


Executive Summary

Forrester believes that AI is an essential technology that every enterprise must implement in its applications to stay competitive. The possibilities with AI are endless, but organizations can start with five core use cases to realize value quickly. These use cases include knowledge mining, document process automation, speech transcription and analytics, machine translation, and conversational AI.

The key challenge facing enterprises is not that they need these AI capabilities but that they need to implement these functions faster than competitors. Do they hire a bevy of data scientists? That's impossible and not always needed thanks to the availability of AI capabilities as cloud services. Using these services, enterprise developers, not data science experts, can quickly enhance their applications with AI. The result: Enterprises can harness their existing software development teams to infuse applications with AI to drive innovation and create competitive differentiation.

In October 2021, Microsoft commissioned Forrester Consulting to evaluate the appetite, challenges, and readiness of organizations for implementing AI capabilities in applications. Forrester conducted an online survey of 536 US-based technical decision-makers responsible for AI implementations at their companies. We found that eagerness to adopt AI is high, but most organizations want an easier way to implement these capabilities without needing a team of data scientists.



Key Findings



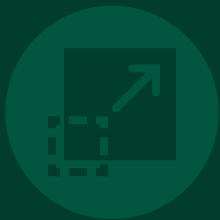
Eighty-four percent of technical decision-makers see significant opportunities with AI and believe they must implement AI to maintain a competitive advantage in their industry.



Embedding proven AI capabilities (e.g., knowledge mining, document process automation, speech transcription and analytics, machine translation, and conversational AI) into applications can help spur innovation and drive better customer and employee experiences with applications.



More than 50% of technical leaders don't believe their organizations have the right resources in place to add AI capabilities to their applications. The quick path to AI capabilities lies in cloud AI services, which give organizations access to responsibly built AI capabilities without the need for extensive data science and development skills.

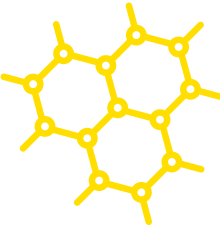


Cloud AI services are easier to use by developers and scale elastically to foster greater AI adoption, which in turn will drive positive outcomes for customers, employees, and the business.

AI Is Critical To Long-Term Business Success

AI is ready to roll. In fact, 83% of technical decision-makers consider the opportunity with AI to be bigger today than it has ever been. More than 70% of technical decision-makers recognize that AI is no longer experimental and has real business value. Even more, 84% agree that their businesses must implement AI to maintain a competitive advantage in their industry.

AI is fast becoming essential. More than 40% of technical leaders expect AI to play a critical strategic role in their business (see Figure 1). Given this growing importance of AI, it is not surprising that 61% expect the usage of AI in applications to increase significantly over the next one to two years.

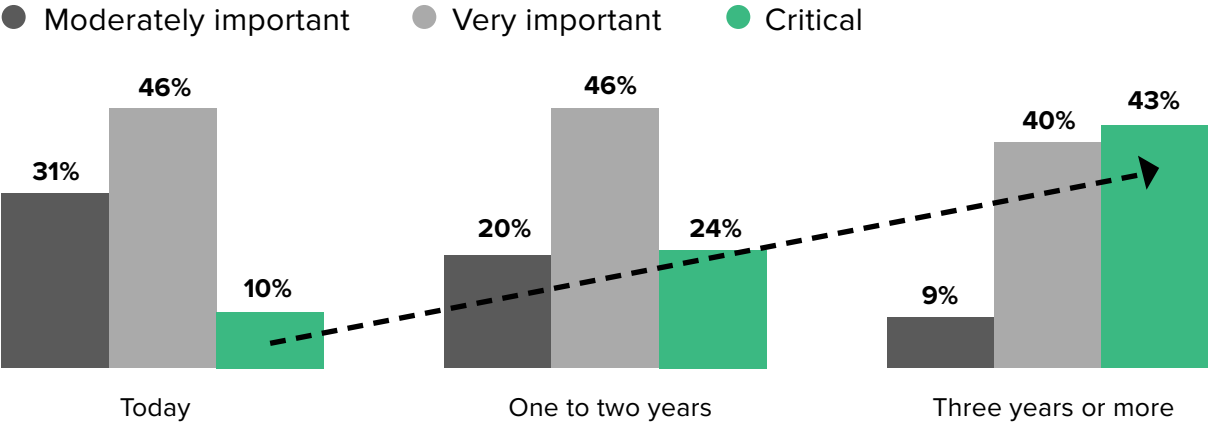


83% of technical decision-makers consider the opportunity with AI to be bigger today than it has ever been.

Figure 1

AI Is Critical To Long-Term Business Success

“What is, and what do you expect to be, the strategic importance of AI in applications to the current and long-term success of your company?”



Base: 536 technical decision-makers responsible for AI implementations in US-based companies across various industries
Source: A commissioned study conducted by Forrester Consulting on behalf of Microsoft, October 2021

ENABLE ENTERPRISE AI THROUGH FIVE KEY USE CASES

On average, technical decision-makers ideally want to see at least 55% of their core business applications and customer-facing applications leveraging AI functionality. Nearly 75% believe that every application could benefit from AI to help spur innovation and drive better customer and employee experiences within applications.

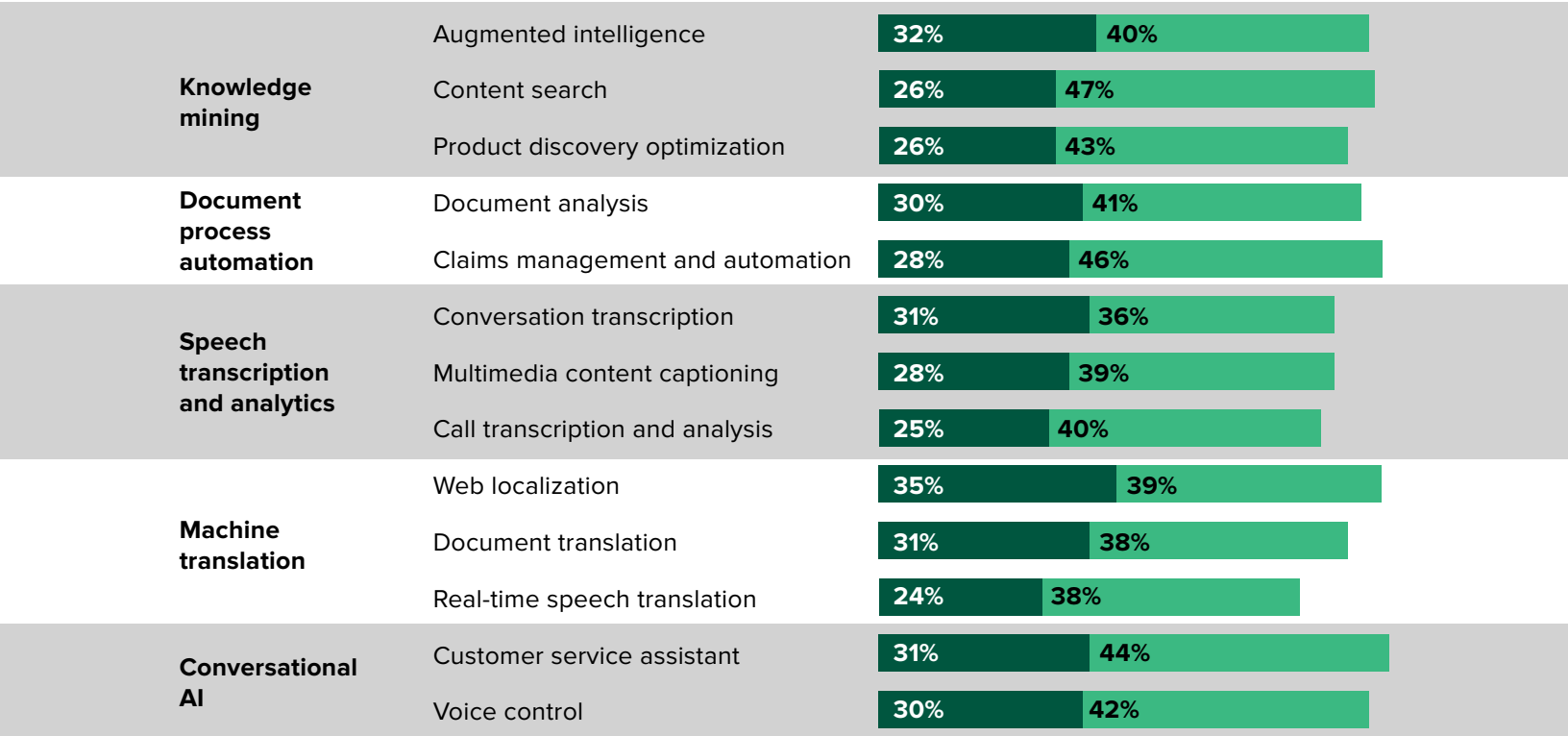
While the possibilities for AI within applications are endless, companies looking to get started with AI should focus on the following use cases where AI's value has already been proven (see Figure 2):

Nearly 75% of technical decision-makers believe that every application could benefit from AI to help spur innovation and drive better customer and employee experiences within applications.

Figure 2

AI Is Being Used For A Variety Of Use Cases

● High usage ● Moderate usage



Base: 536 technical decision-makers responsible for AI implementations in US-based companies across various industries
 Source: A commissioned study conducted by Forrester Consulting on behalf of Microsoft, October 2021

- **Knowledge mining.** Much of an organization's knowledge is embedded in terabytes and sometimes petabytes of data from databases, documents, images, drawings, and handwritten/hand-drawn documents — much of which is unstructured data. It is incredibly difficult for any person to find the precise information they are looking for by wading through all this content. AI-powered knowledge mining first analyzes documents with AI (e.g., using computer vision and optical character recognition [OCR]) to structure content. It can then sift through all this information at a digital speed and make it available to anyone via a search query or even an application-initiated, automated search to proactively serve the user.
- **Document process automation.** The world runs on documents whether digital or hard-copy. Documents convey agreements, transmit information, notify parties, and bring order and structure to business. AI in the form of OCR for text extraction combined with natural language processing for understanding can pull important information such as terms, pricing, and much more to automate actions in business processes and route to the right people to handle exceptions. Wherever a document, however simple or rich, enters a business process, there is a potential use case for document process automation. Combined with machine translation, this can be even more powerful for global organizations.
- **Speech transcription and analytics.** People speak, and AI can listen and transcribe that into the written word. AI can caption everyday interactions. The use cases range from giving medical, legal, and inspection professionals a hands-free way to capture important information to transcribing any spoken interaction to the written word. Going further than just transcription, some AI services can provide analytics to add important context to the transcription such as number of minutes logged per speaker.
- **Machine translation.** AI understands and almost instantly translates popular spoken languages from one to another, making cross-region business more accessible. The use cases for global workforce and customer bases mean information travels further and can reach more native speakers at a much faster pace by enhancing manual translation.

- **Conversational AI.** Human conversations are contextual. As such, conversational AI enables enterprise developers to create rich, contextual digital assistants to speed up the discovery of information for both customer use cases, such as support, and employee use cases, such as company policy questions. Conversational AI provides customers and employees with a rich experience with AI in a natural language interaction.

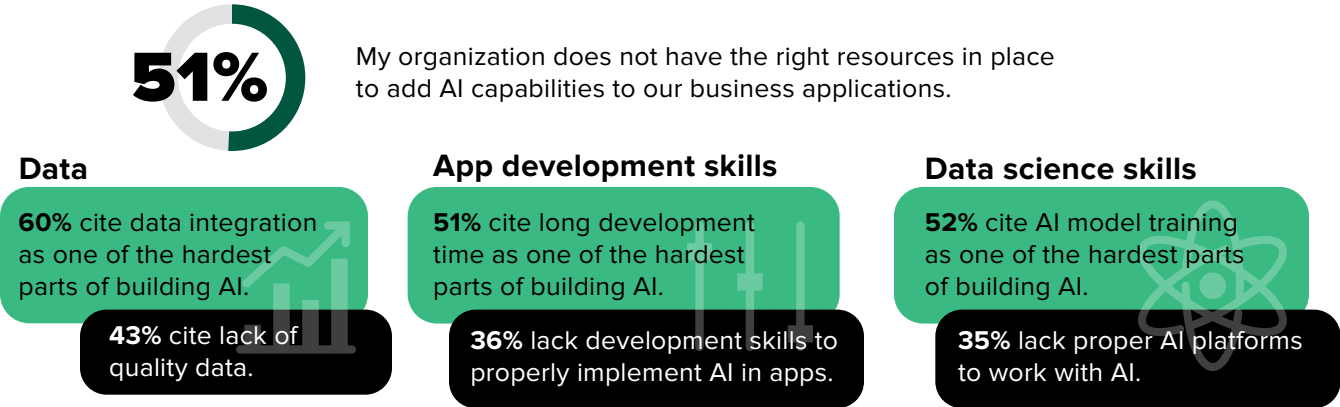
Technical Leaders Seek To Accelerate AI Implementation

Our survey found that most companies are not using AI in the majority of their applications. But given the growing number of AI capabilities and use cases to deploy, the number of apps using AI is expected to grow substantially. The growth won't be immediate because 60% of technical decision-makers anticipate it will take their company upward of one year to achieve their ideal state of AI deployment. This timeline is due to several development and execution challenges that organizations need to first address to streamline AI deployment.

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While organizations want to move full steam ahead with AI, the path is challenging. Roughly two-thirds (64%) of technical decision-makers are not fully confident in their ability to meet their organization's AI goals based on current resources. More than half (51%) agreed that their organization does not have the right resources in place to add AI capabilities to their business application. This low confidence can be attributed to three primary challenges (see Figure 3):

Figure 3
Technical Leaders Grapple With Three Primary Challenges When Building AI

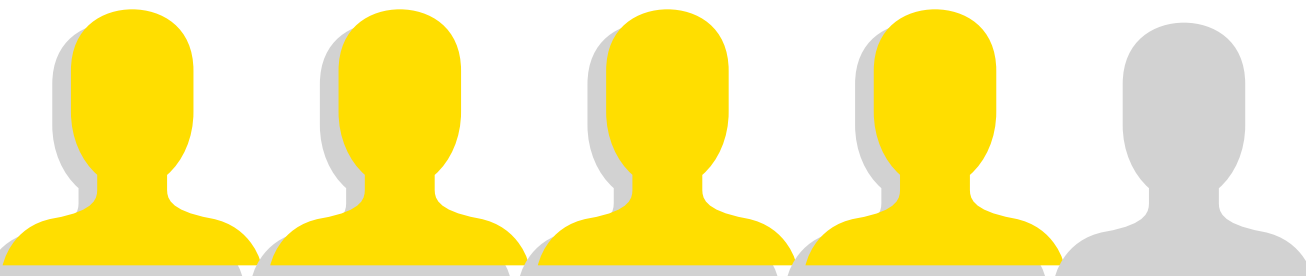


Base: 536 technical decision-makers responsible for AI implementations in US-based companies across various industries
Source: A commissioned study conducted by Forrester Consulting on behalf of Microsoft, October 2021

- **Lack of quality data.** AI is only as good as the data used to train the models. Poor data quality is a major deterrent to implementing AI, and 43% of technical decision-makers struggle with it. Most organizations likely already have the right data collected somewhere within their organizations, but 60% struggle with integrating the data into a form that will be useful for training AI models.
- **Lack of proper application development skills.** Nearly eight in 10 technical decision-makers believe that building AI into applications requires highly specialized development skills, and more than one-third say that their lack of development skills has prevented them from implementing more AI capabilities across their organization. As a result of these challenges, 51% cite long development time as one of the hardest parts of building AI into business applications.
- **Lack of proper data science and machine learning experience.** More than 75% of technical decision-makers agree that building AI capabilities into applications requires extensive data science/machine learning experience, and 52% consider AI model training to be the hardest part of implementing AI. This could partially stem from data quality issues, but it also reflects the data science skills gap that many organizations face when contemplating AI.

In light of all these challenges, technical leaders are eager to find easier methods to deploy AI in applications — 81% say that they would use more AI in applications if it were easier to develop and deploy.

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Cloud AI Services For Applications Are Innovation On Tap

Organizations looking to implement AI capabilities faster need a better way to tackle AI development and deployment challenges. Waiting on current software providers to add AI into new versions, hiring more development and data science talent, or even purchasing new solutions won't deliver the more immediate capabilities that organizations need. Technical leaders are willing to spend more on AI, with 65% increasing investments, but they need to ensure those investments go where they'll have the greatest impact.

What organizations need are prebuilt, configurable AI cloud services. These services address the data, development skills, and data science skills challenges that technical teams currently face. With data and modeling issues being one of the hardest parts of deploying AI cited by respondents, prebuilt AI services can enable organizations to bypass much of the modeling work and move directly to deployment. Cloud AI services allow developers to access a depth of AI capabilities via APIs for fueling application innovation without requiring data science experience. This enables faster deployment of AI capabilities by giving organizations access to AI models that have been responsibly built and tested.

Technical leaders are becoming more aware of cloud AI services: 45% of those surveyed indicated that using cloud AI services rather than developing from scratch is a key step for enabling better AI deployment. When asked what technical benefits they would expect to see by having access to cloud AI services to deploy to applications, more than two-thirds of technical decision-makers cited the following (see Figure 4):

Figure 4

Cloud AI Services Alleviate The Challenges Of Current AI Development Approaches

Current AI deployment challenges



Data and modeling



App development skills



Data science skills

Advantages of cloud AI services



Responsibly built and tested AI models



Prebuilt, configurable AI services that don't require data science experience



Ongoing support from cloud partners

Expected benefits from cloud AI services adoption

67%

Greater options of potential AI capabilities and functions

67%

Faster deployment time

66%

Better support/troubleshooting

60%

Greater scale of implementation across multiple apps

48%

Less reliance on specialized development skills

Base: 536 technical decision-makers responsible for AI implementations in US-based companies across various industries
Source: A commissioned study conducted by Forrester Consulting on behalf of Microsoft, October 2021

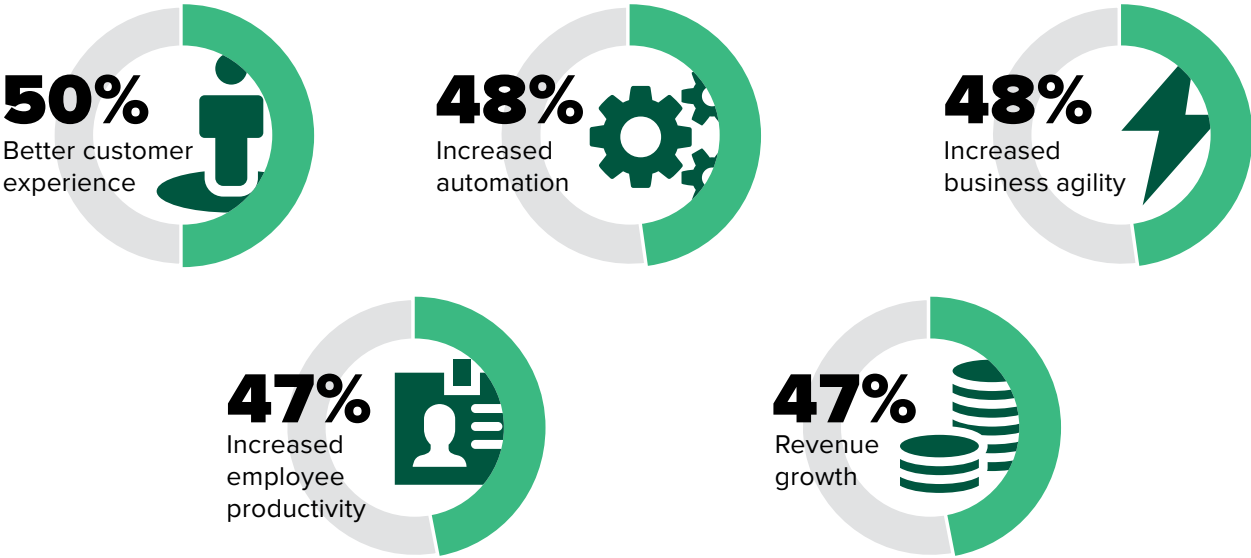
- **Greater options for AI capabilities and scale across multiple apps.** Utilizing cloud AI services broadens the scope of what organizations can do with AI. These services allow organizations to quickly explore and deploy multiple AI functions to various applications rather than focusing efforts on developing a small set of AI capabilities and apps based on limited resources.
- **Faster deployment time.** Technical teams must be able to implement AI capabilities quickly, or the business risks falling behind competitors and losing customers. Customer and business needs can change quickly, and businesses must constantly battle to stay current and relevant in the market. Cloud services provide the agility development teams need to bring AI to applications faster because they don't have to wait on data science teams to build AI models.

- **Better support/troubleshooting.** Building AI is a science, literally. Getting it right takes practice, and having the support from your cloud provider is invaluable. Leaning on cloud partners is a cost-effective and fast way to alleviate some AI skills gaps that organizations have. That is why 79% of technical leaders intend to leverage the cloud to make the deployment of AI easier.

Improving AI Implementation And Use Drives Business Success

Cloud AI services help drive application innovation by enabling organizations to embed common AI capabilities more easily into daily workflows. As innovation improves through more effective implementation of AI in applications, technical decision-makers expect to see a number of benefits spanning across customers, employees, and ultimately the business (see Figure 5).

Figure 5
Top Business Benefits Of More Effective Implementation And Use Of AI In Applications



Base: 536 technical decision-makers responsible for AI implementations in US-based companies across various industries
Note: Showing top 5 responses.
Source: A commissioned study conducted by Forrester Consulting on behalf of Microsoft, October 2021

Key Recommendations

AI is real and can play a critical role in driving application innovation and competitive differentiation. Nearly 75% of technical decision-makers believe that every application could benefit from AI. However, the road to AI doesn't need to be burdened with advanced data requirements and endless development cycles. Through cloud AI services, development teams can leverage configurable AI capabilities that they can implement quickly and at scale to meet a variety of application requirements.

For all companies looking to get started with simple AI use cases, or even those already using AI, Forrester recommends the following important steps toward simplifying and strengthening your deployment of AI in applications:

Understand the availability of cloud AI services.

All major cloud service providers offer AI services that are prebuilt models for key AI use cases. These services are accessible by API calls, configurable, and in many cases can be enhanced with your own enterprise data. Understanding these services and the use cases they serve will help prioritize AI use cases.

Prioritize the most widely applicable AI use cases.

There is so much potential for AI, but starting with a few priority use cases will enable development teams to deliver faster, scalable results. Use cases around knowledge mining, document process automation, speech transcription and analytics, machine translation, and conversational AI are all accessible via specialized cloud services and ready for quick deployment via APIs.

Activate your software developers.

Most enterprises associate AI development with data science teams. However, data scientists are not necessary when using cloud AI services because the vendor's AI experts prebuild them. Thus, enterprises can go straight to adding these AI capabilities to the software requirements in the agile development process.

Appendix A: Methodology

In this study, Forrester conducted an online survey with 536 technical decision-makers who were manager-level or above and responsible for AI implementations at their company. We fielded this survey to enterprises with \$500 million or more in revenue in the US in various industries. The study was completed in October 2021.

Appendix B: Demographics

COUNTRY	
US-based companies	100%

COMPANY SIZE (REVENUE)	
\$500M to less than \$1B	41%
\$1B to less than \$5B	40%
\$5B or more	19%

TITLE	
C-level executive	16%
Vice president	28%
Director	35%
Manager	20%

ROLES	
IT/technical leader	42%
Analytics/data science	24%
Engineering/product development	21%
Executive leadership (CXO)	14%

COMPANY SIZE (EMPLOYEES)	
100 to 499	2%
500 to 999	15%
1,000 to 4,999	41%
5,000 to 19,999	26%
20,000 or more	15%

INDUSTRY (TOP FIVE)	
Technology and/or technology services	14%
Financial services and/or insurance	9%
Manufacturing and materials	9%
Healthcare	7%
Retail	7%

Note: Percentages may not total 100 because of rounding)

A 3D rendered dark, faceted cube, possibly made of glass or polished metal, is centered in the frame. The cube has a complex, multi-faceted top surface. The word "FORRESTER" is printed in a white, serif font on the front face of the cube. The background is a smooth gradient from a dark teal at the top to a lighter, warm orange-brown at the bottom, suggesting a light source from the right. The cube casts a soft shadow on the surface below it.

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