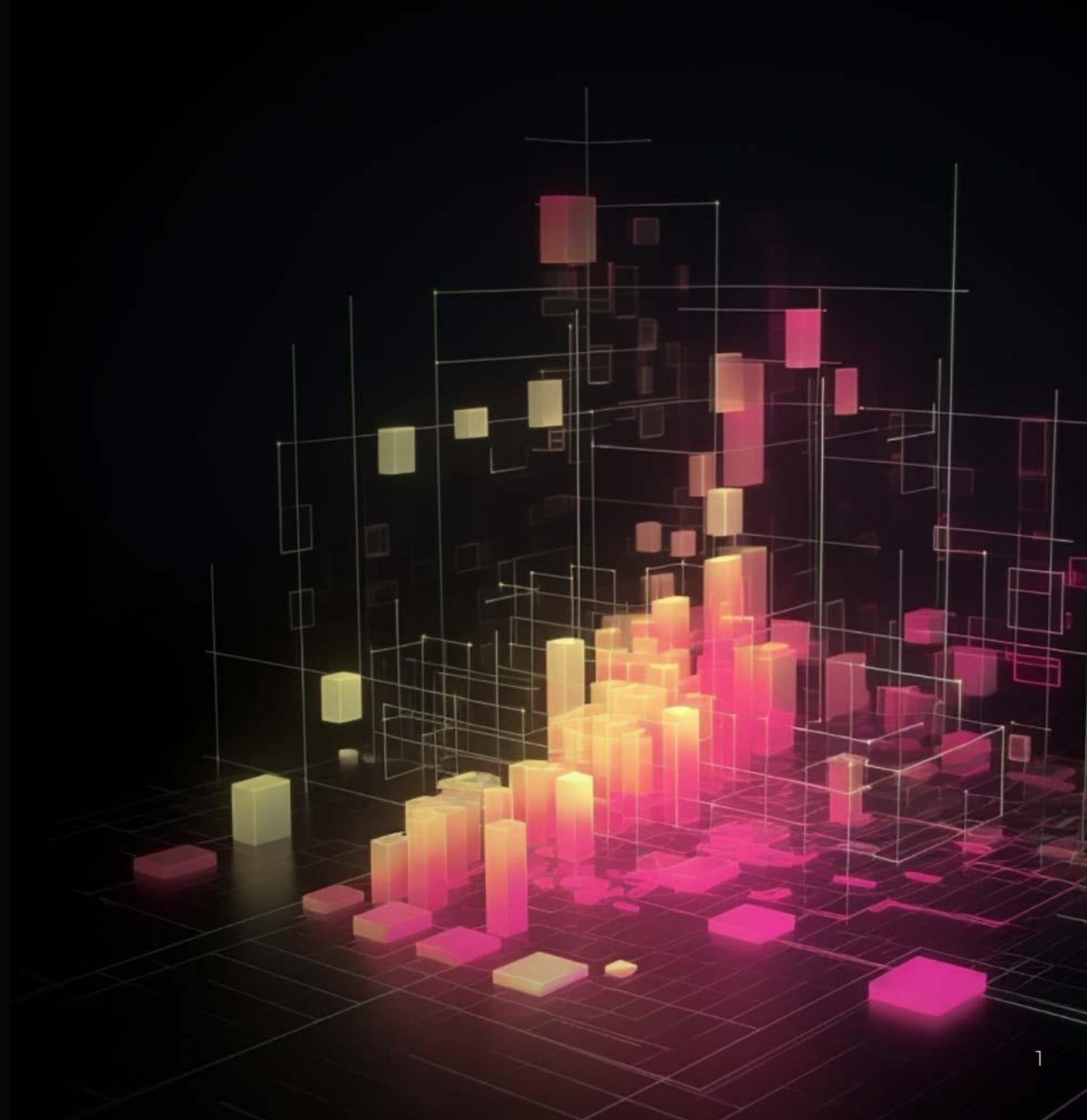




# State of AI in the Enterprise **2023 Report**

March 2023 | Survey



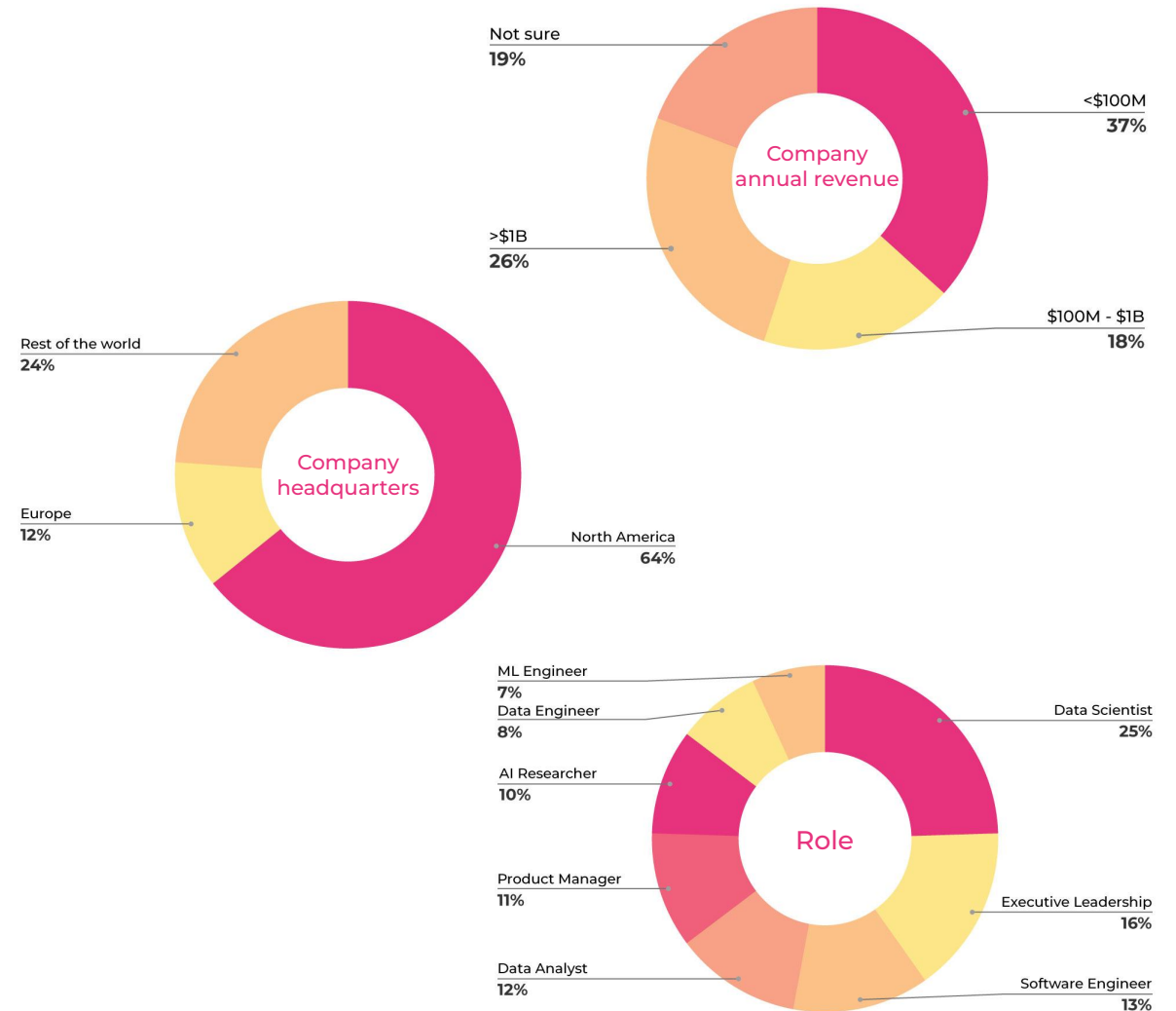
# Insider perspectives discern current practices and leading trends with AI technology, revealing an **optimistic exploration of systemic integration into business practices**

Enterprises can use Artificial Intelligence (AI) and Machine Learning (ML) techniques to make use of their growing amounts of data. Advances in AI enable them to analyze data at scale in order to gain valuable insights for more informed decision making, automate processes, provide enhanced customer experiences and more. AI has become part of the overall business strategy for many companies and 78% of data science practitioners and managers think that their company will gain competitive advantage through AI in the next 2-3 years.

This report aims to identify current and future trends, as well as the main challenges that companies face when implementing AI solutions. The results provide insights to researchers, practitioners, executives, and solution providers, enabling them to better allocate resources to support companies in addressing their challenges with AI.

The findings are based on a public survey of the DSS community, including 109 responses in total, reflecting experience with companies across various industries, 40% being from software or high-tech industries. Through an insider perspective, this report helps differentiate media trends from on-the-ground implementations and further clarifies intended AI investments in the immediate future.

## Profile of survey respondents



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# 01

## Current and future **AI adoption**





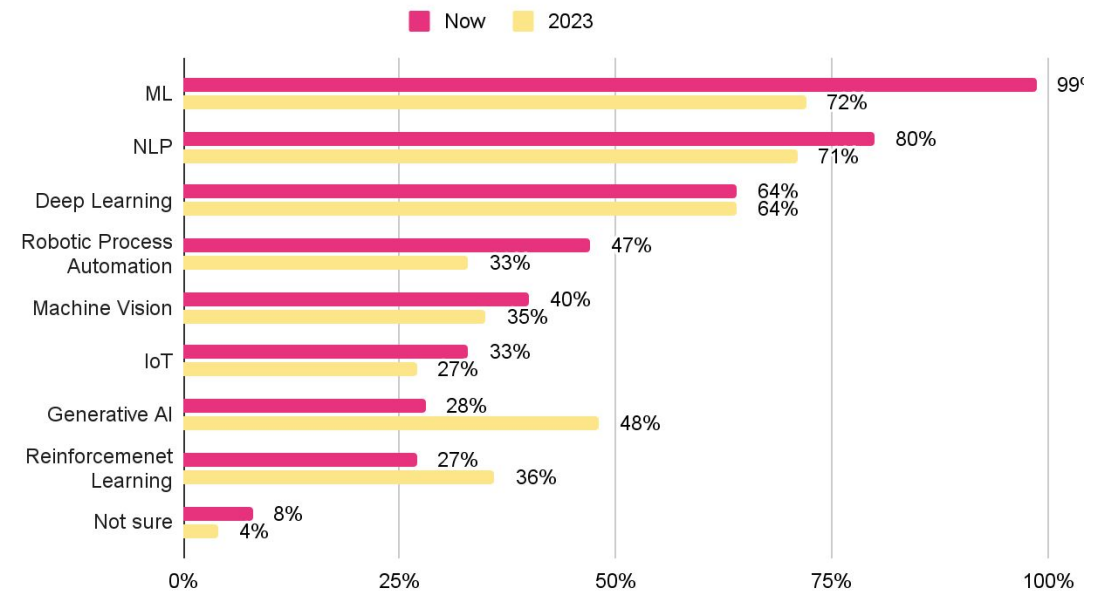
1: Current and future AI adoption

# Generative AI and Reinforcement Learning lead in growth in the field of AI adoption

A majority of respondents confirm the established practice of Machine Learning (ML) and Natural Language Processing (NLP), with 80% and over affirming current implementation. Generative AI sees the biggest spike in adoption, with a 20% difference between respondents currently implementing the technology vs anticipating implementation.

ML and NLP sit at the top of the list of AI techniques most commonly in use today. Moving forward, these techniques are forecasted to continue holding ground in their use and application, indicating a clear and dominant presence in the foreseeable future. Participants surveyed, however, revealed that Generative AI and Reinforcement Learning are taking big steps forward as organizations plan for the adoption and integration of these specific AI techniques into their operations. With ChatGPT seizing public attention while this survey was conducted, galvanizing a collective interest in its potential, Generative AI will likely continue to see significant growth in implementation.

Techniques implemented (now vs. planned for 2023)



# Smarter decision making, and customer experience, rather than automation, will increasingly become the focus of AI use

Achieving automation is currently a main goal of 64% of AI solutions but it will decrease in popularity as other goals take priority

Across the spectrum of AI implementations, automation and smarter decision making remain at the forefront of what incentives drive organizations to utilize AI, with smarter decision making taking a primary lead in the near immediate future and automation easing back a bit. Increasing business efficiency and enhancing customer experience continue to be secondary when it comes to AI business use cases. A noticeable uptick, however, in applying AI solutions to sales is imagined imminent. With organizations glimpsing opportunities to leverage AI within their sales departments and across sales teams, the incentive to increase sales will invite new applications of AI technologies into business practices.

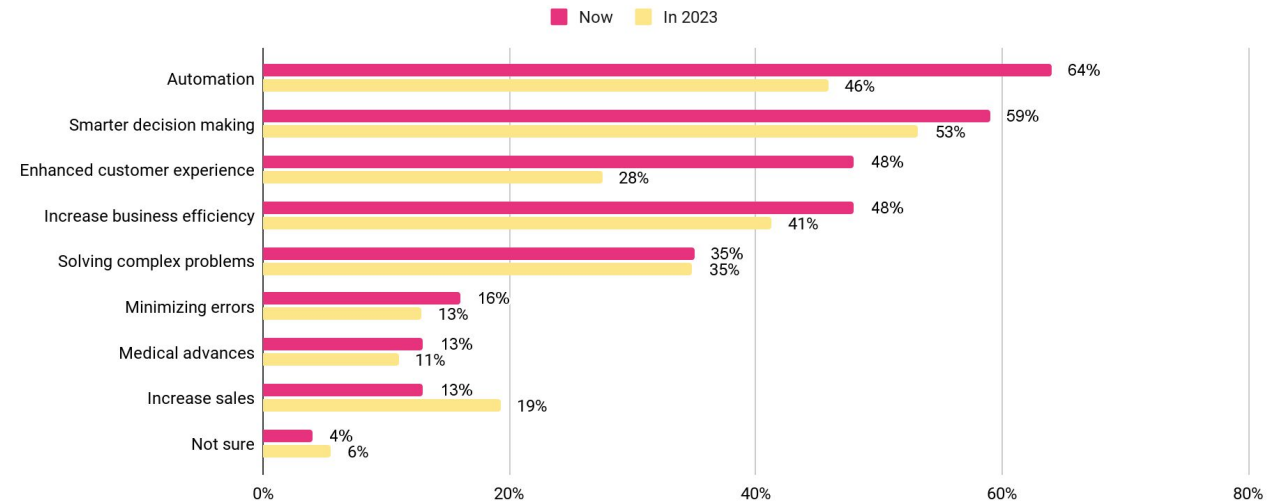
## Current Goals

- 1 Automation
- 2 Smarter decision making
- 3 Enhanced customer experience and increasing customer efficiency

## 2023 Goals

- 1 Smarter decision making
- 2 Automation
- 3 Increase business efficiency

## Goals for AI solutions up to now vs. in 2023

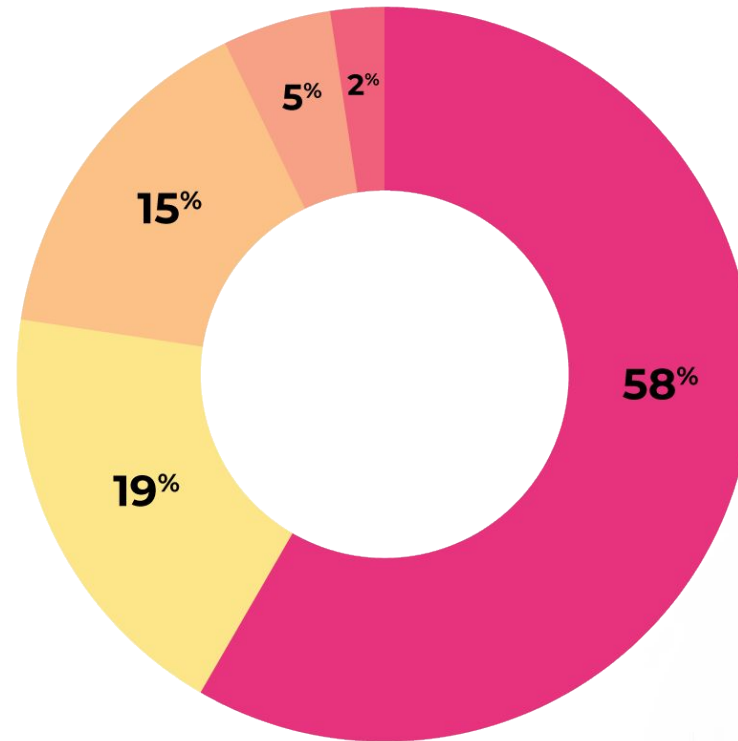


1: Current and future AI adoption

# More than half of AI solutions **are built in-house**

58% of respondents say that they mostly build their custom AI systems in-house with open source software instead of buying commercial AI solutions or outsourcing the tasks.

The finding that most respondents choose to build custom in-house AI-systems with open source software over investing in commercial AI solutions or outsourcing the task highlights the value of tailored solutions. As AI becomes increasingly important for businesses, many organizations recognize the benefit of having solutions designed around their needs rather than relying on an off-the-shelf commercial product. Open-source software provides a cost-effective and flexible solution, while in-house development grants organizations more management over their AI systems, including data privacy and security. Custom AI systems require specialists and resources, however, which may limit some organizations.



## Build vs. Buy

- We mostly build our custom AI systems in-house with open source software
- We mostly buy commercial AI solutions that we customize for our use case
- We mostly collaborate with third party companies that build our AI solutions
- We mostly buy off-the-shelf AI solutions and implement them as they are
- Other

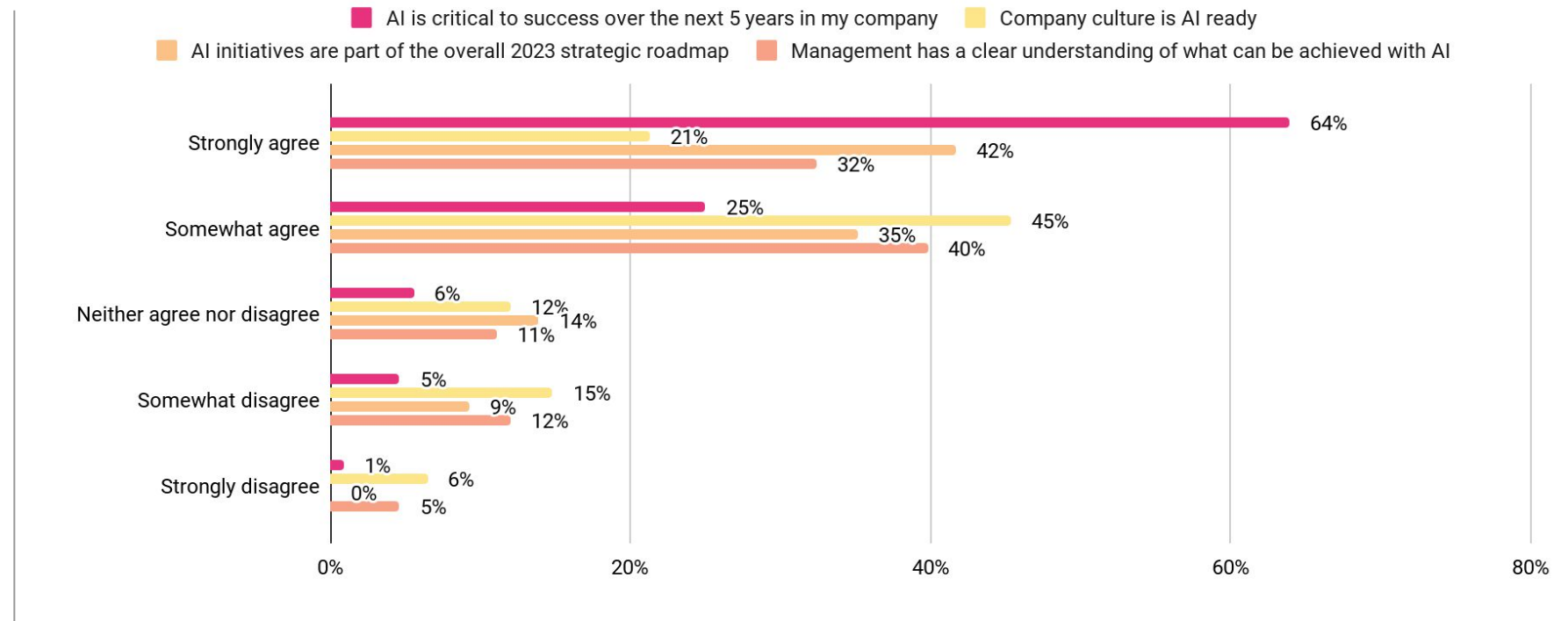


# Company cultures and management are challenged to meet AI adoption timeline

Almost 90% of respondents consider AI critical to success for their organization but 21% think that their company culture is not ready for AI and 17% disagree that management has a clear understanding of what can be achieved with AI.

89% of respondents agree that AI is critical to success for their organization over the next 5 years and 77% say that AI initiatives are part of their overall strategic roadmap in 2023. However, findings further indicate a noticeable reservation from respondents in having confidence in management and their company culture's readiness for AI. This aligns with recent studies that say, on average, only 54% of AI projects make it from pilot to production [1]. These observations highlight the need to educate and engage employees at all levels of an organization, and ensure that leadership has a clear understanding and fosters a culture that is open to innovation and change.

(1) [Gartner. \(2022\). Gartner Survey 2022 Press Release. Gartner Newsroom.](#)







# 02

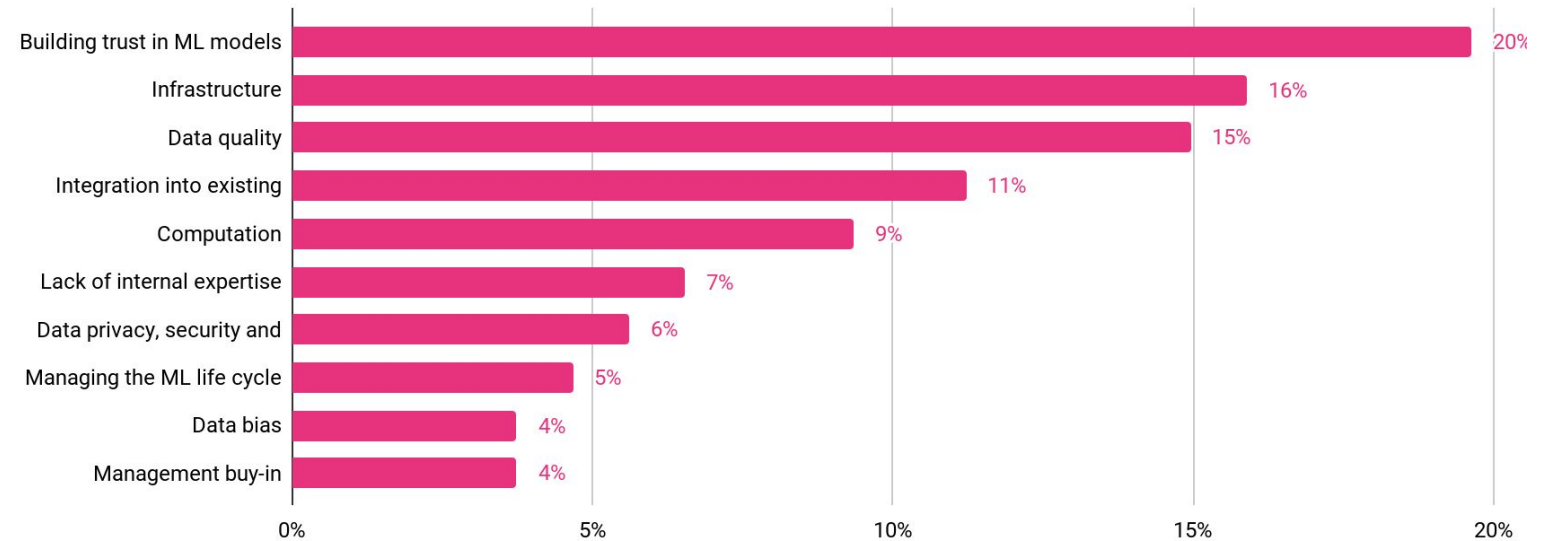
Challenges  
and **trends**

# Building trust in ML models is biggest challenge when implementing AI solutions

In constructing and expanding AI solutions within an organization, 20% of respondents identified establishing trust in ML models as the principal obstacle, followed by infrastructure and data quality challenges.

When considering primary challenges to the implementation and scaling of AI solutions, participants surveyed believed that building trust in ML models is the significant hurdle. The idea that building trust in ML models is the biggest challenge demonstrates that, contrary to popular belief, challenges in AI adoption don't necessarily revolve around tooling but rather around people, indicating a deficit in data literacy. Navigating challenges related to building trust in ML models will touch on abilities to address AI ethics and bias, as well as to understand and convey the decision-making processes of models; improving data literacy facilitates the acceptance of new analytic methods, which can improve results and further bolster trust.

**Biggest challenge when implementing/scaling AI solutions**

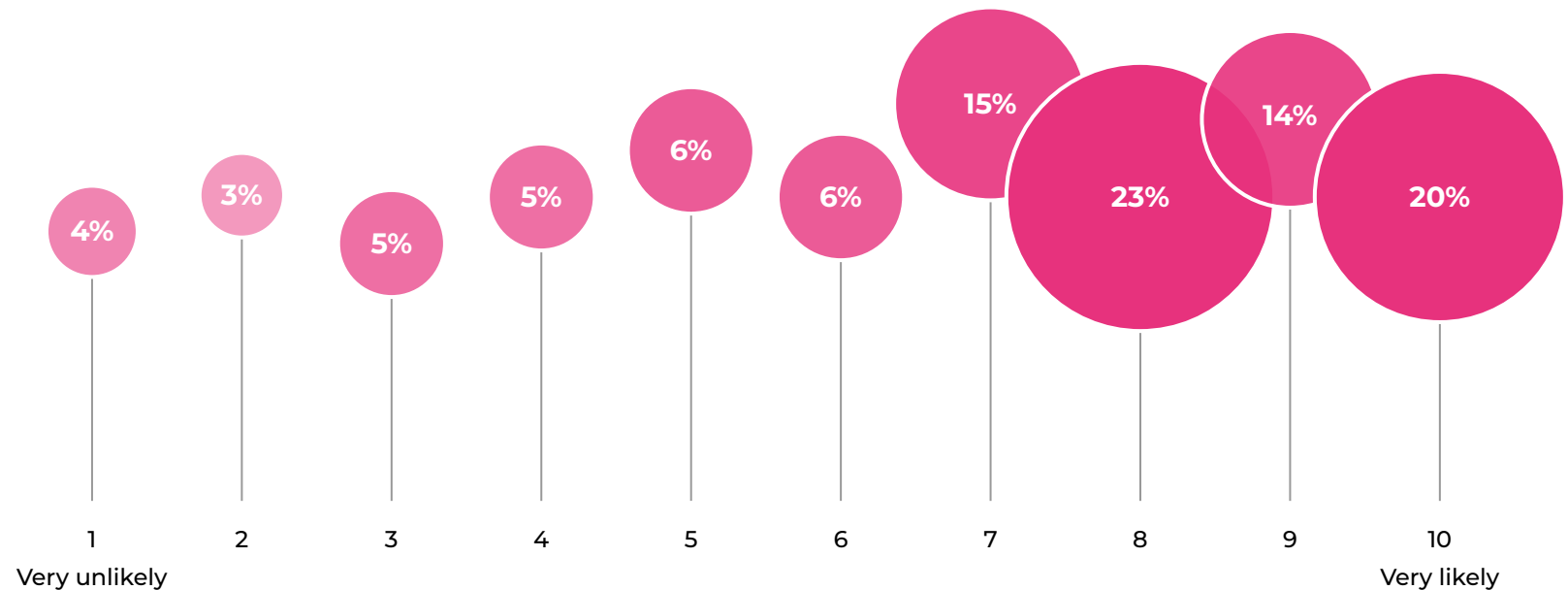


# Optimism on AI's potential to drive growth and gain market advantage is a majority outlook

On a scale of 1-10, 78% of respondents rate 5 and above the likelihood of their companies gaining competitive advantage through AI in the next 2-3 years.

A majority of respondents believe their organization will gain a competitive advantage through AI technologies, illustrating a widespread recognition of AI's potential benefits. Many organizations are choosing to invest in AI hoping to improve operations, decision-making, optimize services, develop new products, and gain greater insight into customer behavior. Through AI techniques, organizations intend to accelerate processes and move forward into new growth opportunities. Survey results suggest that organizations are highly optimistic about the potential for AI to drive this growth and gain advantage in the market.

**Likelihood of gaining competitive advantage through AI in the next 2-3 years**



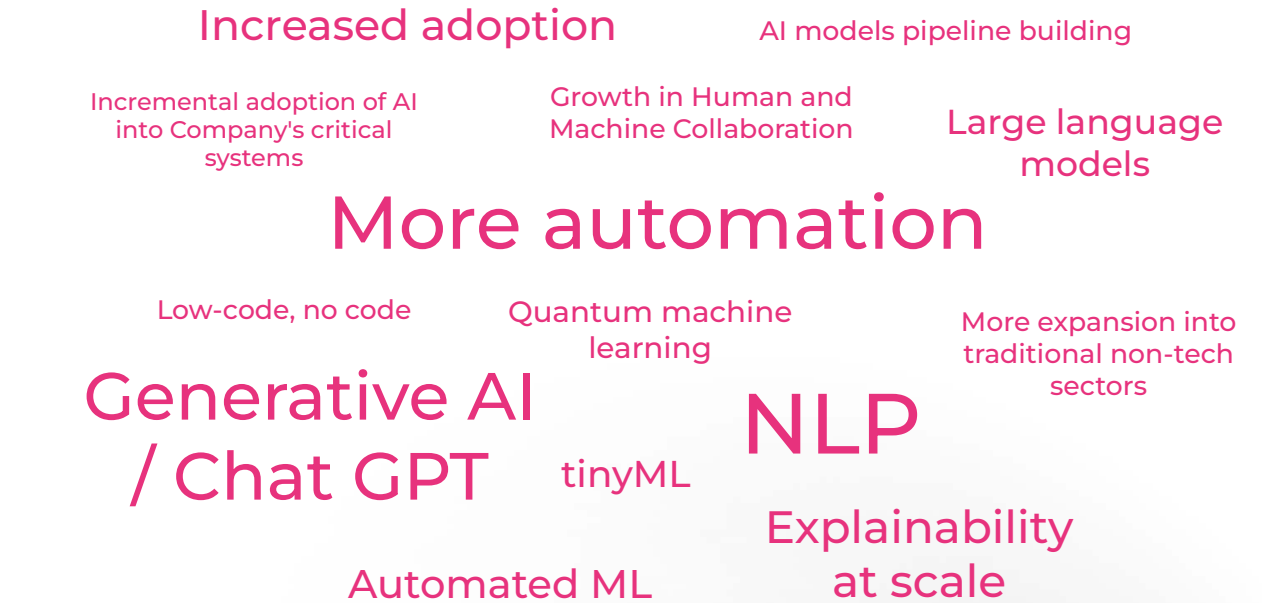
## Emerging trends in AI indicate growth in wider applications of the technology across organizations

Trends within the industry continue to evolve, hinting at a future where organizations prioritize accessibility and aim to establish the infrastructure necessary to best leverage AI.

The world of AI is experiencing several trends that are transforming the industry. Generative AI and Chat GPT, which are powered by NLP are increasingly becoming popular, while automation and automated machine learning are even more prevalent. The need for explainability at scale is on the rise, as more businesses adopt AI in their critical systems.

Additionally, there is growth in Human and Machine Collaboration and expansion into traditional, non-tech sectors. Quantum machine learning and large language models have gained attention, and an increased focus on building AI model pipelines is developing.

For smaller teams, the rise of tinyML and low-code, no-code solutions is proving to be a valued resource. As AI continues to evolve and become more accessible, these trends are shaping the future of the industry and paving the way for new and exciting innovations.







# 03

About this survey  
**and DSS**



## About the **survey**

This survey was conducted publicly across the DSS community in January 2023 with 109 responses considered. Amongst respondents, 75 disclosed having implemented AI solutions, 24 disclosed having not, and 10 reported unsure.

The respondents recognized as currently implementing AI techniques, 75 in total, were asked further about techniques applied, their primary goals with AI, and the decision and preference to build or buy AI solutions. These same respondents were taken into consideration to compare techniques currently being implemented with ones planned to be implemented in 2023.

Additionally, when asked on a scale of 0-10 about the likelihood of launching new AI initiatives in 2023, with 10 being very likely, 10 respondents reported below 5, while 99 reported a likelihood of 4 and up.

The survey content and analysis were developed by Esther Rietmann, Director of Content and Programming at Data Science Salon and Q McCallum, Senior Content Advisor of Data Science Salon. The authors would like to thank Matt Davis, Jessica Kavanagh, and all participants for their contribution to this report.



3: About this survey and DSS

## About **Data Science Salon**

Data Science Salon (DSS) is a unique vertical focused conference which grew into a diverse community of data science managers, practitioners and other technical specialists. The community gathers face-to-face and virtually to educate each other, illuminate best practices and innovate new solutions in a casual atmosphere. DSS regularly publishes data science content in the form of webinars, podcast episodes, blog posts and on-demand videos. Learn more about Data Science Salon and see upcoming events on the DSS website.

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