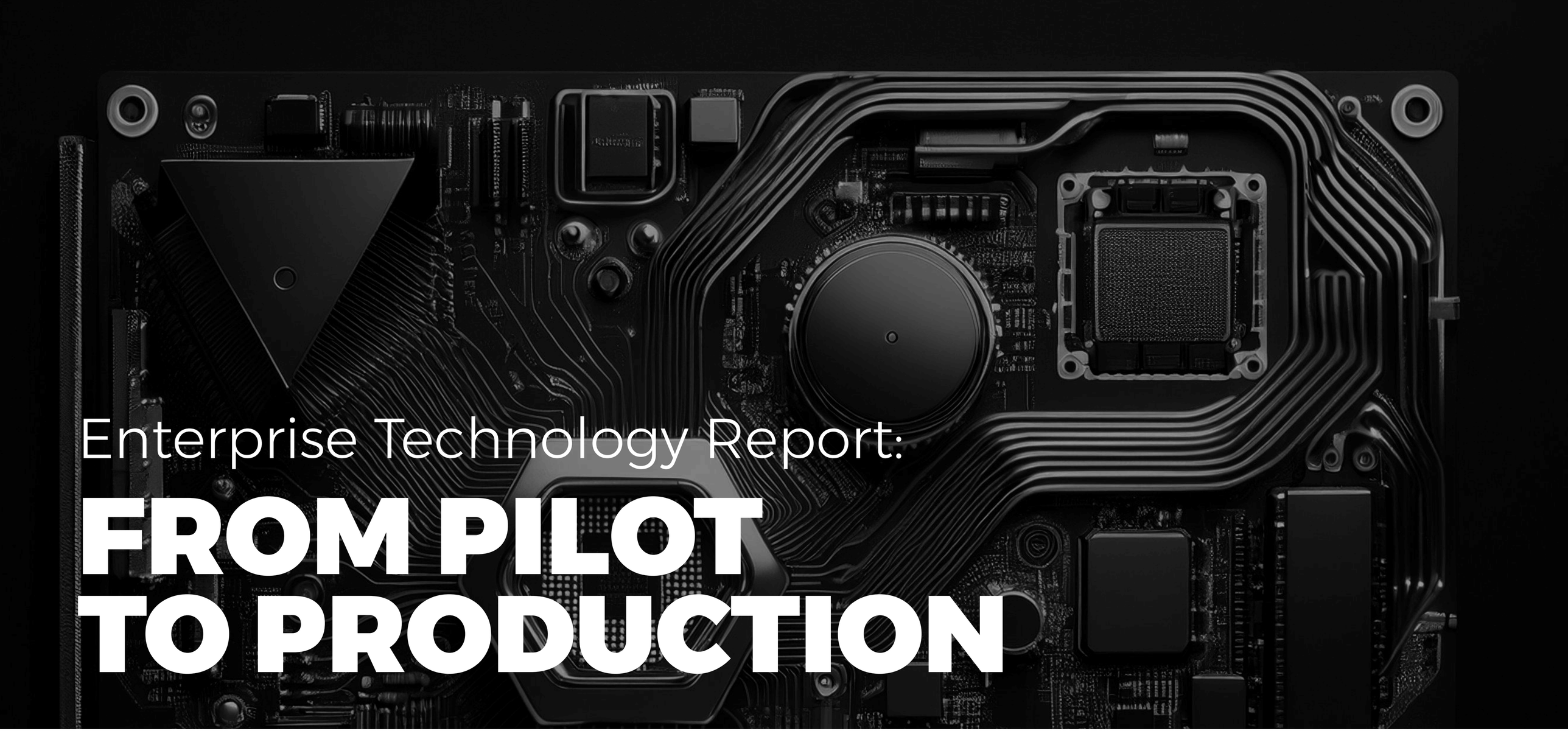


Enterprise Technology Report:

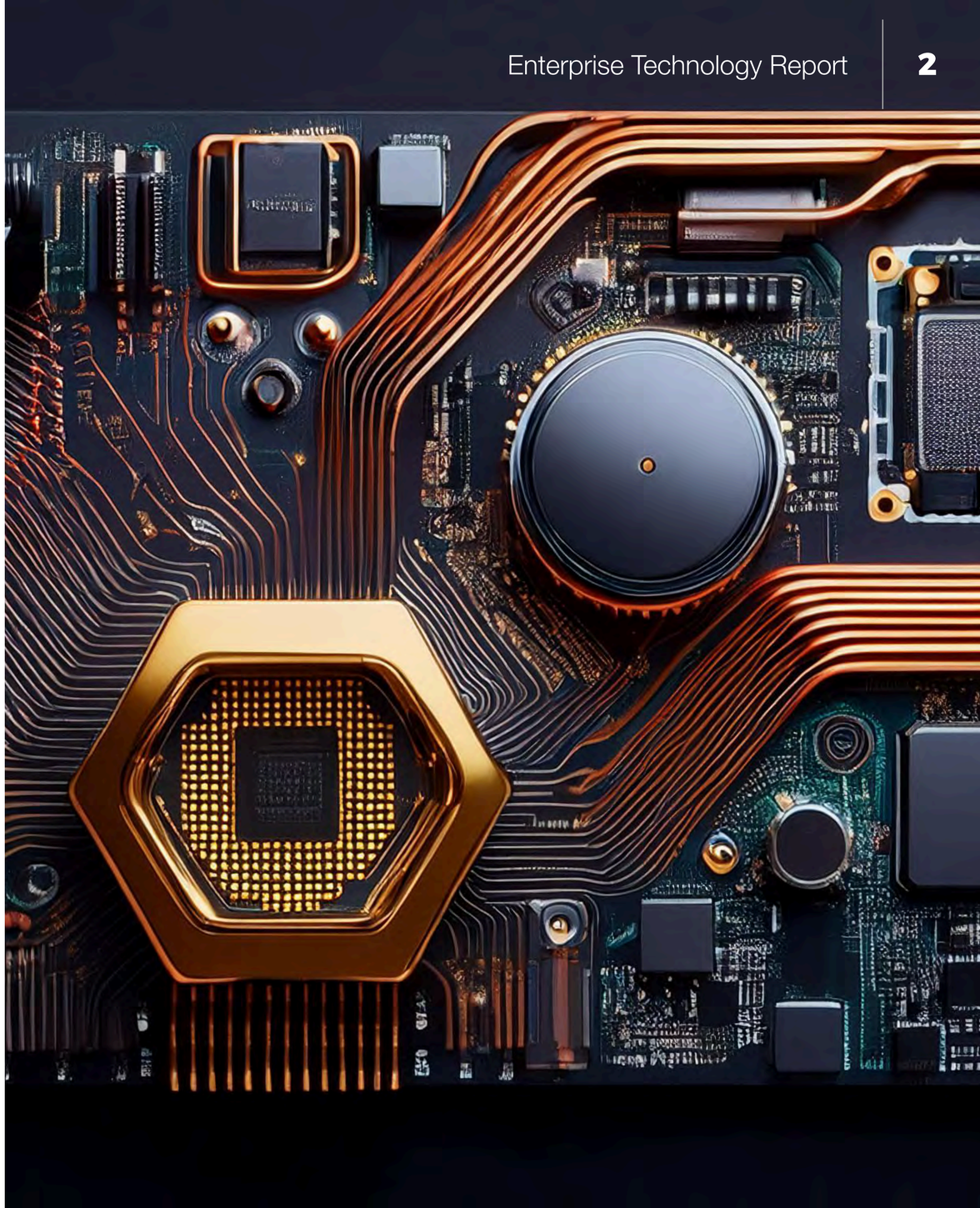
FROM PILOT TO PRODUCTION

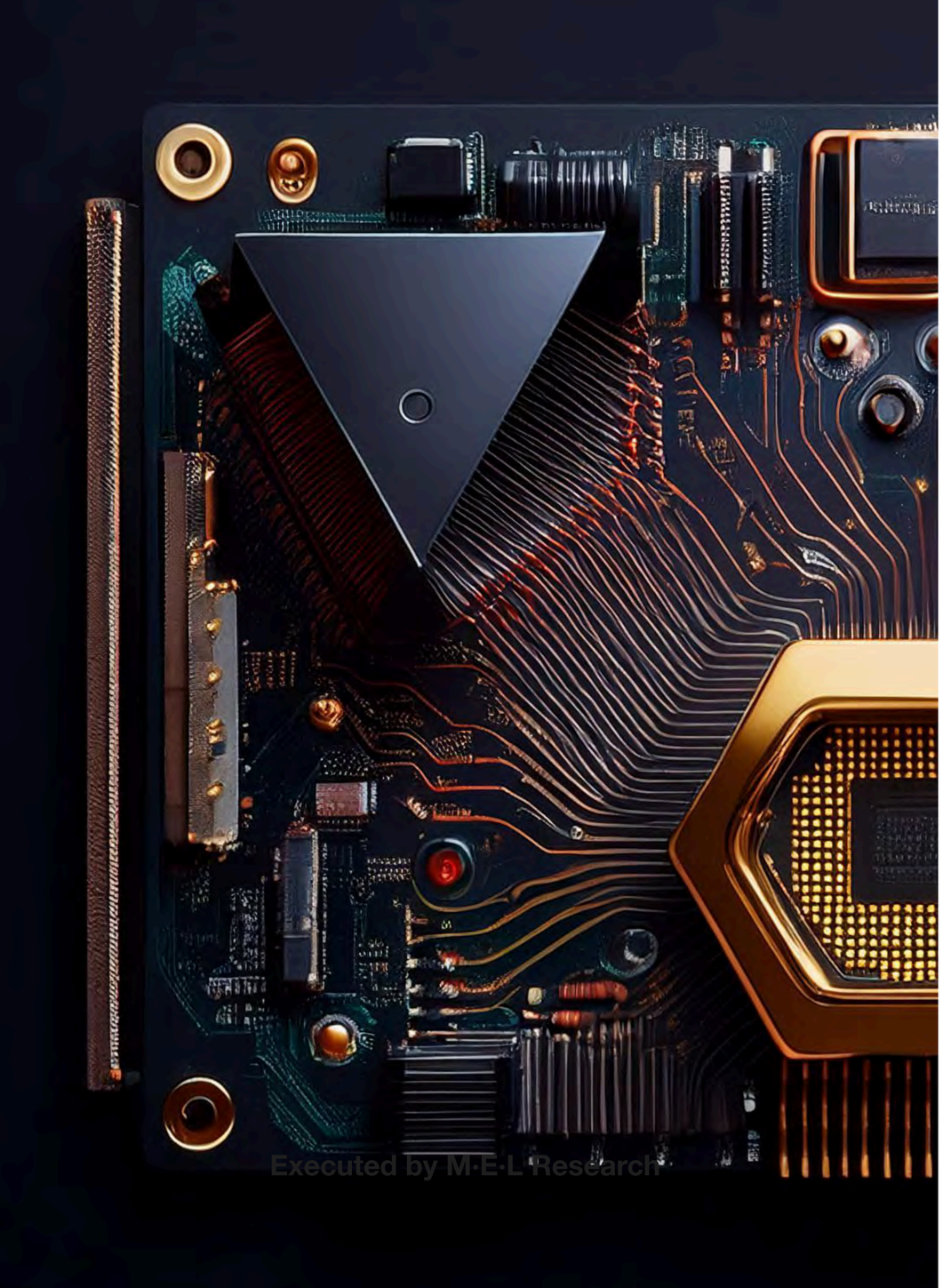
MACH ALLIANCE

Developed in January 2026, prepared in November 2025, commissioned by the MACH Alliance.

m·e·l research

Executed by M·E·L Research





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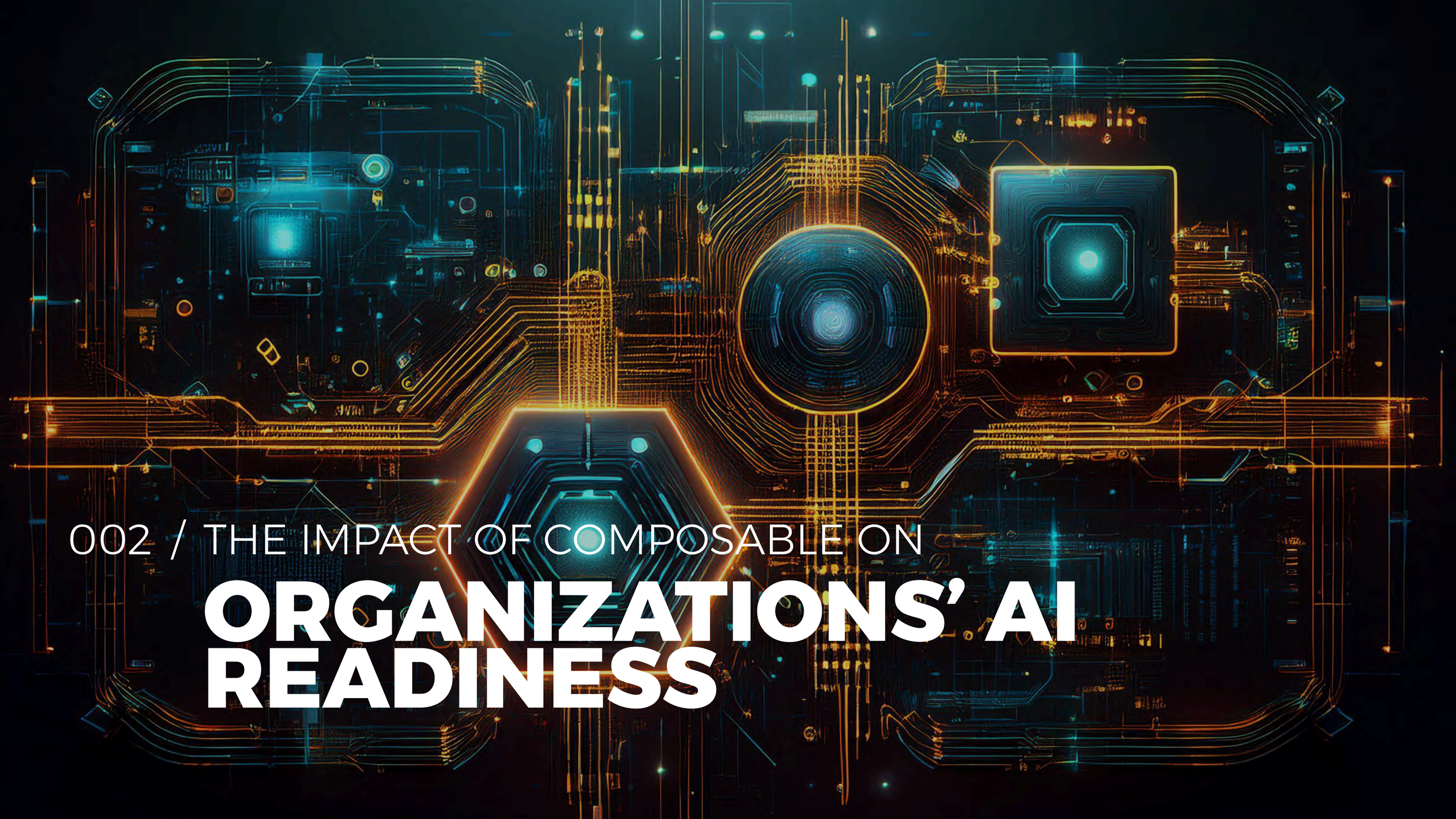
001 /

KEY TAKEAWAYS

Key takeaways

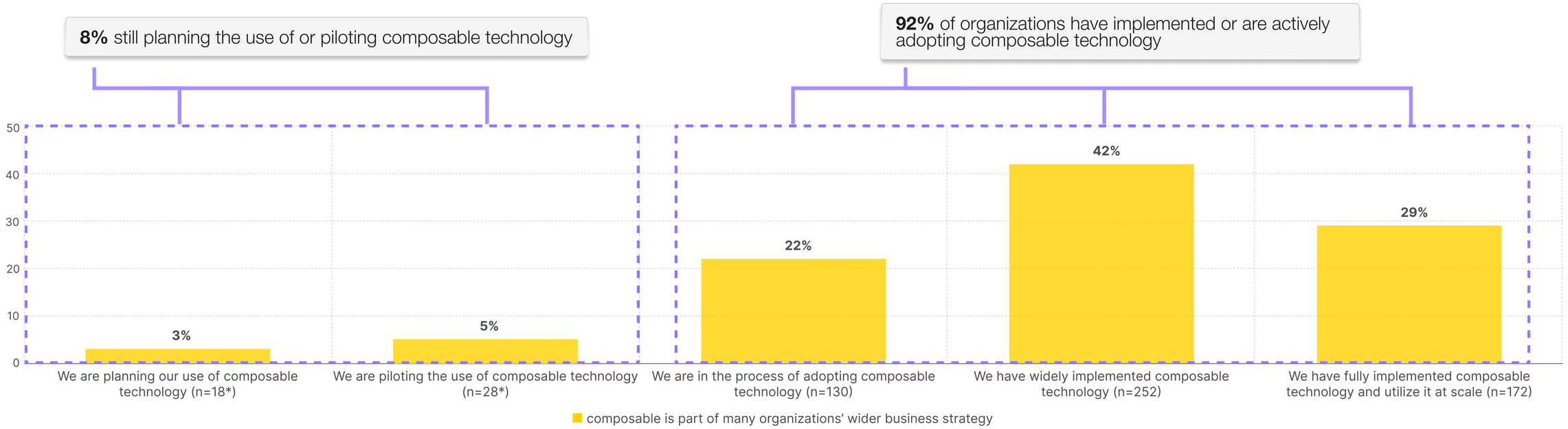
- **Composable adoption is mainstream**: 92% of organizations have implemented or are actively adopting composable technology, with 71% already at wide or full implementation
- **AI adoption accelerating, but a gap persists**: 78% use AI in-house or ahead of competitors, yet 22% remain behind, using only basic tools or relying on vendors
- **Composable architecture unlocks AI confidence**: 98% of fully/widely composable organizations feel confident their infrastructure can support AI at scale
- **Composable drives measurable AI velocity and outcomes**: 94% report composable significantly increases AI deployment speed; 87% say it enables AI-driven business outcomes; 99% have achieved measurable results (averaging 4 outcomes)
- **Composable architecture prevents AI project failure**: 51% of fully composable organizations report zero AI project failures due to integration/architecture issues, compared to 30% for less mature implementations
- **AI implementation faces multiple barriers:** 88% encounter obstacles, with integration complexity, skills gaps, and legacy technology among the top challenges
- **Strong demand for AI governance standards**: 89% believe standards for AI in composable environments are missing; 73% are concerned about governance complexity
- **Composable strongly associated with AI-readiness and scalability**: Decision makers most strongly link composable architecture with being AI-ready (35%), scalable (28%), and flexible (27%) - reinforcing its role as enterprise foundation for AI transformation.



002 / THE IMPACT OF COMPOSABLE ON

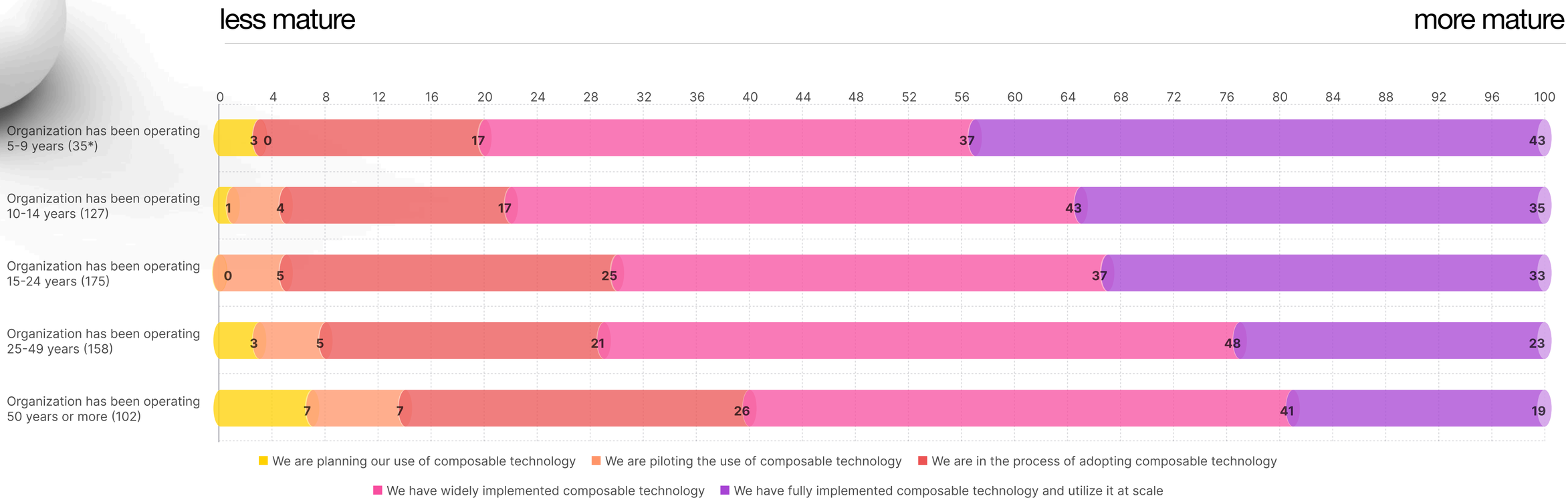
ORGANIZATIONS' AI READINESS

The majority of organizations surveyed are well on their way with composable implementation, clearly demonstrating that composable is part of many organizations' wider business strategy

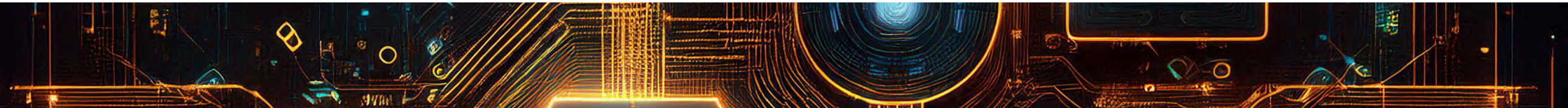


Q1. Which of the following statements best describe where you feel that your organization is on their composable journey?
Base: In parentheses. * denotes low base size, use caution with interpretation.
Please note that anyone selecting "We do not utilize composable technology and have no plans to implement" or "Don't know" at this question, were screened out of this survey – this was a very low number of people

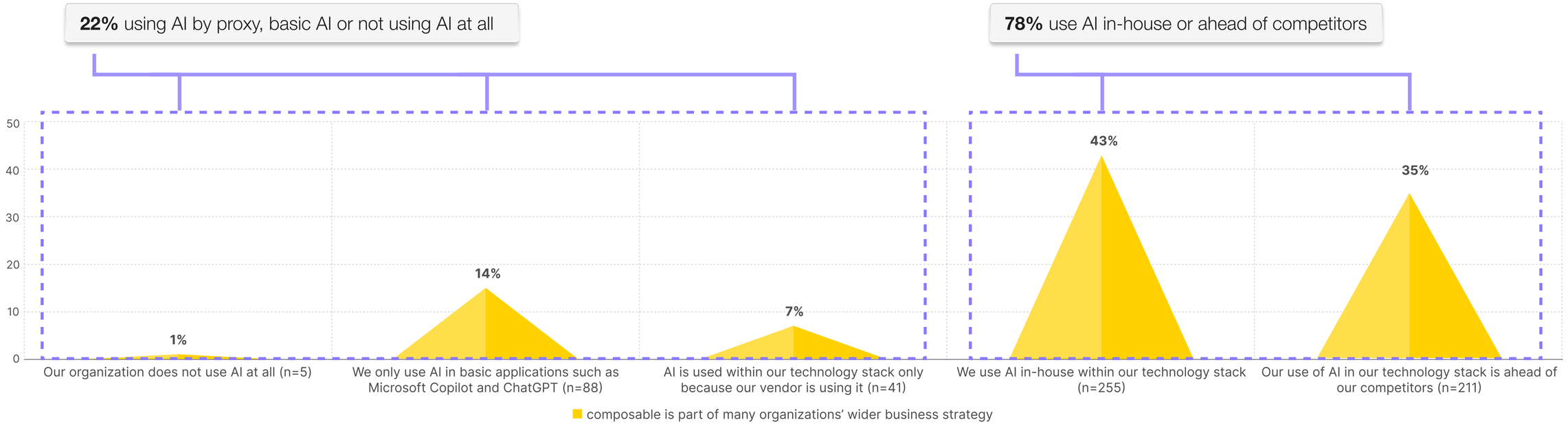
There appears to be a link between organization age and composable maturity, with older organizations further behind – they potentially have more legacy technology, to manage, making the transition more unwieldy



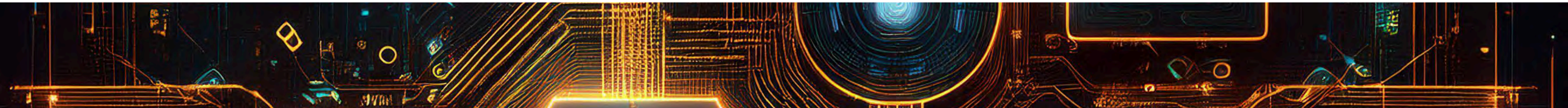
Q1. Which of the following statements best describe where you feel that your organization is on their composable journey?
Base: In parentheses. * denotes low base size, use caution with interpretation.
Base: n=600



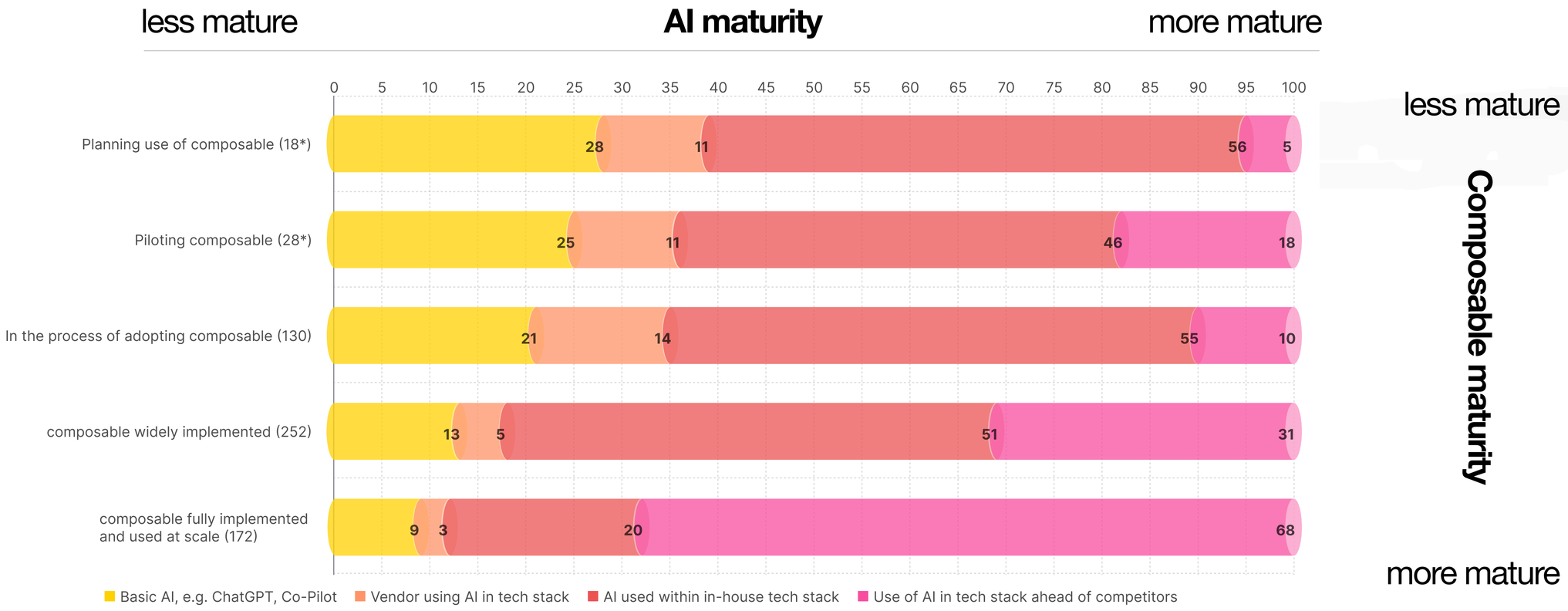
Despite AI being newer technology many organizations have already adopted AI within their technology stack. However, almost a quarter are falling behind competitors



Q2. Which of the following best describes how your organization uses Artificial Intelligence (AI)?

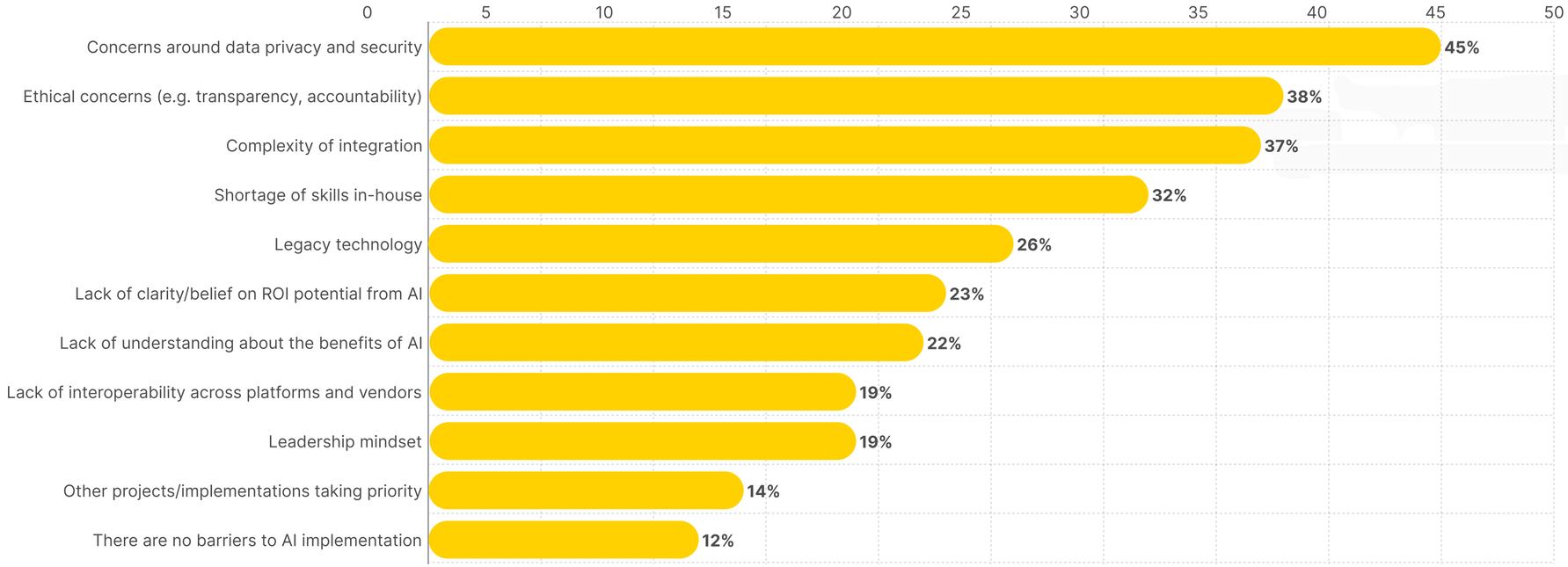


Fully implemented and scaled use of composable technology clearly supports AI adoption



Q1. Which of the following statements best describe where you feel that your organization is on their composable journey?
Base: In parentheses. * denotes low base size, use caution with interpretation.

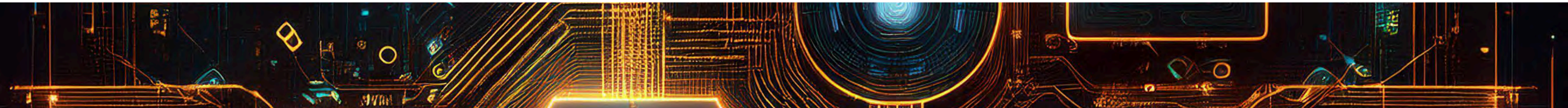
Almost nine in ten organizations experience barriers to implementing AI. Concerns about privacy and security, ethics and integration complexity top the list of AI implementation barriers



88% experience barriers to AI implementation

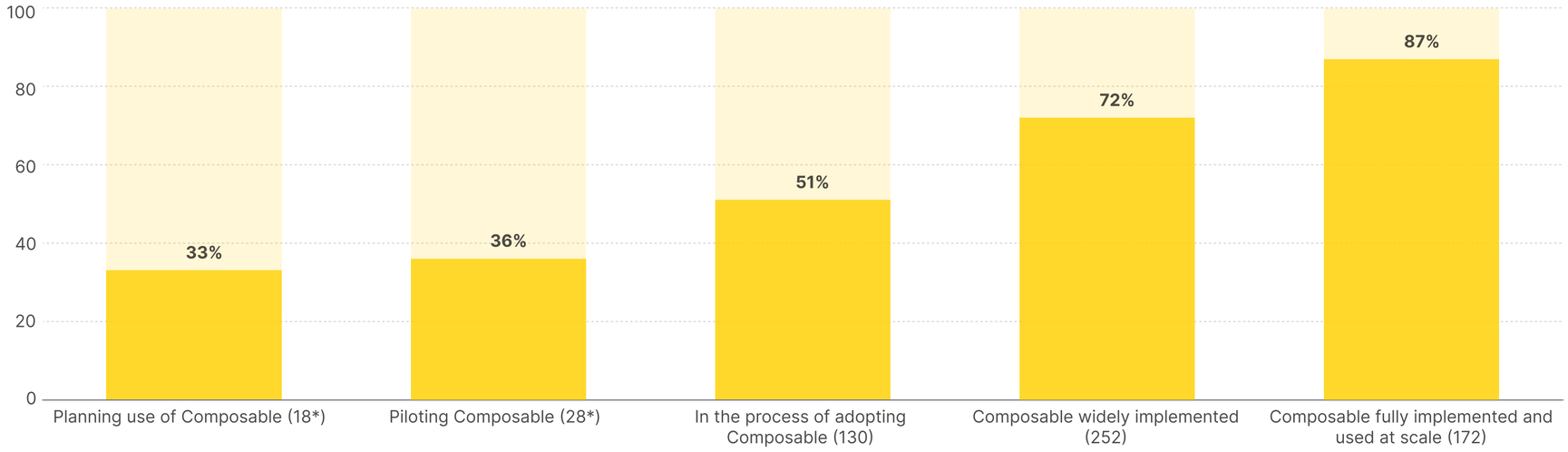
3 barriers experienced on average

Q1. Which of the following statements best describe where you feel that your organization is on their composable journey?
Base: In parentheses. * denotes low base size, use caution with interpretation.
Base: n=600



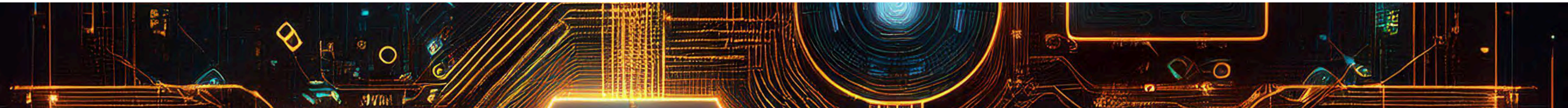
Wider implementation and utilization of composable technology is linked to greater confidence in organizations' ability to adopt and scale AI

Percentage of very confident organization's current technology setup can support the implementation of AI at scale across different platforms



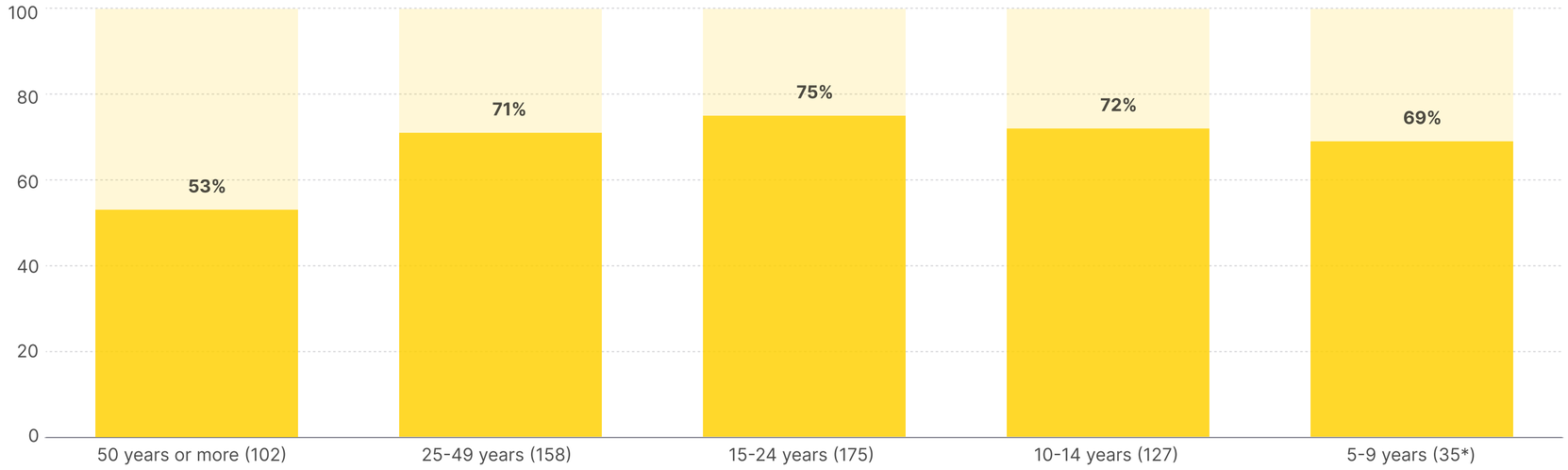
98% of organizations that have fully or widely implemented composable feel confident their tech setup can support implementation of AI

Q12b. Which of the following best describes the Return on Investment (ROI) your organization is experiencing from implementing AI?
cut by Q1. Which of the following statements best describe where you feel that your organization is on their composable journey?
Base: In parentheses, those who are implementing AI and measuring ROI on that investment. * denotes low base size, use caution with interpretation



The oldest organizations, held back by their slower transition to composable, demonstrate less confidence in their tech setup's ability to support AI adoption compared to younger organizations

Percentage of very confident organization's current technology setup can support the implementation of AI at scale across different platforms

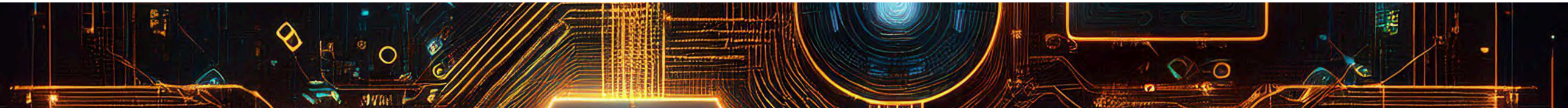


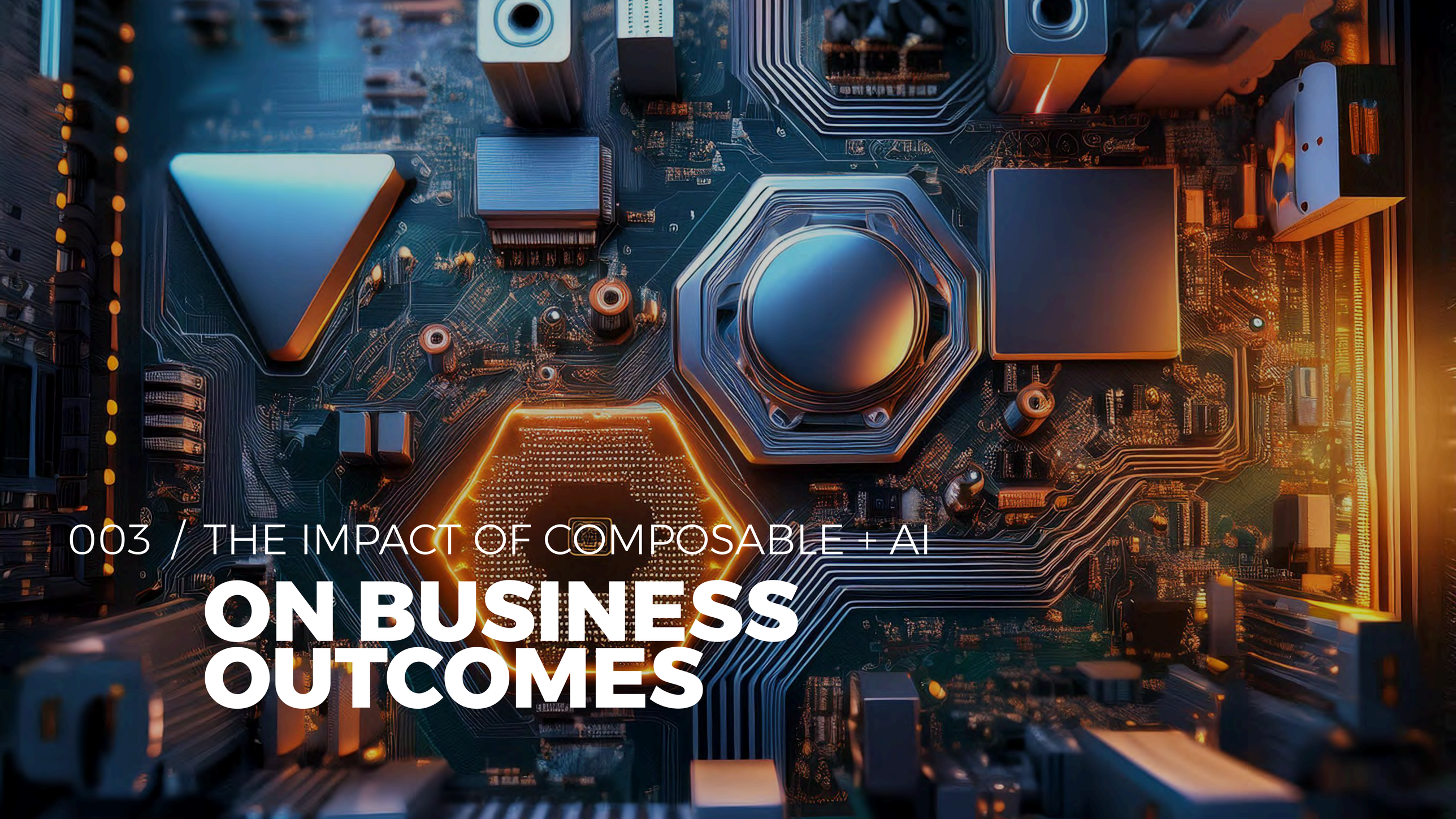
Market and Sector differences

Confidence that their current tech setup can support implementation and scaling of AI is lower in organizations in **Australia** and **Financial Services** organizations vs average

In this survey, Financial Services organizations are more likely to be 50 years or older vs average

Q3. How confident are you that your organization's current technology setup can support the implementation of Artificial Intelligence (AI) at scale across different platforms? Base: In parentheses. * denotes low base size, use caution with interpretation



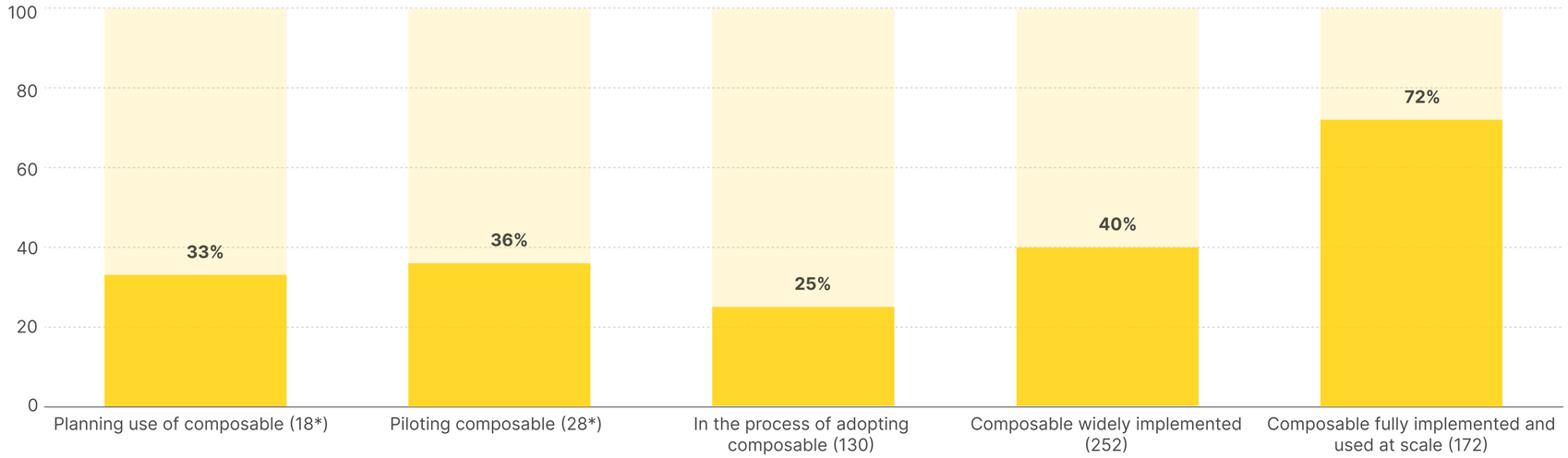


003 / THE IMPACT OF COMPOSABLE + AI

ON BUSINESS OUTCOMES

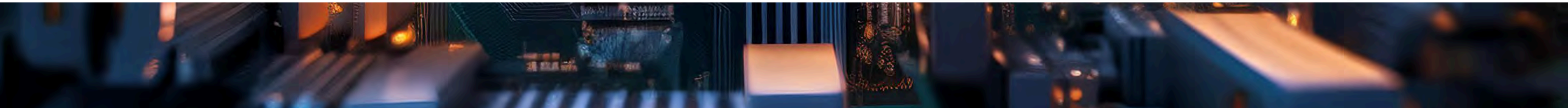
Fully implemented and scaled composable technology is linked to significantly increased speed of AI deployment

Percentage of composable architecture significantly increases speed of AI deployment



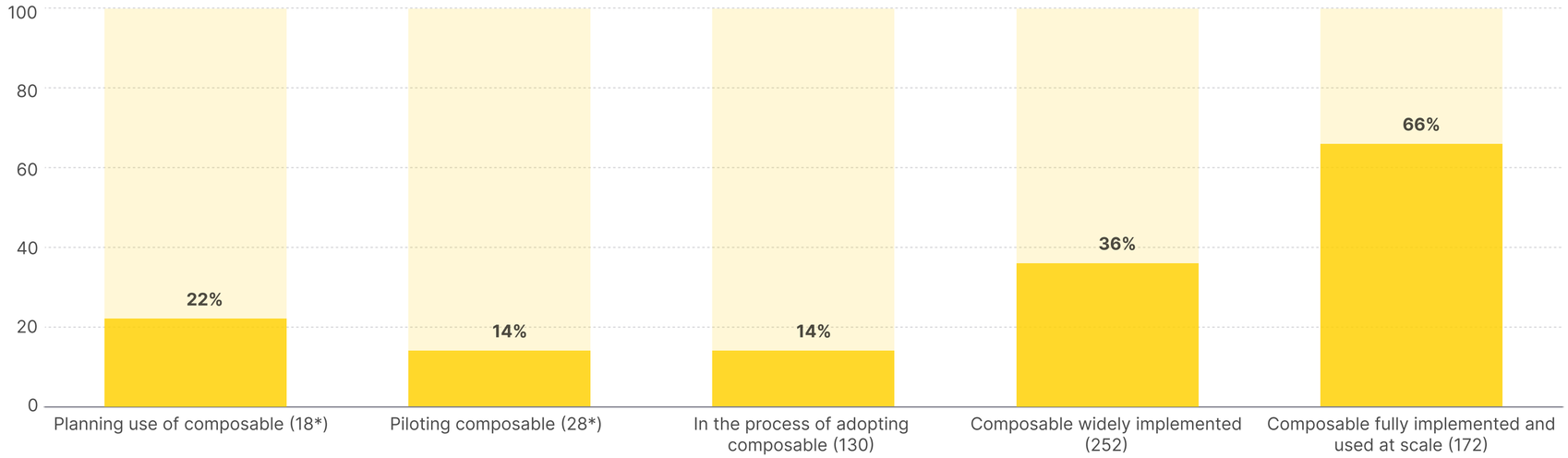
94% of organizations that have fully implemented composable feel, that composable architecture increases speed of AI deployment to some extent

Q6. Which of the following best describes the impact that composable architecture has/would have on the speed at which your organization can deploy Artificial Intelligence (AI)?
cut by Q1. Which of the following statements best describe where you feel that your organization is on their composable journey?
Base: In parentheses. * denotes low base size, use caution with interpretation



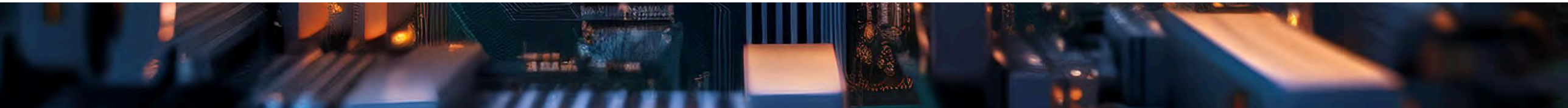
Fully composable organizations report that their architecture is a significant enabler of AI-driven business outcomes

Percentage of organization's architecture significantly enables and is a major driver of AI-driven business outcomes

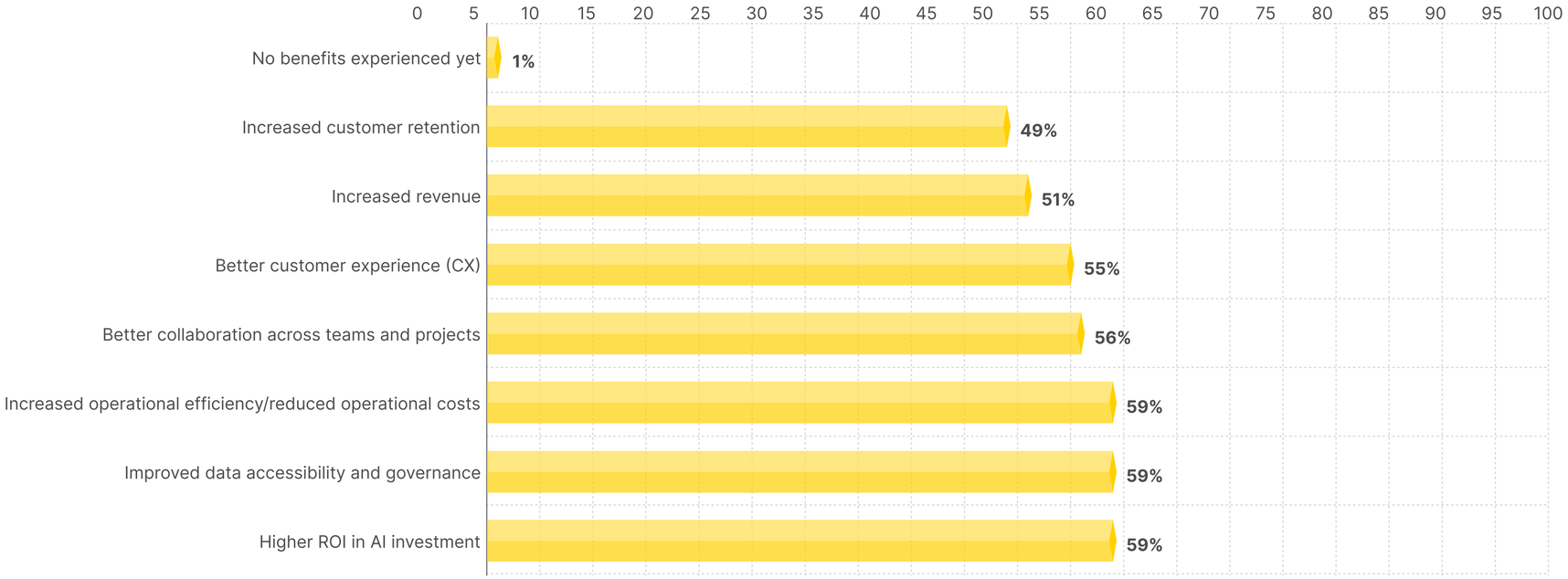


87% of organizations that have fully implemented composable feel that their **architecture enables AI-driven business outcomes**

Q6. Which of the following best describes the impact that composable architecture has/would have on the speed at which your organization can deploy Artificial Intelligence (AI)?
cut by Q1. Which of the following statements best describe where you feel that your organization is on their composable journey?
Base: In parentheses. * denotes low base size, use caution with interpretation



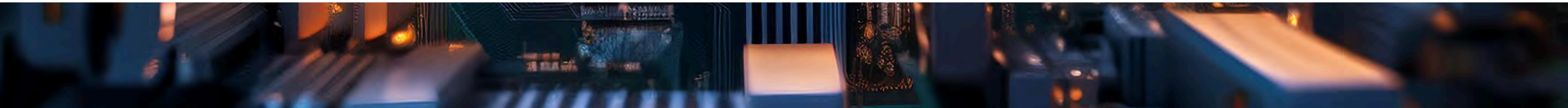
Almost all organizations with fully scaled implementation of composable, experience measurable outcomes as a result of adopting AI



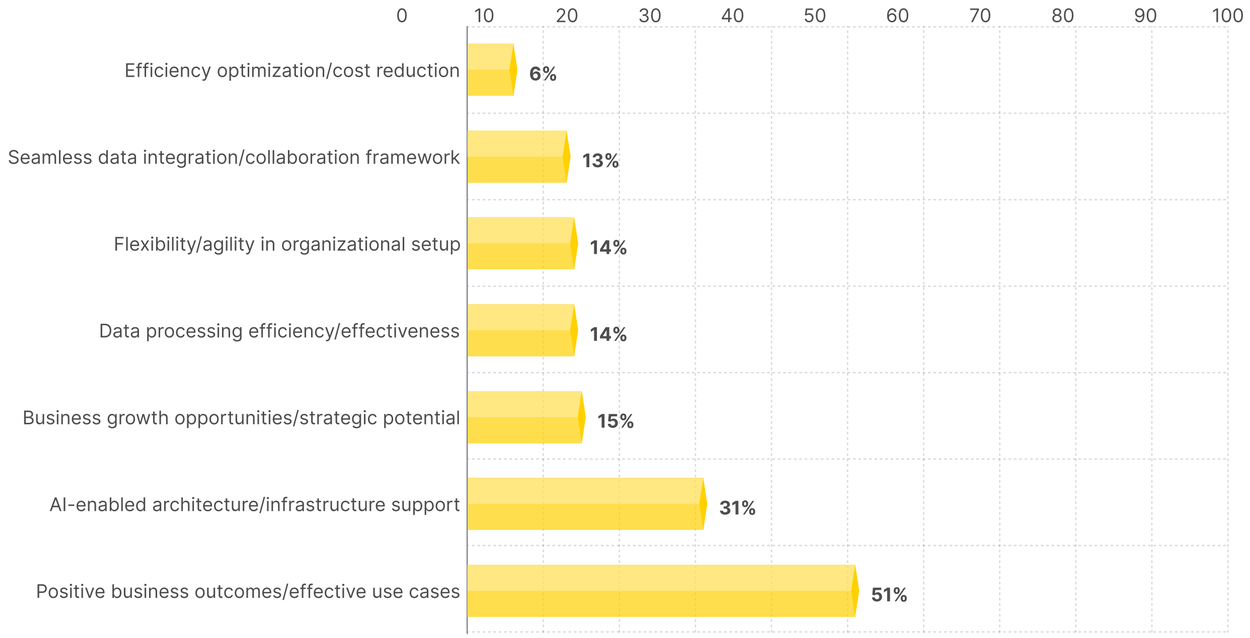
99% of organizations that have fully implemented composable, have experienced at least one **measurable outcome as a result of implementing AI**

4 measurable outcomes experienced on average

Q7. Which of the following measurable outcomes has your organization experienced as a result of implementing AI initiatives?
cut by Q1. Which of the following statements best describe where you feel that your organization is on their composable journey?
Base: n=172, those whose organization has fully implemented composable



Decision-makers from fully composable organizations spontaneously explain that infrastructure and processes underpinned by composable technology better enable AI adoption and positive business outcomes



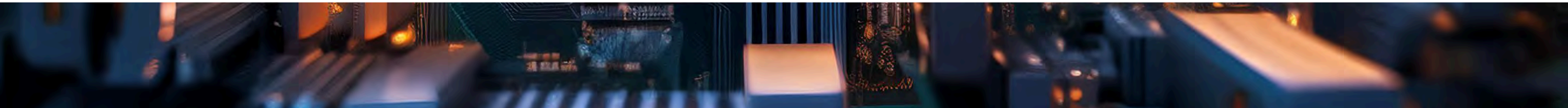
> "We have fully implemented AI ahead of schedule due to using MACH technology within our business."
>
> **VP of IT, US**

> "Our current architecture provides a solid foundation for AI adoption."
>
> **CTO, US**

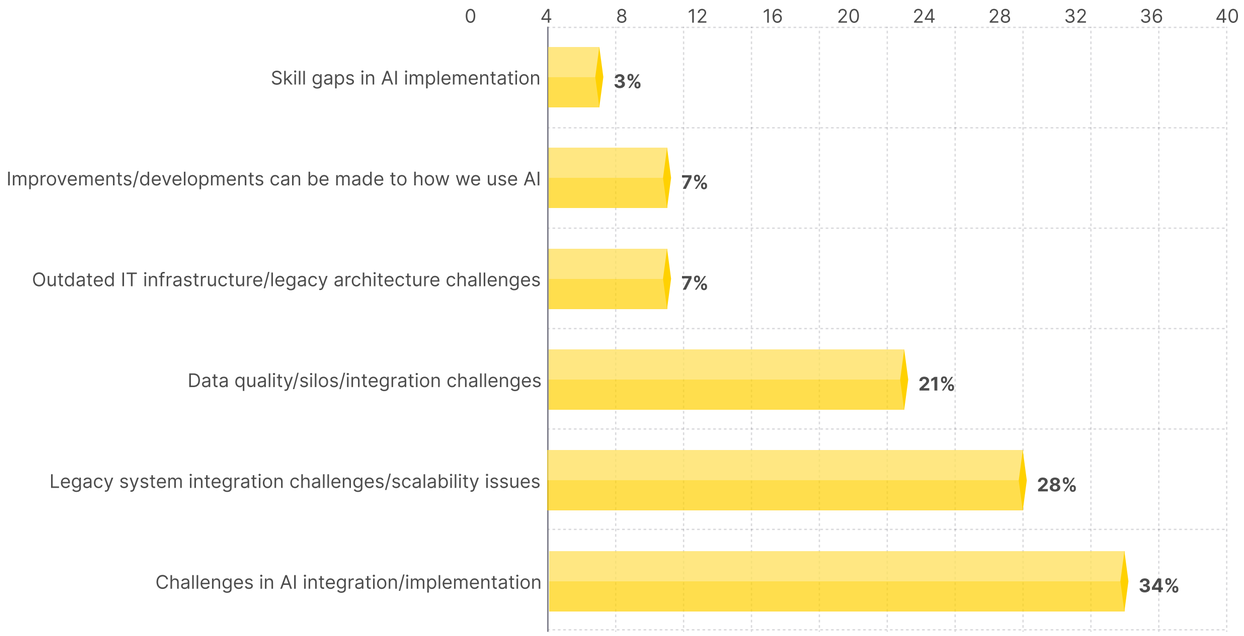
> "It provides clean integrated data for AI and supports scalable IT systems to run AI efficiently. Real time analytics turn AI insights into action, and governance and security ensures that AI is reliable and compliant."
>
> **CTO, Canada**

> "Our systems allow us to use AI effectively, but certain integration gaps and older components still limit how far we can push AI driven innovations."
>
> **CFO, UK**

Q9. Which of the following best describes how your organization's architecture impacts AI-driven business outcomes? Please can you explain your answer.
cut by Q1. Which of the following statements best describe where you feel that your organization is on their composable journey?
Base: n=150, those whose organization has fully implemented composable and feel their organization's architecture enables AI-driven business outcomes (and answered the question). Showing codes >5% and a selection of open text responses



Whereas legacy technology and integration challenges hinder AI-driven business outcomes



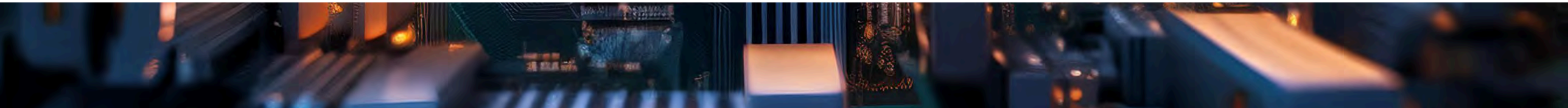
> "Some of our legacy systems are old and are difficult and costly to integrate with AI."
>
> **IT Director, UK**

> "Outdated infrastructure and fragmented data sources reduce the effectiveness of our AI implementations and insights."
>
> **CEO, US**

> "The company's data is neither centralized nor standardized, which prevents AI models from reaching their full potential."
>
> **Responsable des systèmesd'information, France**

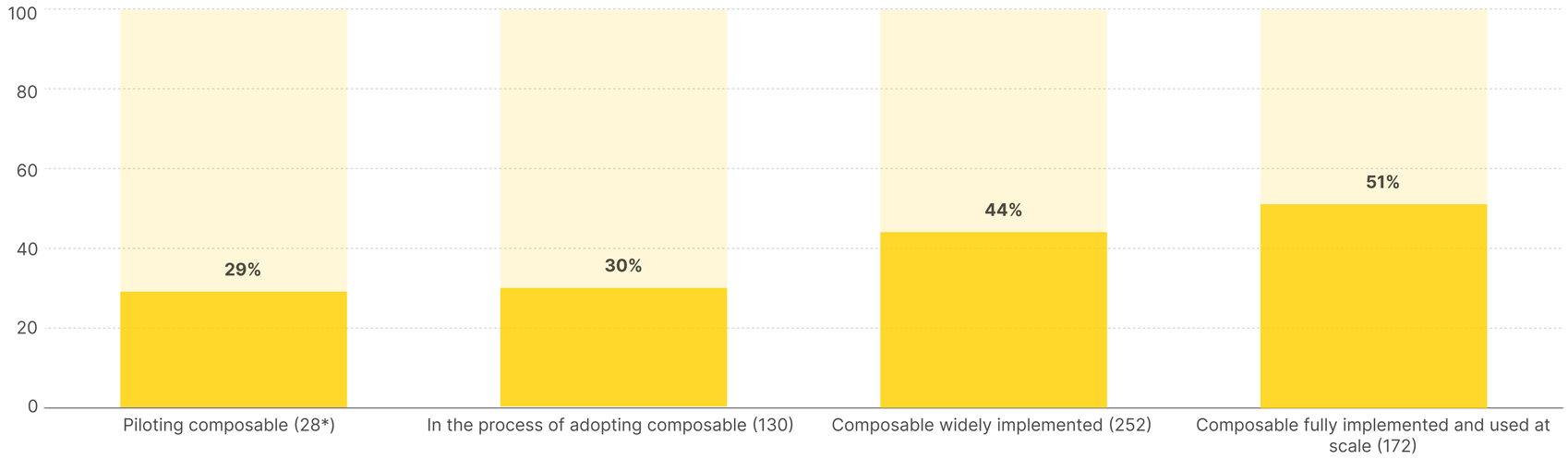
> "Our IT infrastructure is outdated and hinders data processing for AI."
>
> **Director IT and Digital Transformation, Germany**

Q9. Which of the following best describes how your organization's architecture impacts AI-driven business outcomes? Please can you explain your answer.
cut by Q1. Which of the following statements best describe where you feel that your organization is on their composable journey?
Base: n=150, those whose organization has fully implemented composable and feel their organization's architecture enables AI-driven business outcomes (and answered the question). Showing codes >5% and a selection of open text responses

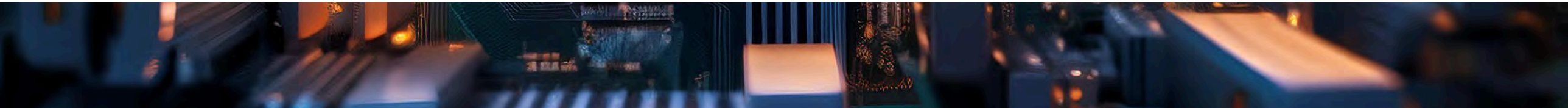


Composable architecture supports the success of AI projects

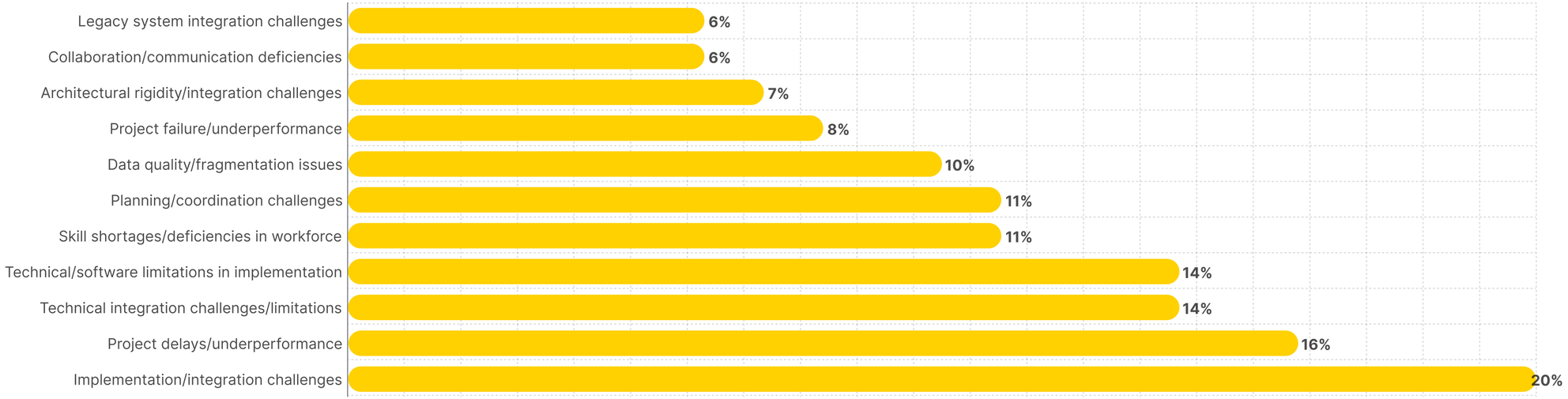
Percentage that say no AI projects have failed due to integration or architecture limitations



Q10. Which of the following best describes the proportion of Artificial Intelligence (AI) projects in your organization that have not worked as expected or could not be progressed due to integration or architecture limitations?
cut by Q1. Which of the following statements best describe where you feel that your organization is on their composable journey?
Base: In parentheses. * denotes low base size, use caution with interpretation



Challenges associated with legacy technology and skills gaps are key factors behind the failure of AI projects



Market differences

Compared to average…

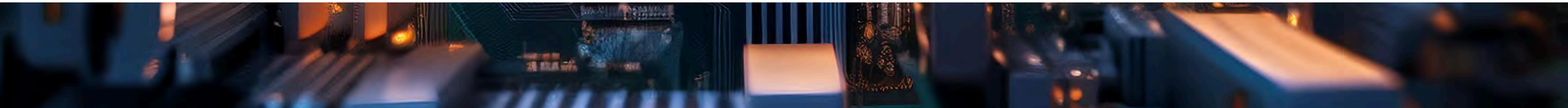
- Project delays are more likely to be a challenge for organizations in the UK and Germany
- Integration challenges are more likely to be a limitation for organizations in North America

Sector differences

Compared to average…

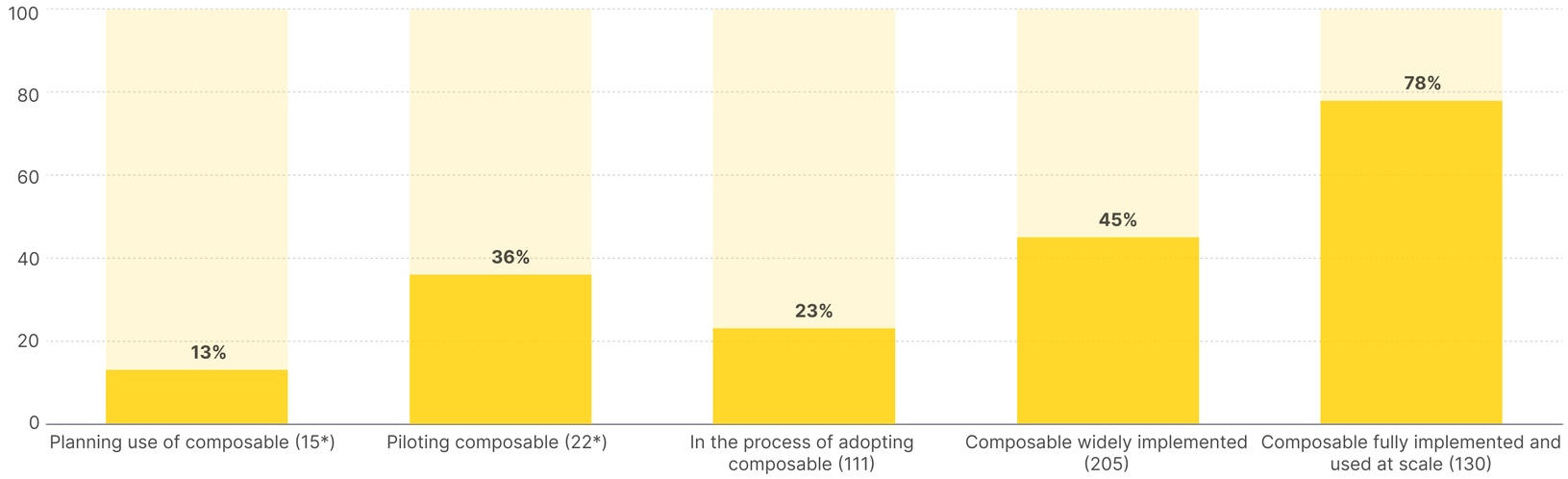
- Data quality/fragmentation and legacy system integration challenges are more likely to be a limitation in the Retail and eCommerce sector

Q11. Why did these projects not work as expected or why could they not be progressed?
Base: n=325, those whose organization has had at least a few AI projects fail due to integration or architecture limitations . Showing codes >5%



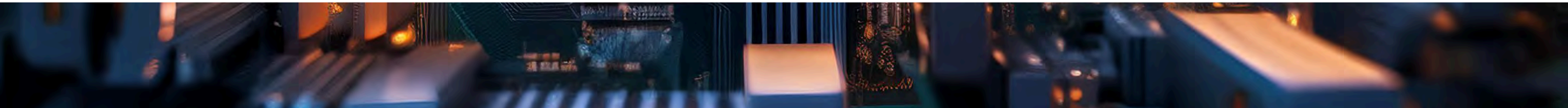
Composable architecture supports the success of AI projects

Percentage of seeing clear evidence that organization is achieving ROI on AI investment



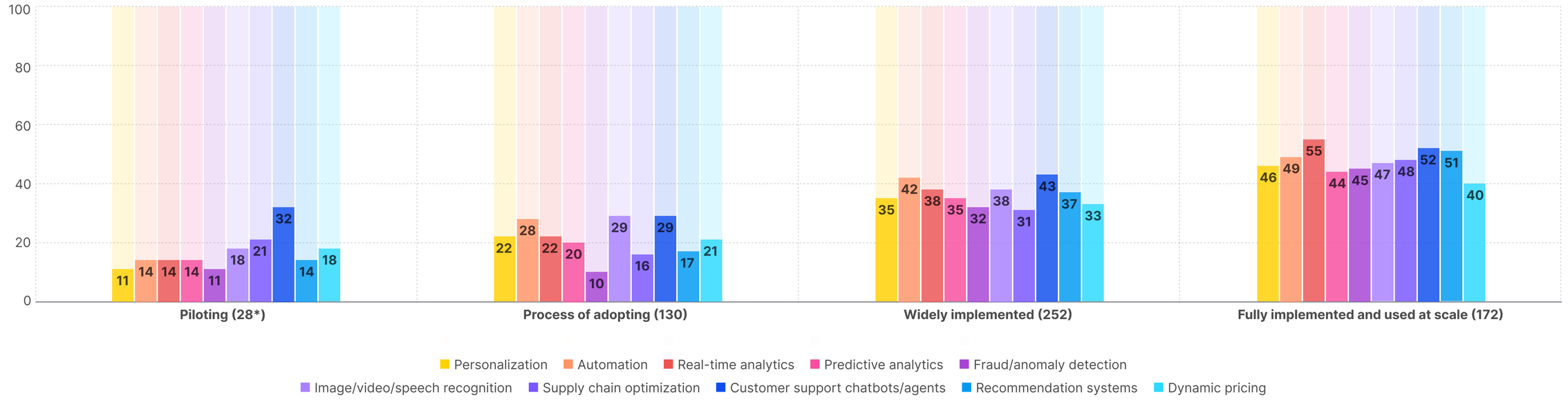
98% of organizations that have **fully implemented composable and are measuring ROI**, are achieving ROI on AI investment, and the remaining 2% expect to

Q12b. Which of the following best describes the Return on Investment (ROI) your organization is experiencing from implementing AI?
cut by Q1. Which of the following statements best describe where you feel that your organization is on their composable journey?
Base: In parentheses, those who are implementing AI and measuring ROI on that investment. * denotes low base size, use caution with interpretation

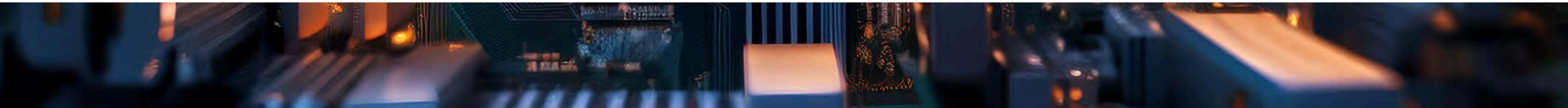


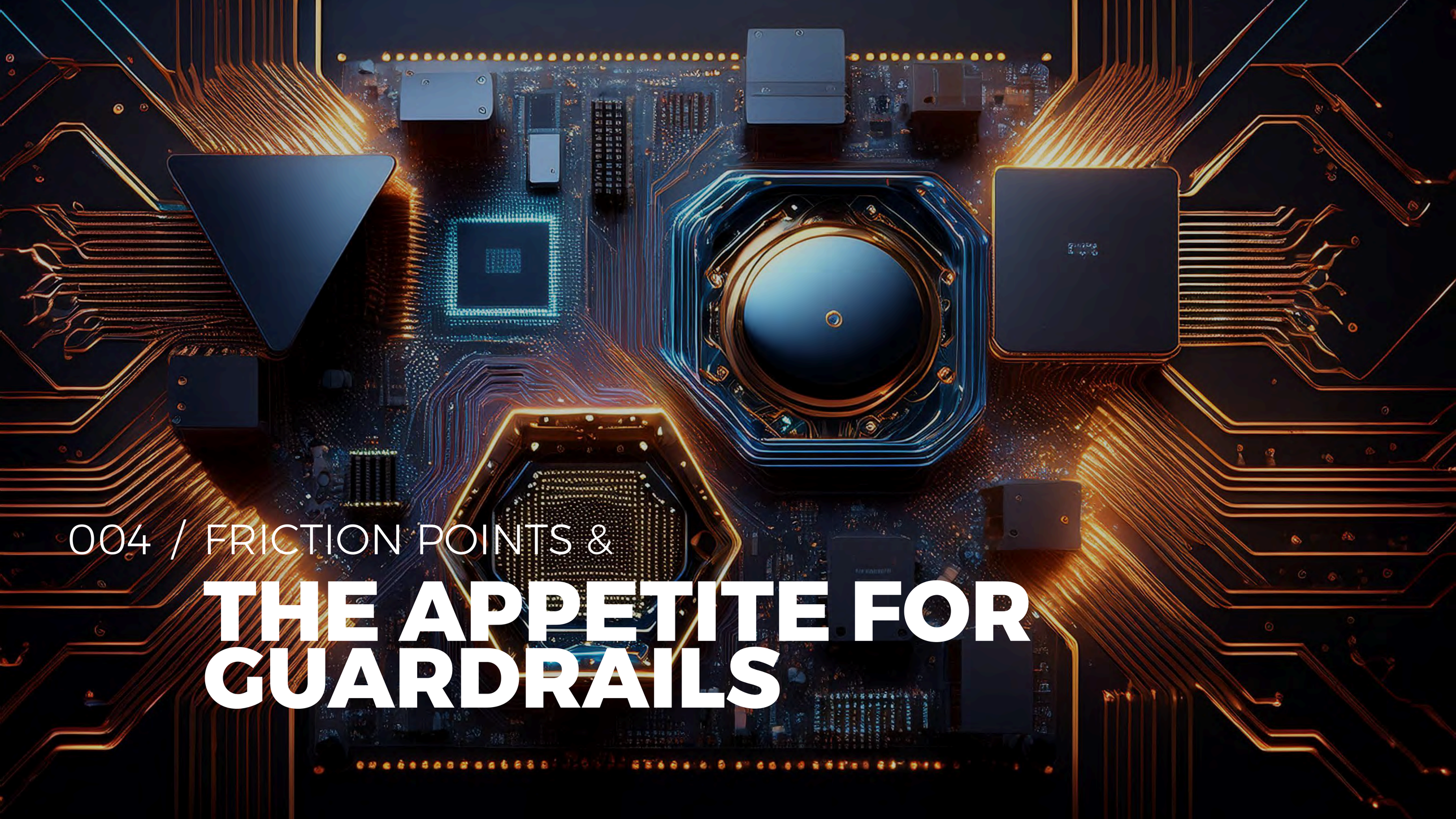
Full implemented and scaled composable technology makes it easy to implement specific AI-use cases

Percentage that say its very easy to implement AI-use case in composable environments



Q13. How easy have the following AI-use cases been to implement in composable environments?
cut by Q1. Which of the following statements best describe where you feel that your organization is on their composable journey?
Base: In parentheses. * denotes low base size, use caution with interpretation
N.B. A version of this chart with data labels to support reporting is available in the appendix

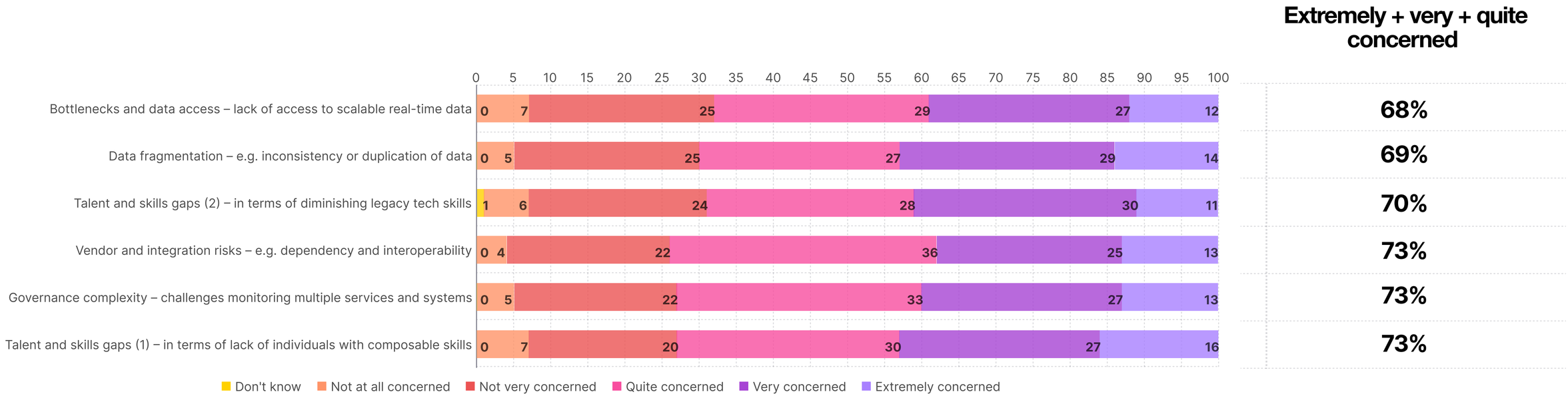




004 / FRICTION POINTS &

THE APPETITE FOR GUARDRAILS

Governance complexity, talent and skills gaps, data and integration challenges are all areas of concern for organizations



Market differences

Compared to average…

- Organizations in Singapore are more concerned about all these issues (except data fragmentation)
- Organizations in Germany are less concerned about all these issues
- UK organizations are more concerned about governance complexity

Sector differences

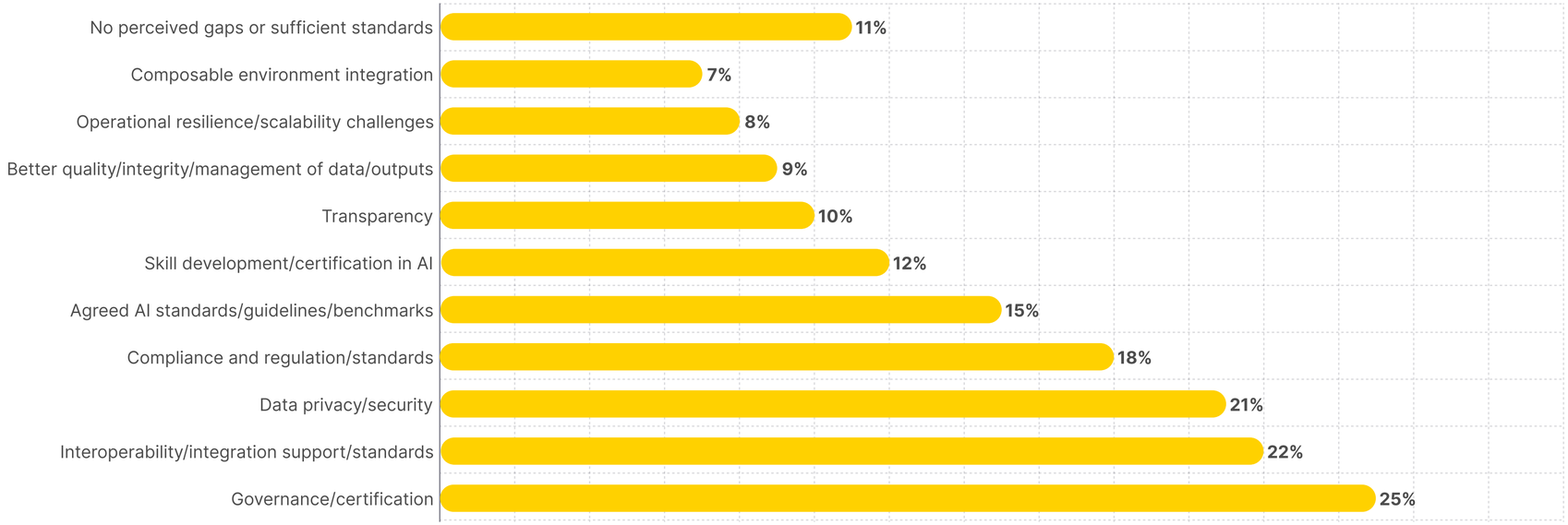
Compared to average…

- Retail and eCommerce organizations are more concerned about all these issues
- Technology organizations are more concerned about bottlenecks, data access and composable skill gaps

Q14. How concerned are you about each of the following in the context of your organization's AI implementation?
Base: n=600

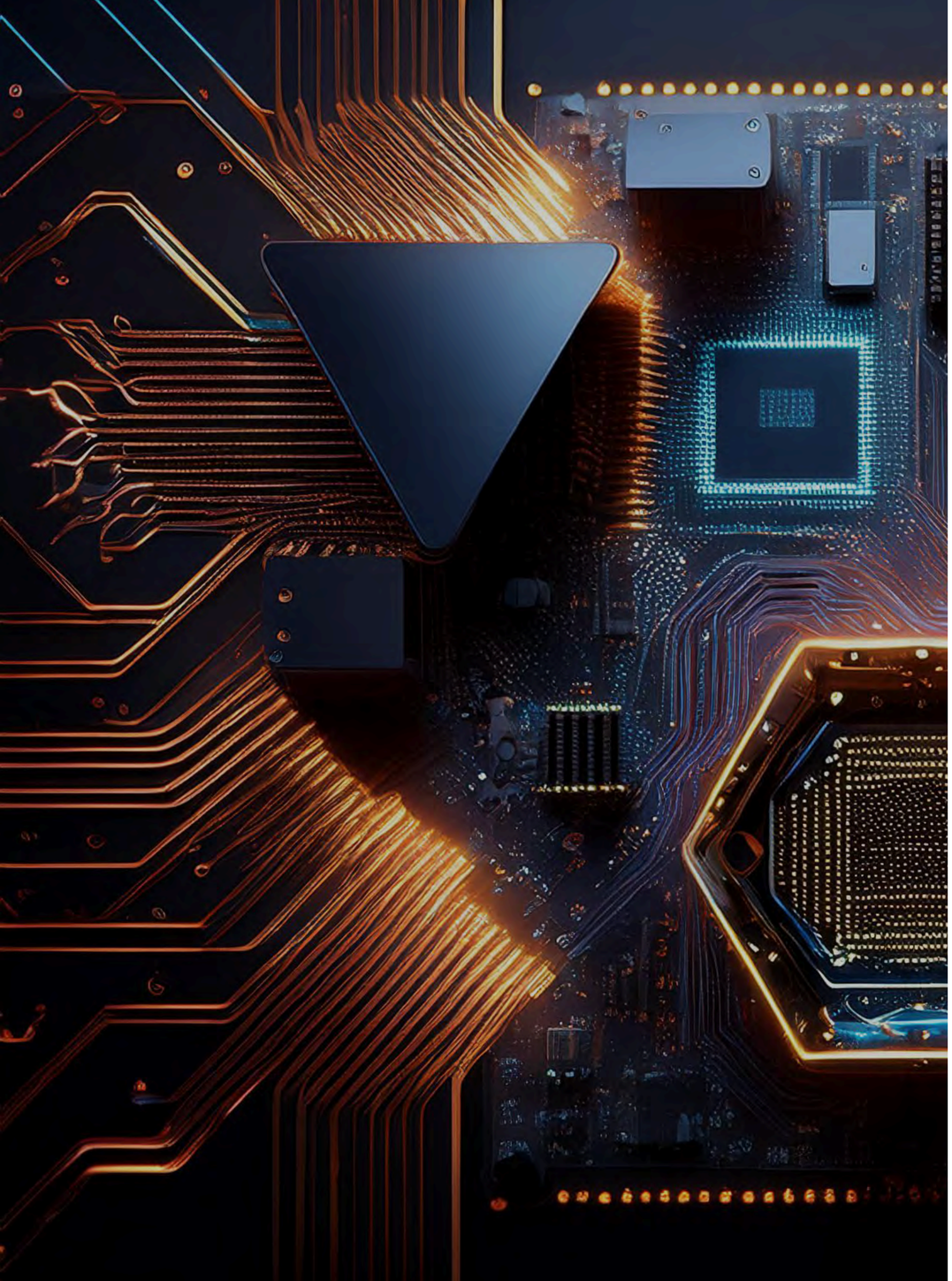
The appetite for standards and certifications for AI solutions in composable environments is strong

Decision makers feel there are gaps in terms of governance, interoperability and integration standards, data privacy and security, compliance, agreed standards for AI use, and support with AI skill development



89% believe that standards and certifications are missing for AI solutions in composable environments

Q15. What, if anything, do you believe is currently missing in terms of specific standards or certifications for AI solutions in composable environments?
Base: n=597, those who answered the question. Showing codes >2%



Additional insights

> “Granular AI Governance - Standards are needed for the continuous, granular governance of AI models themselves, beyond general IT security. This includes specific certifications that ensure ongoing monitoring of model performance and a robust system for accountability and incident response specific to AI systems.”

CTO, Australia

> “An industry wide compliance framework to ensure best practices.”

Customer Relations Director, UK

> “Interoperability standards for AI tools in MACH architectures.”

Systems Administration Supervisor, Singapore

> “There is a lack of clear and harmonized standards regarding data governance (security, privacy, GDPR compliance), certifications ensuring the robustness and scalability of AI solutions in composable/MACH environments, as well as standards to ensure algorithm transparency, traceability of the data used, and explainability of decisions.”

Directeur Informatique, France

Q15. What, if anything, do you believe is currently missing in terms of specific standards or certifications for AI solutions in composable environments?
Base: n=597, those who answered the question. Showing codes >2%

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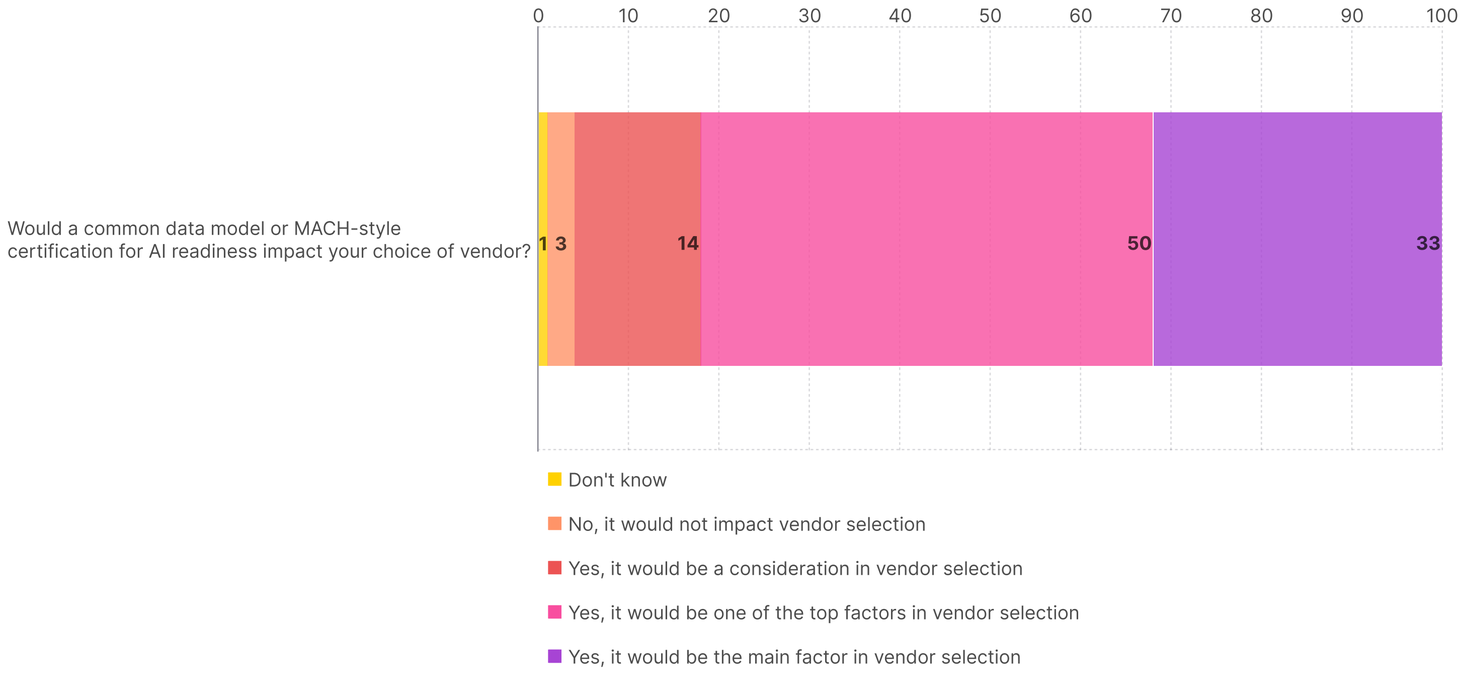
THE ROLE OF THE ALLIANCE

There is appetite for a common data model or MACH-style certification so much so that it would impact vendor choice for almost all



97% feel that a common data model or MACH-style certification would impact their choice of vendor

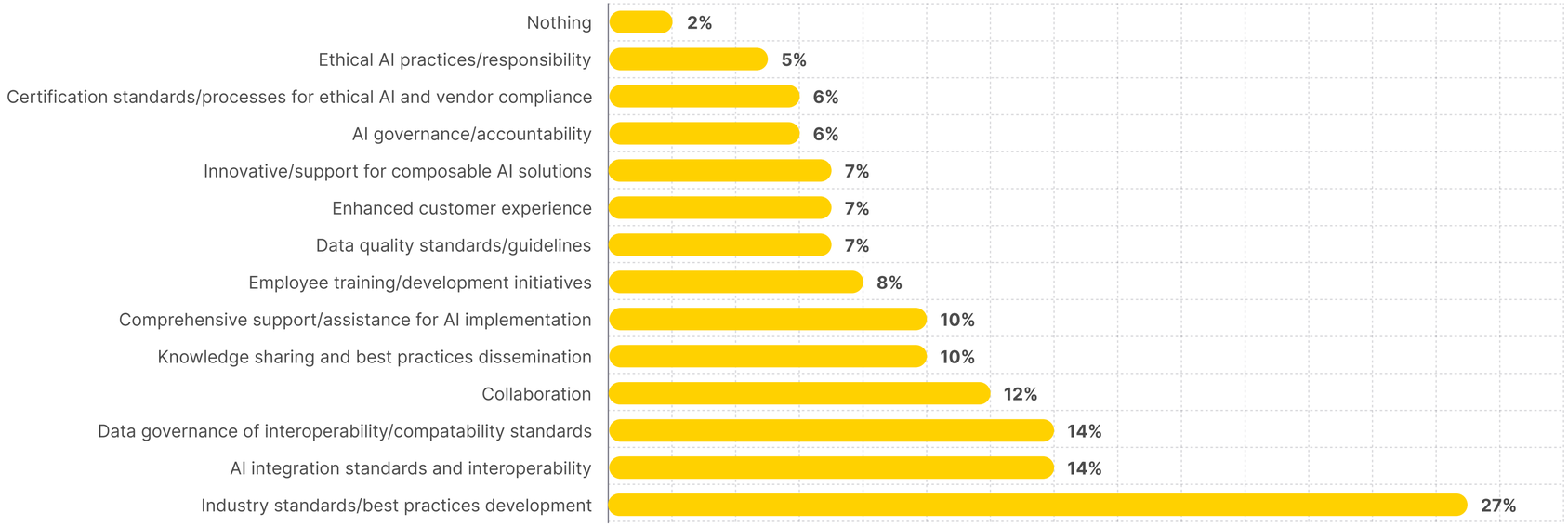
Differences

A common data model or MACH-style certification is even more likely to be a factor in vendor selection for:

- Organizations in the Tech sector
- C-suite
- Organizations most mature in terms of MACH and AI adoption
- Those who have heard of MACH Alliance

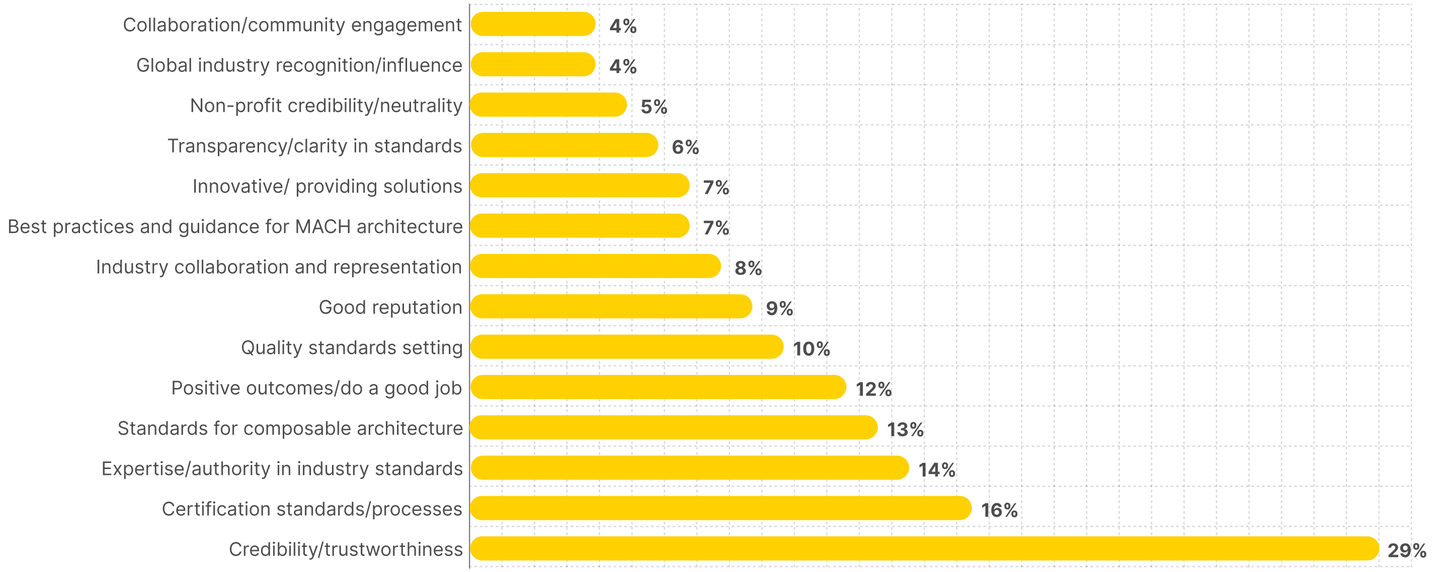
Q15. What, if anything, do you believe is currently missing in terms of specific standards or certifications for AI solutions in MACH environments?
Base: n=597, those who answered the question. Showing codes >2%

Decision makers feel that there is a space for MACH Alliance to move into, to offer guidance, standards and recommend best practice on use of AI in composable environments



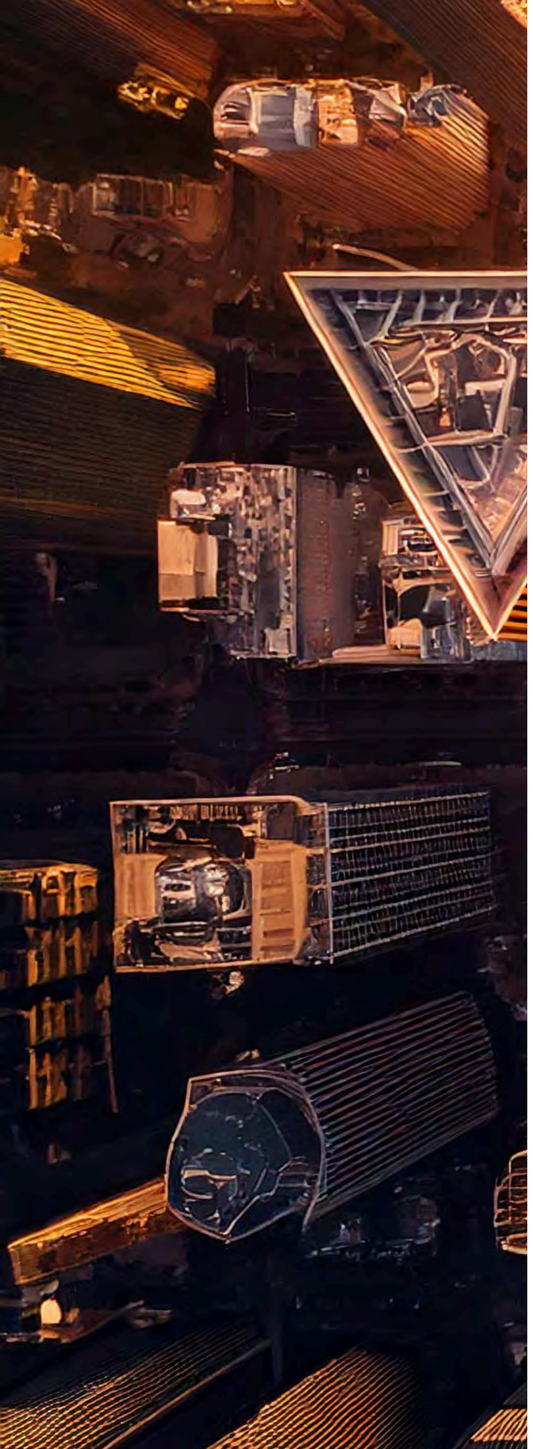
Q19. Thinking about the current composable and AI landscape, please describe any gaps or areas that you feel MACH Alliance could help address or support?
Base: n=598, those who answered the question. Showing codes >5%

Credibility is driven by associated qualities of trustworthiness, existing certification and quality standards, perceived expertise and authority, industry collaboration and representation, transparency and neutrality



95% feel that MACH Alliance are credible as a standard-setting and certification body in the composable enterprise architecture space

Q20. How credible do you feel MACH Alliance would be as a standard-setting and certification body in the composable enterprise architecture space?
Q21. Why do you feel MACH Alliance is a credible standard-setting and certification body in the composable enterprise architecture space?
Base: n=567, those who feel MACH Alliance is credible in this space and answered the question. Showing codes >3%



About the MACH Alliance

> “Because it's built on a clear vendor neutral philosophy. Not just promoting a single platform, but champions a set of principles.”

Director of Information Technology, Singapore

> “Because it doesn't rely on specific providers, has extensive national coverage, possesses specialized knowledge, and operates with great transparency.”

Digital Transformation Director, US

> “They are trustworthy.”

CTO, Canada

> “It is an independent organization that is not new to certifications when it comes to composable architecture.”

Directeur de Projects Informatique, France

> “They’re well-recognized and respected, but broader global adoption and more rigorous certification criteria could further strengthen their authority.”

CFO, UK

> “It's credible because it has a name that's been an industry standard for a long time.”

Director of IT, US

> “They are the de facto standard-setters and I have no reason not to trust them.”

CTO, US

> “Mainly based on its independence, professionalism, certification system, community ecosystem and industry influence.”

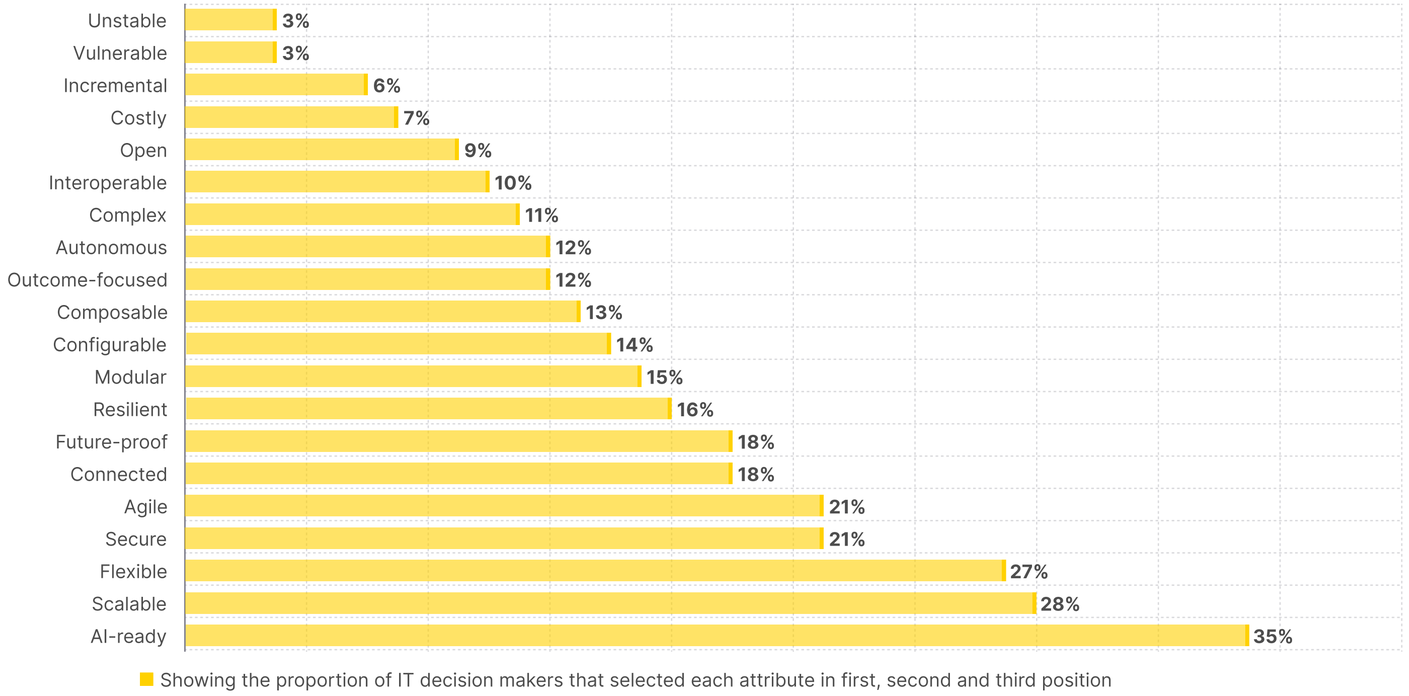
CEO, Australia

> “Since they are experts in the field, I consider them very credible.”

Head of IT, Germany

Q21. Why do you feel MACH Alliance is a credible standard-setting and certification body in the composable enterprise architecture space?
Showing a selection of open text responses

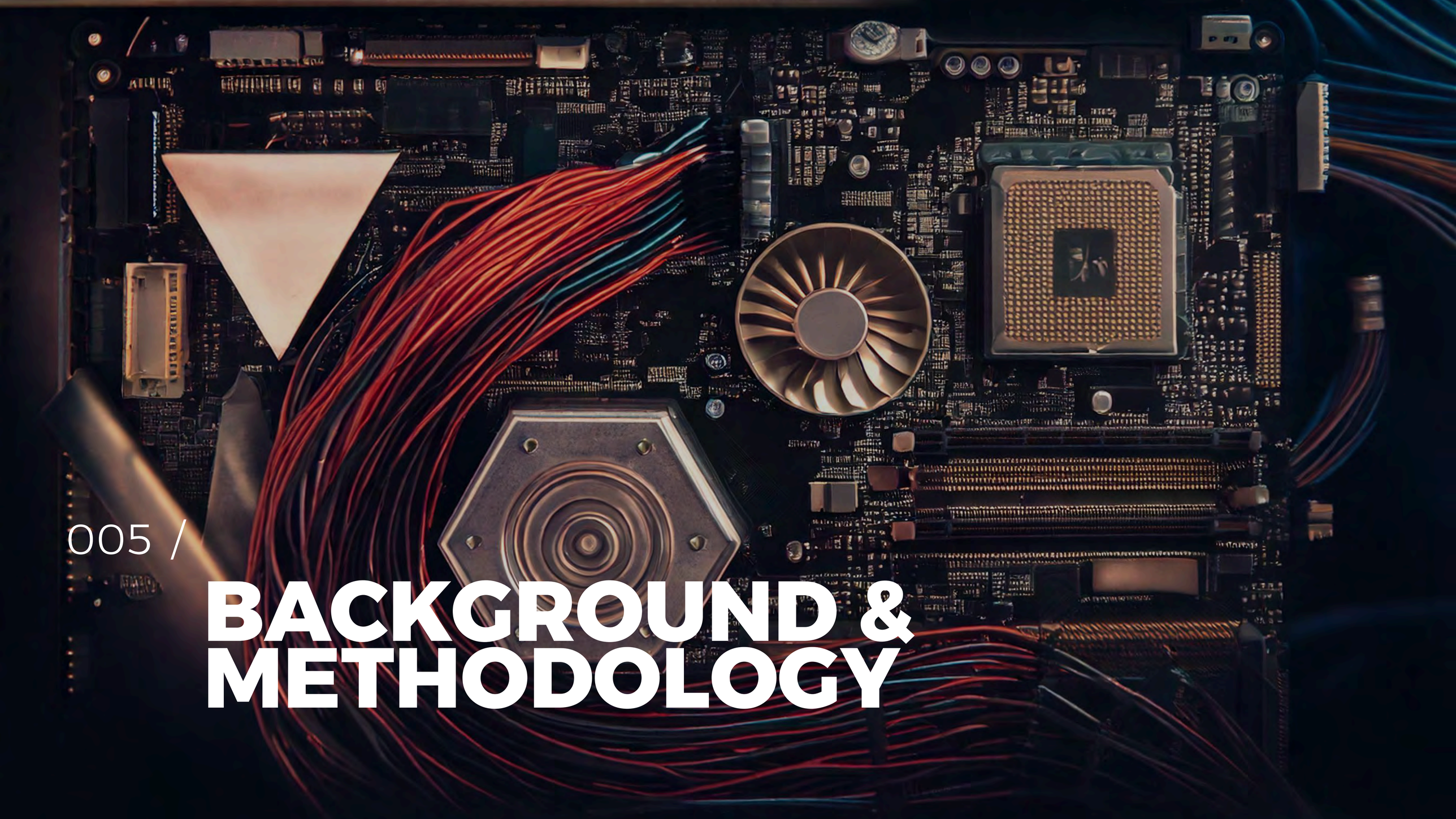
Among a list of prompted attributes, decision makers most strongly associate composable architecture with AI-readiness Although AI-readiness is likely to have been top of mind due to survey content, this finding further supports the view that composable architecture successfully underpins the implementation of AI.



Market differences

- "AI-ready" resonates particularly strongly among UK organizations compared to all other markets
- Compared to average…
  - Australian organizations were more likely to select flexible, modular, and outcome-focused
  - German organizations were more likely to select future-proof
  - Organisations in Singapore were more likely to select interoperable
  - Organisations in France were more likely to select scalable

Q21. Why do you feel MACH Alliance is a credible standard-setting and certification body in the composable enterprise architecture space?
Base: n=567, those who feel MACH Alliance is credible in this space and answered the question. Showing codes >3%



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BACKGROUND & METHODOLOGY

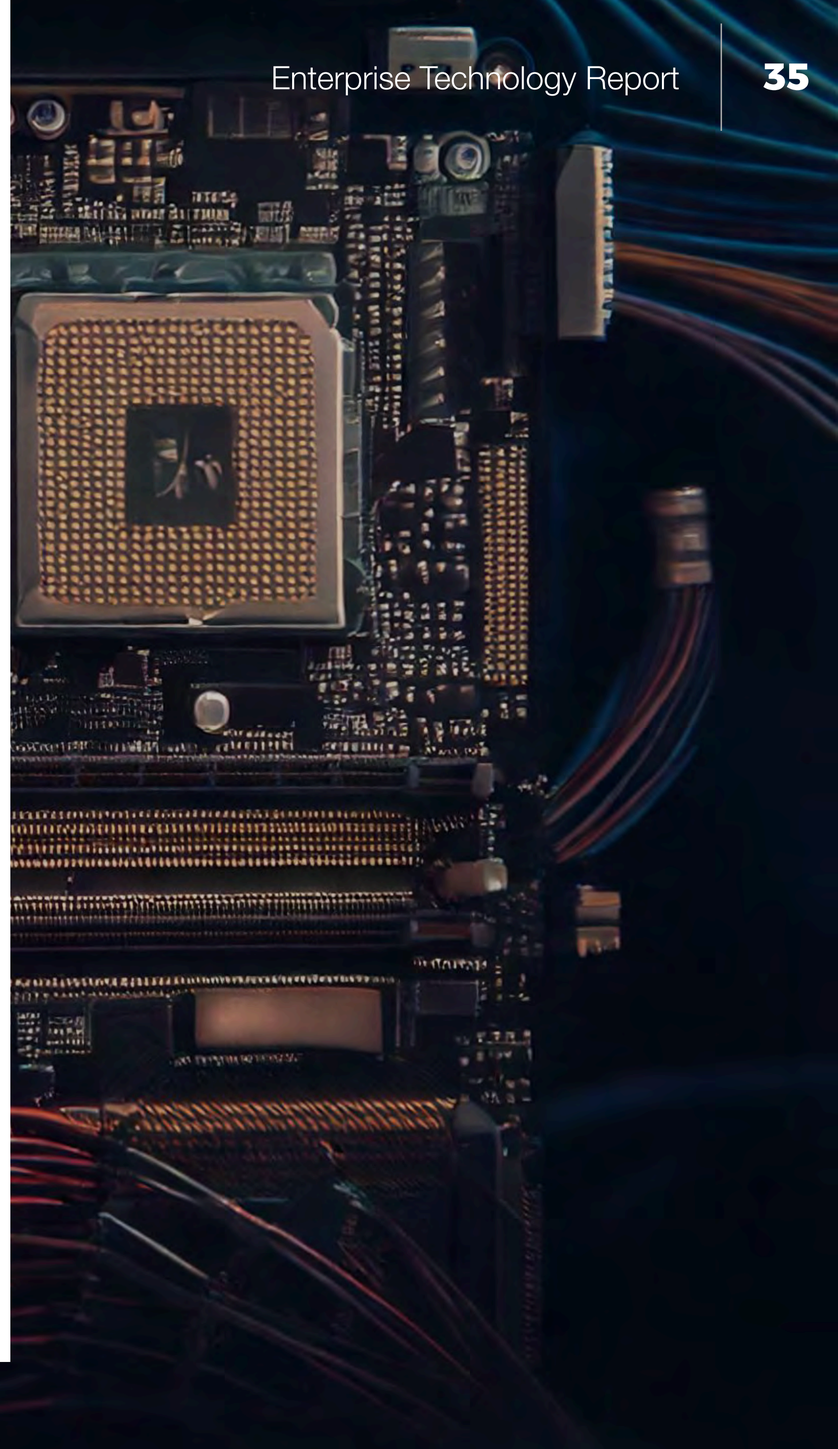
Background & Objectives

MACH Alliance have historically conducted annual research to track enterprise organizations' adoption and use of composable technology.

Given the now widespread adoption of composable technology, and in the context of the global acceleration of AI uptake, the Alliance is now exploring how composable technology can support organizations' adoption of AI.

Specific areas of interest include:

- Exploring organizations' readiness for AI and the role that composable technology plays in this
- Understanding the benefits experienced when both elements are utilized together and, specifically, the assumption that composable + AI leads to better business outcomes
- Exploring friction points and the appetite for guardrails
- Understanding the positioning that MACH Alliance can take in this new landscape and the messaging that can be used



Methodology

Phase 1 was conducted among n=105 retail/e-commerce IT decision makers in the US and UK. A small number of questions were then optimized for Phase 2.

Phase 2 included n=495 IT decision makers from a broader range of markets and sectors. Data was combined to produce a reporting base of n=600.

Initial questions and objectives were proposed by MACH Alliance. The quantitative survey was then drafted by M·E·L Research and reviewed collaboratively with MACH Alliance.

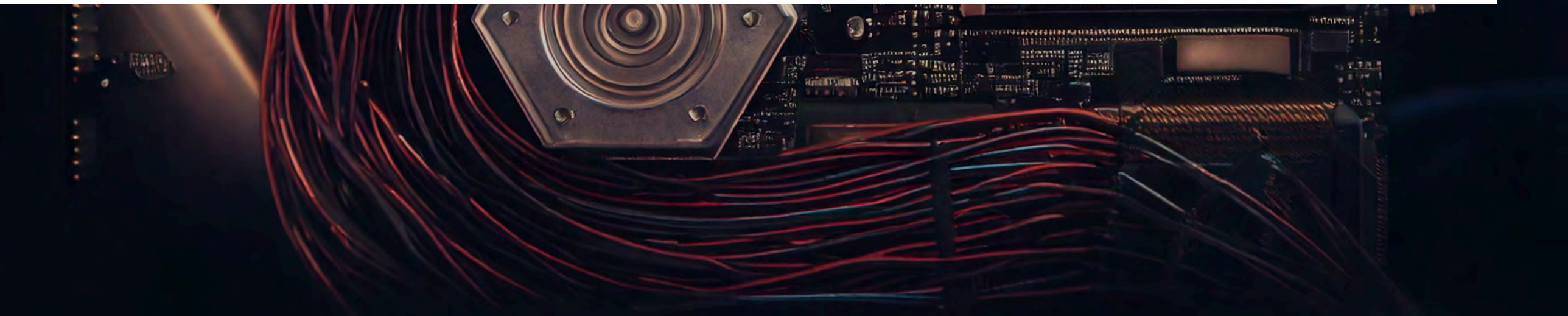
The 10-minute survey was programmed in-house by M·E·L Research.

The survey was distributed to respondents via a leading online panel partner.

Respondents self-completed the survey online. Fieldwork for both phases took place between 6 August and 17 November 2025.

The data was cleaned, processed and tabulated by M·E·L Research.

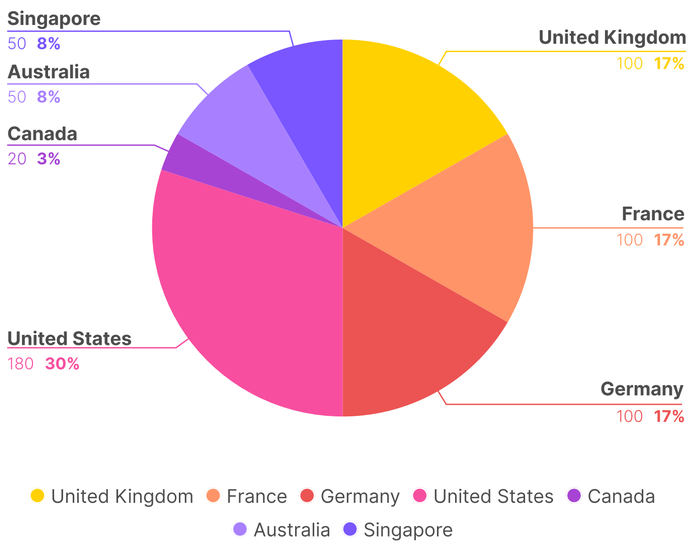
The results were then analysed by M·E·L Research and the findings are outlined in this report.



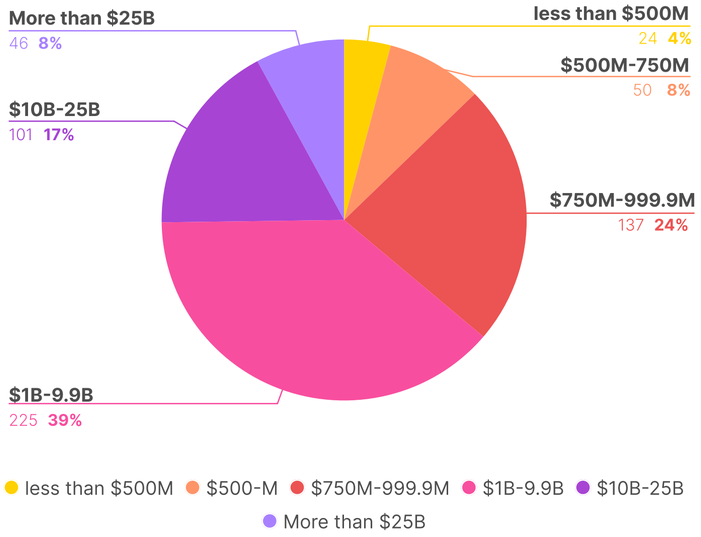
Background & methodology

We spoke to 600 enterprise technology decision makers working in organizations with 5,000+ employees or at least $500M global annual turnover

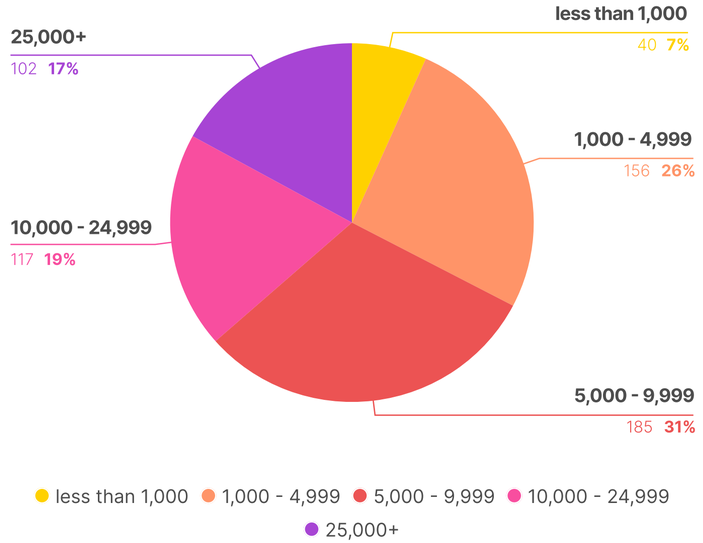
Country



Global annual turnover



Number of employees

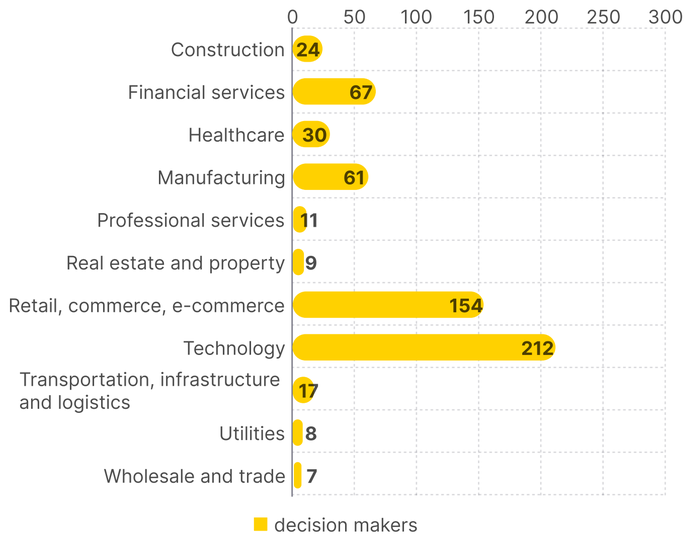


S01 Country, S06 Global annual turnover, S03 Number of employees
*All monetary references in this report are in USD

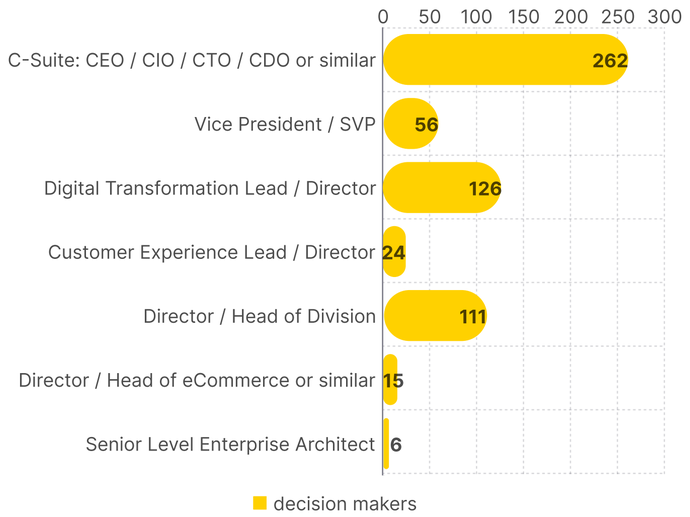
Background & methodology

We spoke to 600 enterprise technology decision makers working in organizations with 5,000+ employees or at least $500M global annual turnover

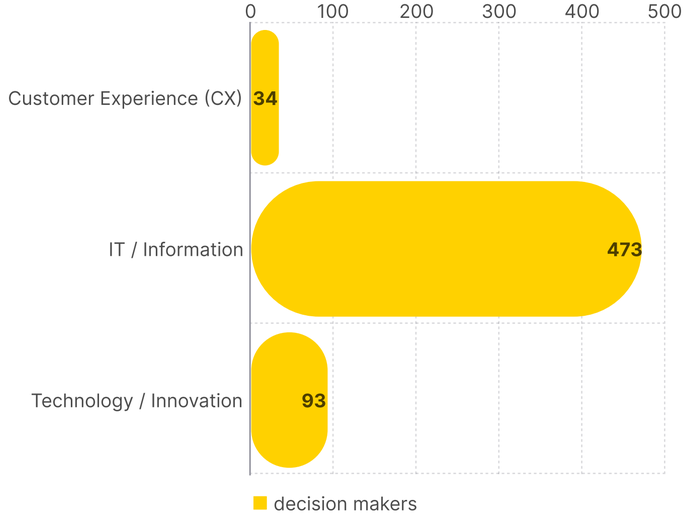
Industry



Seniority



Role



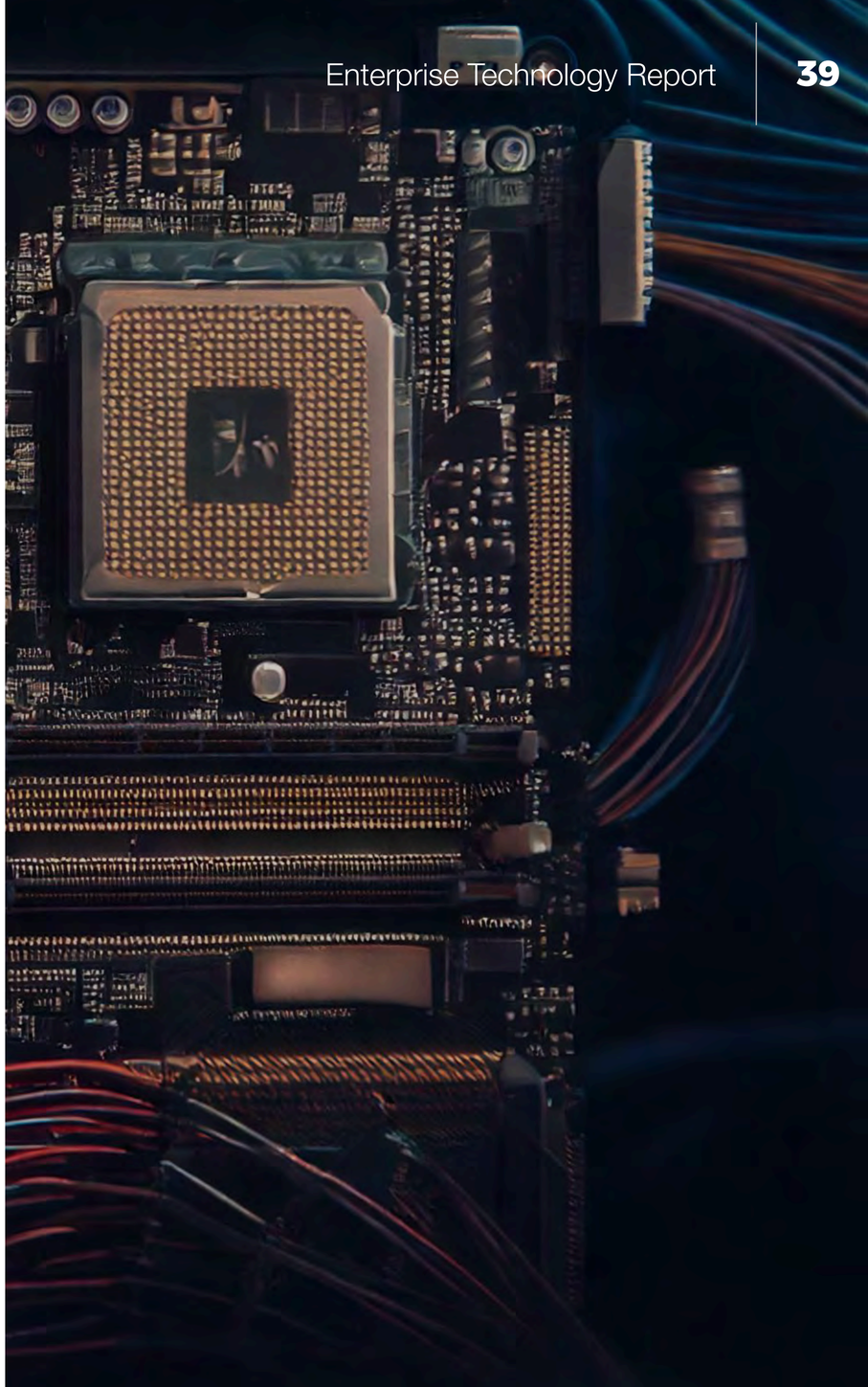
⚠ N.B Base sizes for Financial services, Manufacturing, Retail and Technology are large enough for analysis and have been included as data splits throughout the report. The base size for Healthcare (30) is low but large enough to be indicative, and so has also been included in the report – however, please bear the low base size in mind when interpreting findings

S02 Industry, S05 Seniority, S04 Role

Definitions

The following definitions were provided throughout the survey to ensure participants were clear on terminology and used the same frame of reference:

- **MACH technology**: This is a modern enterprise architecture approach that uses independent software components to build systems flexibly. This is in comparison to legacy monolithic software that has versions, needs upgrading and runs on-premise or is hosted.
- **Composable**: This is a modular pattern for software architecture that allows for building, using and reuse of self-contained software components.
  - The terms ‘MACH’ and ‘composable’ are often used interchangeably in the industry and so we asked respondents to consider both definitions throughout the survey.
- **Monolithic architecture**: This is an integrated design approach for software where all components are built into one unit.
- **Artificial Intelligence (AI)**: Technology that can learn, solve problems, reason and act in a way that approximates human intelligence.

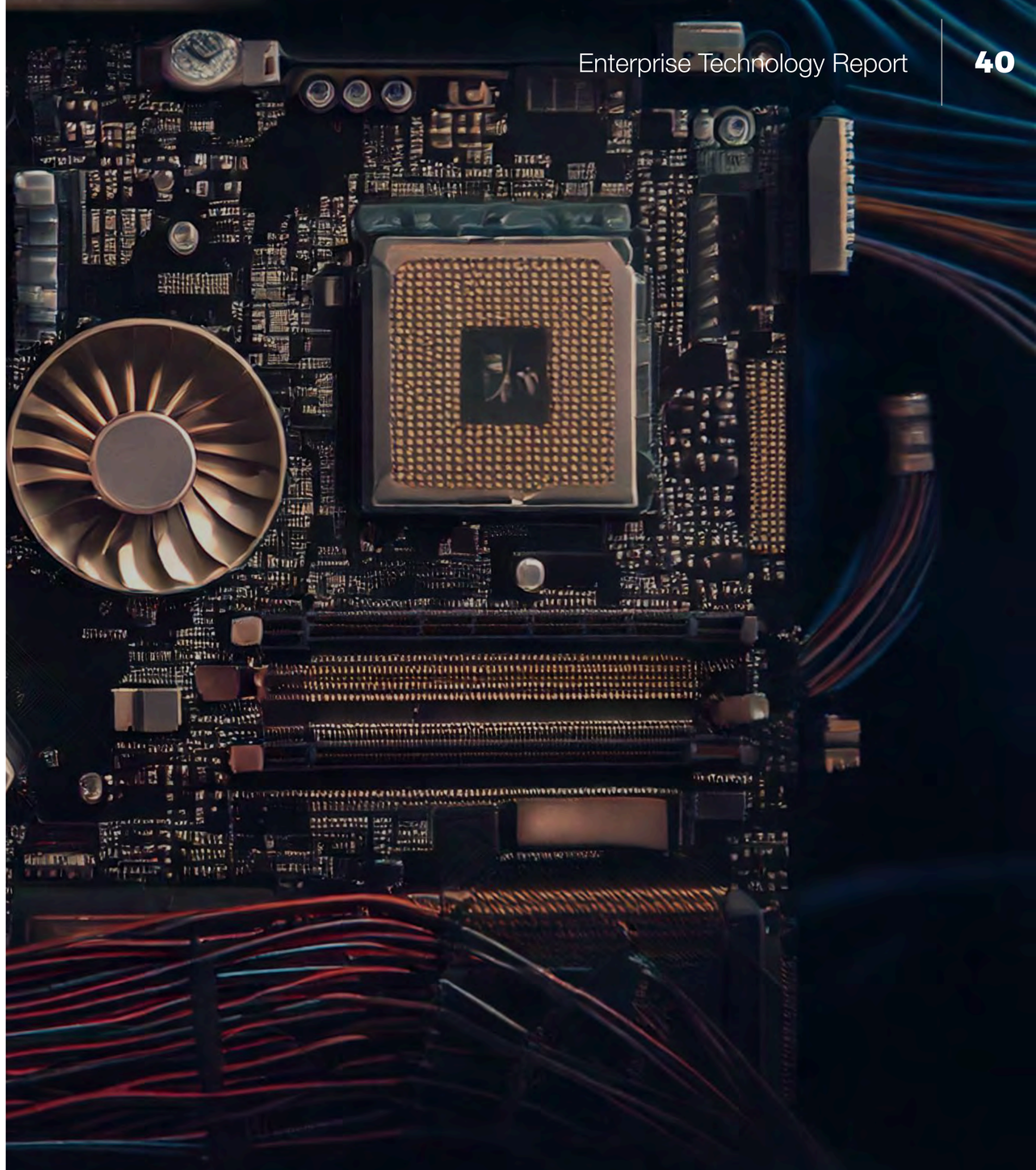


* For the purpose of the survey, MACH and composable architecture were treated as interchangeable to simplify terminology for respondents. However, the MACH Alliance recognizes that MACH represents a specific subset of composable architecture.

Use of AI in this research

AI was used to assist with data cleaning and coding of open-text questions in this research.

- Together with detailed human checks, AI was used to support identification of sub-standard interviews so they could be replaced with high-quality responses
- A purpose-built AI platform was used to create code frames and code all open-text questions. All code frames and 10% of coded responses were reviewed by humans to ensure accuracy
- Data entered into our AI platforms is anonymized and contains no personal information
- Data entered into our AI platforms is not used to train any AI models
- AI use in this research and report complies fully with M·E·L's Generative Artificial Intelligence Policy, a copy of which is available on request
- AI has not been used in this research in any way other than described above



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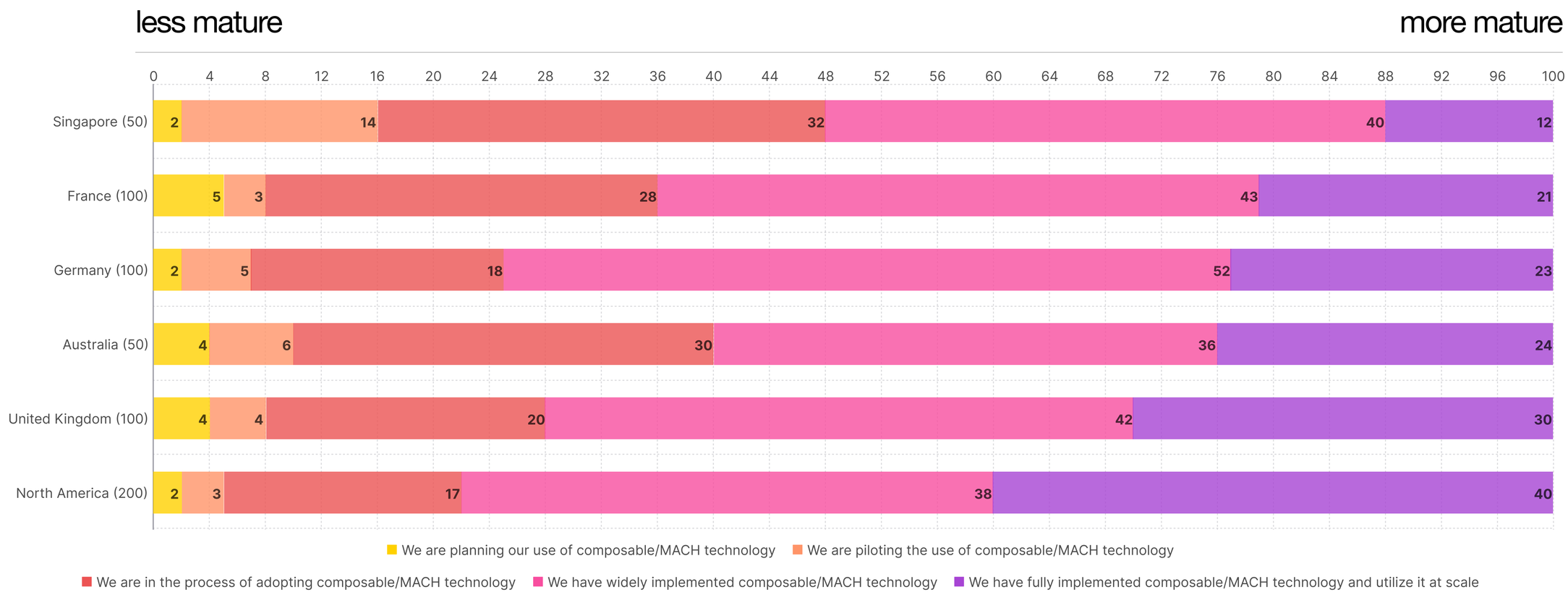
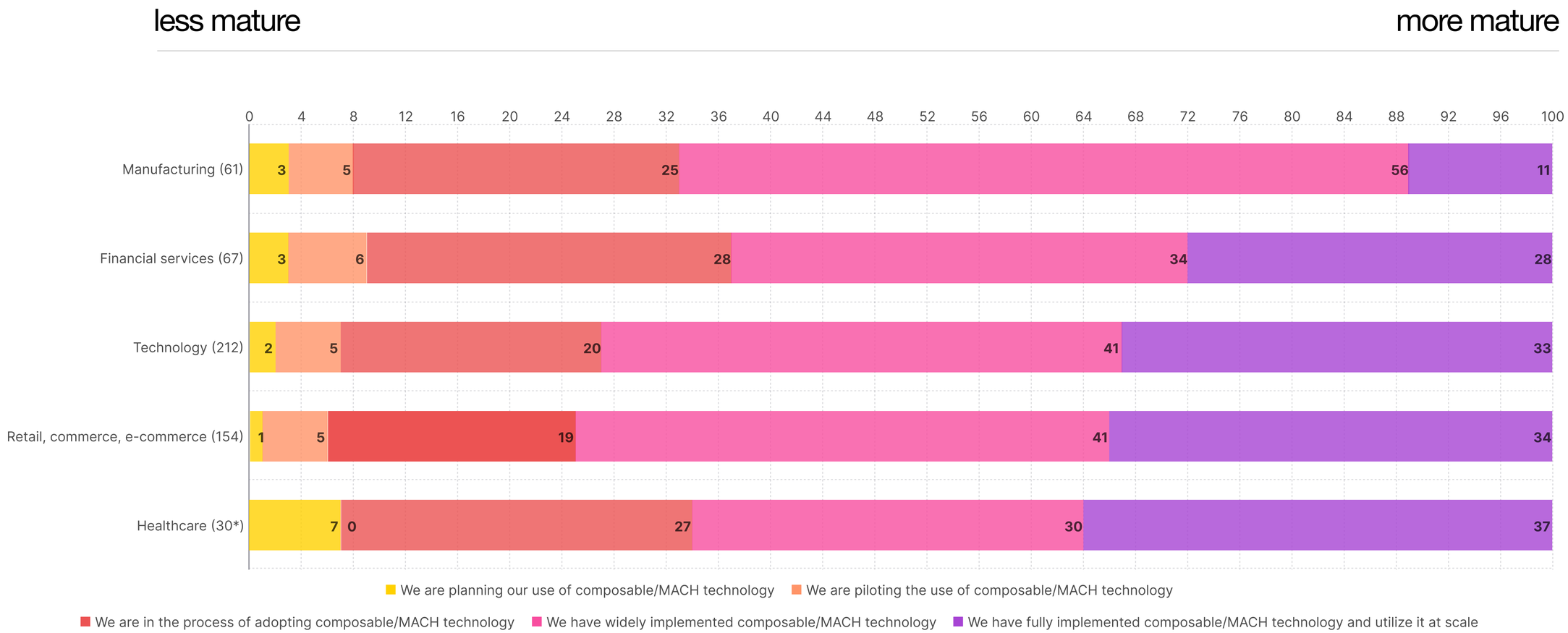
APPENDIX

North America lead the way with composable implementation, with organizations in other markets also demonstrating the push towards adoption



Q1. Which of the following statements best describe where you feel that your organization is on their composable/MACH journey?
Base: In parentheses

The push towards composable can be seen across sectors



Q1. Which of the following statements best describe where you feel that your organization is on their composable/MACH journey?
Base: In parentheses. * denotes low base size, use caution with interpretation

Organizations in the UK and North America are furthest ahead with AI adoption, with Germany and France not far behind

Q2. Which of the following best describes how your organization uses Artificial Intelligence (AI)?
Base: In parentheses

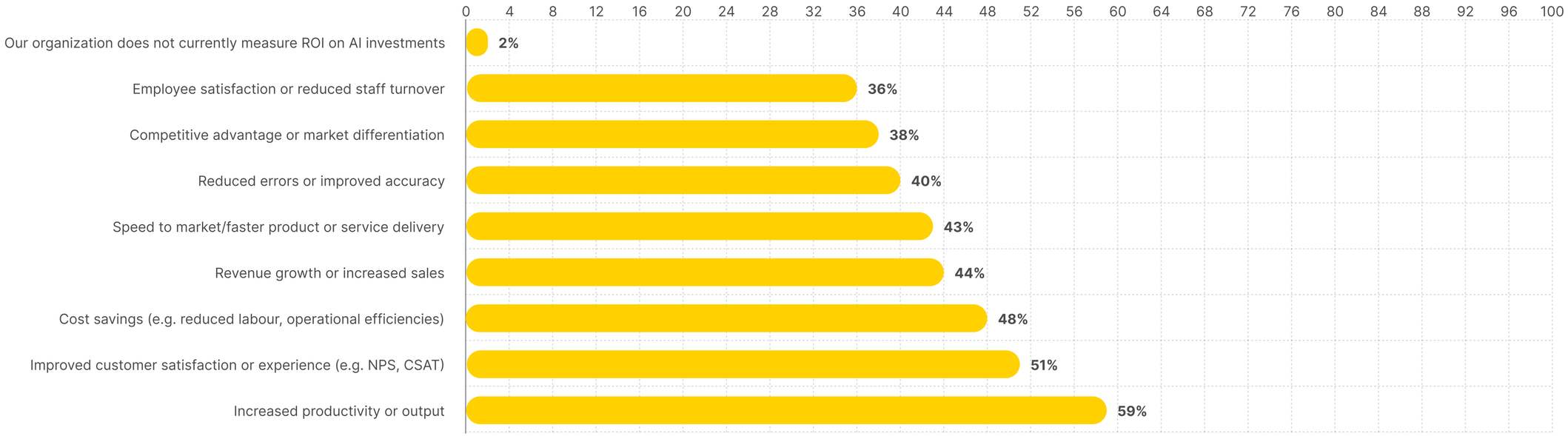
Rapid AI adoption can be seen across sectors

Q2. Which of the following best describes how your organization uses Artificial Intelligence (AI)?
Base: In parentheses. * denotes low base size, use caution with interpretation

The link between organization age and AI adoption does not mirror that of composable implementation – barring the youngest organizations*, the pace of AI adoption is similar regardless of organization age

Q2. Which of the following best describes how your organization uses Artificial Intelligence (AI)?
Base: In parentheses. * denotes low base size, use caution with interpretation

Almost all organizations measure ROI on AI investments, with increased productivity or output the most common measure

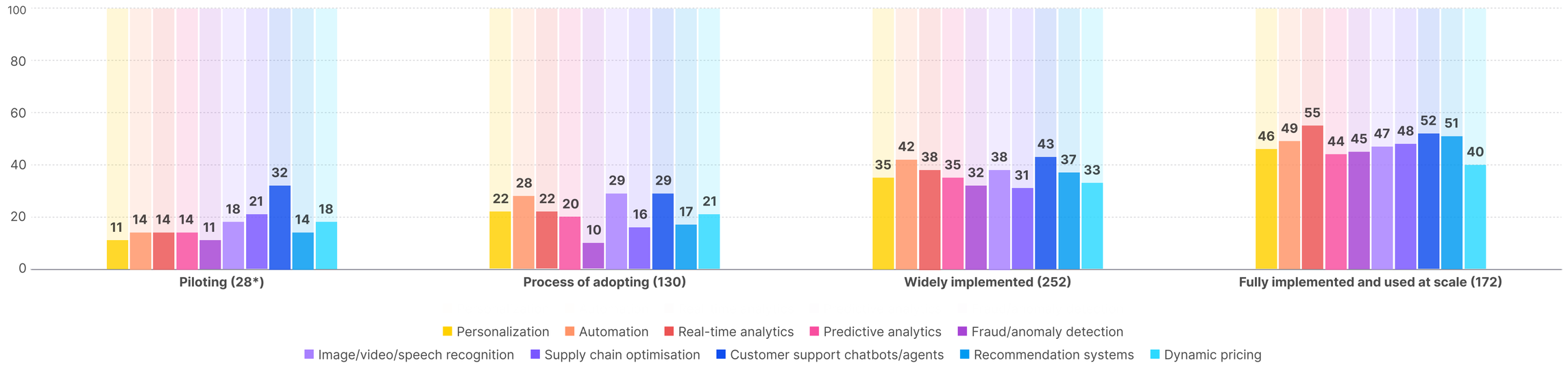


98% measure ROI on AI investments

Q2. Which of the following best describes how your organization uses Artificial Intelligence (AI)?
Base: In parentheses. * denotes low base size, use caution with interpretation

The oldest organizations, held back by their slower transition to composable, demonstrate less confidence in their tech setup's ability to support AI adoption compared to younger organizations

Percentage that say it's very easy to implement AI-use case in composable environment



Q13. How easy have the following AI-use cases been to implement in composable/MACH environments?
cut by Q1. Which of the following statements best describe where you feel that your organization is on their composable/MACH journey?
Base: In parentheses. * denotes low base size, use caution with interpretation

Continue the Conversation

Join the global MACH community shaping the future of enterprise architecture.

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- machalliance.org/agent-ecosystem
- community.machalliance.org
- machalliance.org/ridemach
- linkedin.com/company/machalliance

Questions?

Contact info@machalliance.org.

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