State of
Design & Make

AUTODESK

D&M INDUSTRY REPORT

2024
2025
25
2026
2027

Contents

AUTODESK

About the D&M report

The *State of Design & Make* report is a global, annual, longitudinal study for leaders who design and make places, objects, and experiences. It identifies the most pressing issues shaping today's businesses and helps leaders make informed, strategic decisions about how to prioritize and invest for the future.

For the *2025 State of Design & Make D&M industry* report, Autodesk surveyed and interviewed 1,925 industry leaders, futurists, and experts across product design and manufacturing (D&M). Survey data has been broken down by global region: Asia-Pacific (APAC); Europe, Middle East, and Africa (EMEA); and the Americas (AMER). This is the third longitudinal year of this report series with data comparisons from the previous two reports.

What is Design and Make?

A convergence of technologies and methodologies in industries that produce digital and built assets over the past 40-plus years has resulted in a distinct category of work: Design and Make. Design and Make shapes the surrounding world, translating complex ideas into powerful experiences, whether it's transforming a sketch into a school, turning a concept into a car, or making a myth into a movie. Globally, Design and Make employs, conservatively, 295.7 million people.[1]

Before digitalization, much of this work took place in discrete, siloed phases, handed off from specialist to specialist. With the advent of digital workspaces and modeling tools, these phases have converged into a centralized way of working informed by data-driven insights. Today, teams collaborating on Design and Make projects see their work as part of a larger, interconnected process. Digital tools and standards make it easier to map interdependencies, refine processes, and democratize solutions.

For the professionals immersed in it every day, Design and Make is more than a way of working—it's a philosophy and a mindset. It represents a deep belief that every challenge and complexity can be overcome with the right tools and the right skill set. Designers and makers are optimists united by a shared drive to make a better world for all.

[1] World Economic Forum, 2023

AUTODESK

Introduction

Leaders in design and manufacturing report that they are confronting daunting headwinds, from increased geopolitical uncertainty and inflation to talent gaps and challenges implementing emerging technologies like artificial intelligence (AI). But for the third year, digital transformation has proven to help D&M organizations identify opportunity amid disruption, providing benefits nearly across the board.

2025 State of Design & Make key findings in D&M

Leaders were clear on the challenges they are facing.

Cost control remains top of mind for D&M organizations amid continued inflation and increasing supply-chain fragility. Implementation of AI and emerging technologies is the second most-cited challenge, one that is compounded by both cost and labor concerns. Environmental sustainability remains a perennial problem, with 26% of D&M organizations saying it's a top challenge.

Optimism about AI is down, and concern about its destabilizing effects is up among leaders in D&M as organizations struggle with implementation and finding practical use cases for the new technology. And, finally, global uncertainty is depleting organizational confidence and increasing feelings of unpreparedness.

Despite this uncertainty, business leaders in D&M are still feeling bullish in some areas as they identify opportunity amid disruption.
.

- Although overall investments are down year-over-year, 64% leaders in D&M say they will increase overall future investments.

- Sustainability is experiencing a surge of optimism, with 95% of leaders saying their organizations are taking steps to be more sustainable. Sustainability also continues to be a key differentiator in talent acquisition.

- This year, AI solidified its place as the top sustainability enabler for D&M organizations, with applications from natural-disaster mitigation to project lifecycle management.

One standout finding this year is that most leaders surveyed say digital transformation efforts led to improvements at their organizations. The majority of organizations benefiting from digital transformation are seeing more than 50% improvements in categories such as customer satisfaction, innovation, and productivity. Digitally mature companies tend to invest more heavily in technology, and those investments are now paying outsize dividends during the current period of caution.

AUTODESK

The digital maturity difference in D&M

In this report, "digitally mature" companies are defined as those that are approaching or have achieved the goal of their digital transformation journey. "Less digitally mature" companies are defined as those that are in the early stages or right in the middle of their digital transformation journey.

- Digitally mature D&M organizations are 37% more likely to diversify their supply chains, and leaders at these organizations feel more prepared to handle unforeseen changes compared to less digitally mature companies, giving them an advantage when it comes to resilience.

- These organizations are also more likely to leverage internal data to gain a competitive edge, more quickly develop products and services, and complete projects faster than other companies.

- Digital maturity eases talent concerns, with a 10-point improvement in talent acquisition and retention from their technological advancement over less digitally mature organizations.

- D& organizations that are digitally mature are more likely to enter new markets and increase investments into acquisitions, allowing them to expand while others are contracting.

There's no question that leaders in D&M organizations are confronting a challenging geopolitical and macroeconomic environment. But given the findings of the *2025 State of Design & Make* survey, a resilience agenda centered on digital transformation can provide strong protection against uncertainty.

AUTODESK
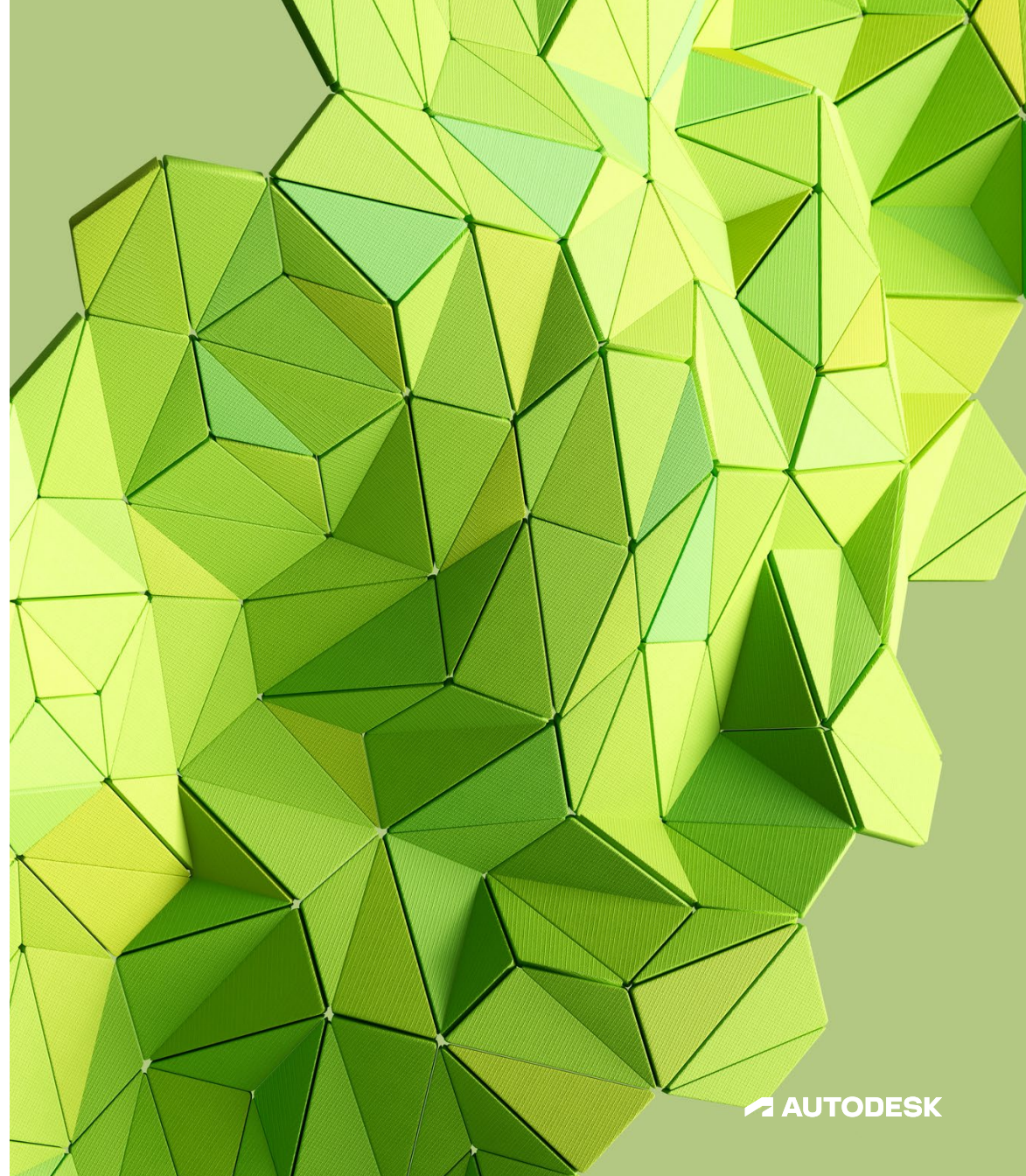
Digital transformation efforts have an overwhelmingly positive impact
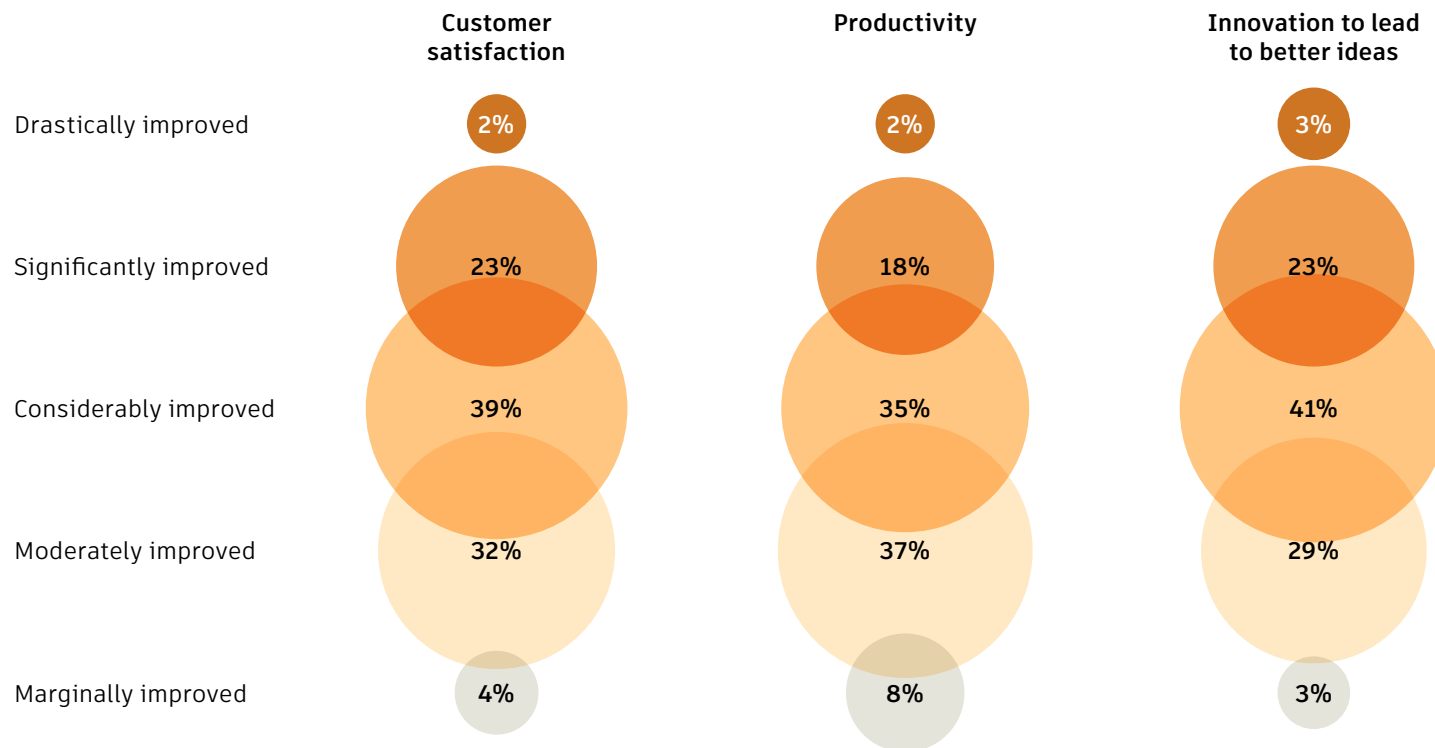
01

Implementation of new technology is a perennial challenge for leaders in design and manufacturing, but those who tackle the complexities of digital transformation are reaping the rewards of their efforts. Globally, the majority of D&M leaders surveyed for the *2025 State of Design & Make* report have already realized a 50%+ return on their digital transformation efforts in the form of increases in innovation, productivity, and other categories.

50%+
return on investment from digital transformation

Digital transformation efforts have an overwhelmingly positive impact

Majority of organizations realize more than 50% ROI from digital transformation

	Customer satisfaction	Productivity	Innovation to lead to better ideas
Drastically improved	2%	2%	3%
Significantly improved	23%	18%	23%
Considerably improved	39%	35%	41%
Moderately improved	32%	37%	29%
Marginally improved	4%	8%	3%

D&M respondents. Survey question: Has your company or organization experienced any of the following benefits of digital transformation? Select all that apply. Followed by survey question: You selected [benefit] as a benefit of digital transformation. How much has digital transformation improved [benefit]? Response scale: "Marginally," "Moderately, by 25%," "Considerably, by 50%," "Significantly, by 75%," and "Drastically, by 100%."

AUTODESK

Along with improvements in customer satisfaction, productivity, and innovation, leaders benefitting from digital transformation report it is also having positive effects on company reputation (72%), expansion of products and services (68%), and improved data exchange (67%).

"I would say the most exciting thing is to be on the journey with technology to see how technology is actually moving and expanding. Just going five years back, some of these technologies that we are seeing today were actually more or less really science fiction future. So I really think that technology and the steps that we are taking is very, very important. And I think also very, very exciting to see."

LARS ALBJERG
Head of BIM, Novo Nordisk, a pharmaceutical company headquartered in Denmark

Digital maturity benefits the entire organization

In this report, "digitally mature" companies are defined as those that are approaching the goal or have achieved the goal of their digital transformation journey. "Less digitally mature" companies are defined as those that are in the early stages or right in the middle of their digital transformation journey.

In D&M, respondents from digitally mature companies are more likely than their peers to report that they …

+30%
… more likely to have experienced "above average" or "exceptional" **performance**

+29%
… more likely to "agree" they **are prepared** for the future

+35%
… more likely to have "increased" or "strongly increased" **investment** in the past 3 years

+26%
… more likely to have kept up "very well" with **change in the industry**

With results like these, less digitally mature organizations thinking about reducing their digital transformation investments in the next few years should reconsider. The benefits of digitalization are clear, and the longer organizations take to get up to speed, the greater the drag on their performance will be. While sometimes challenging, the long-term benefits of digital transformation far outweigh short-term struggles.

AUTODESK

Cost, time, and talent are the biggest barriers to digital transformation
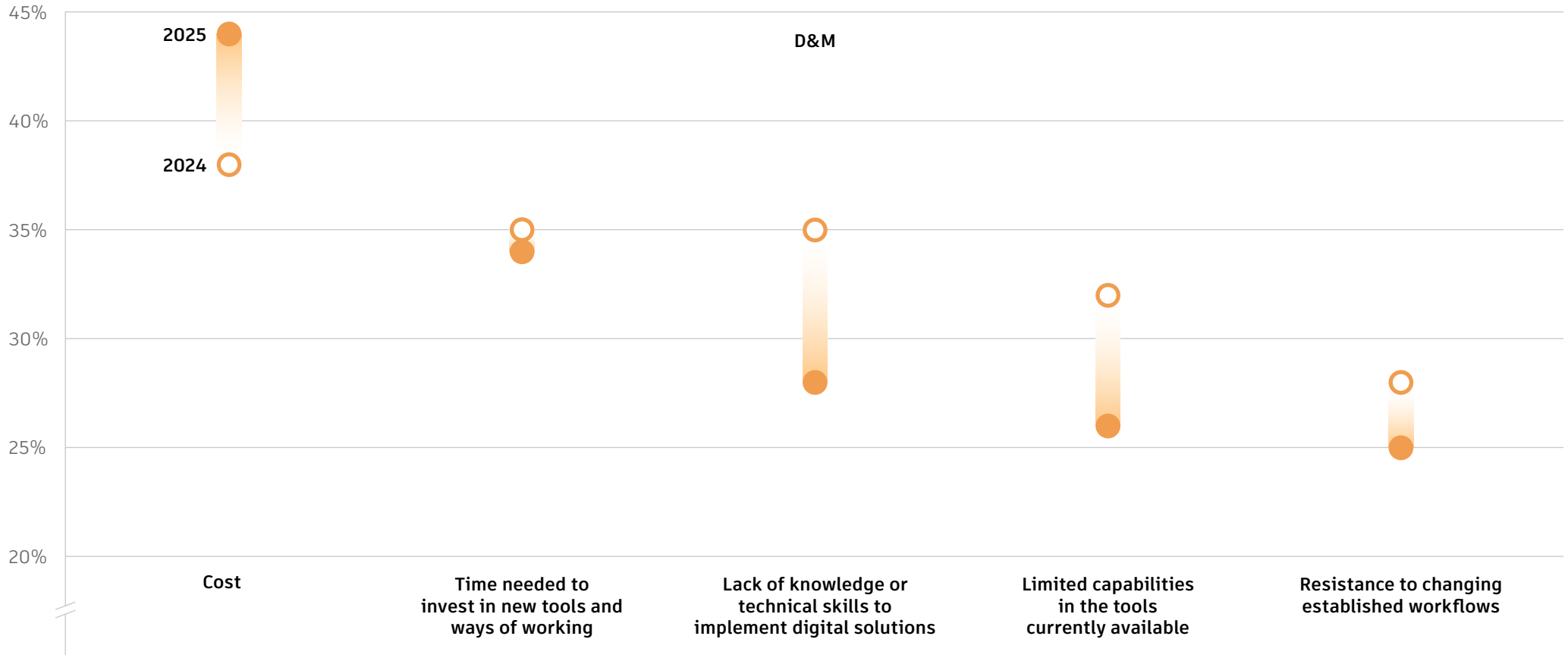
Survey question: What are the barriers to digital transformation in your company or organization? Select all that apply.

AUTODESK
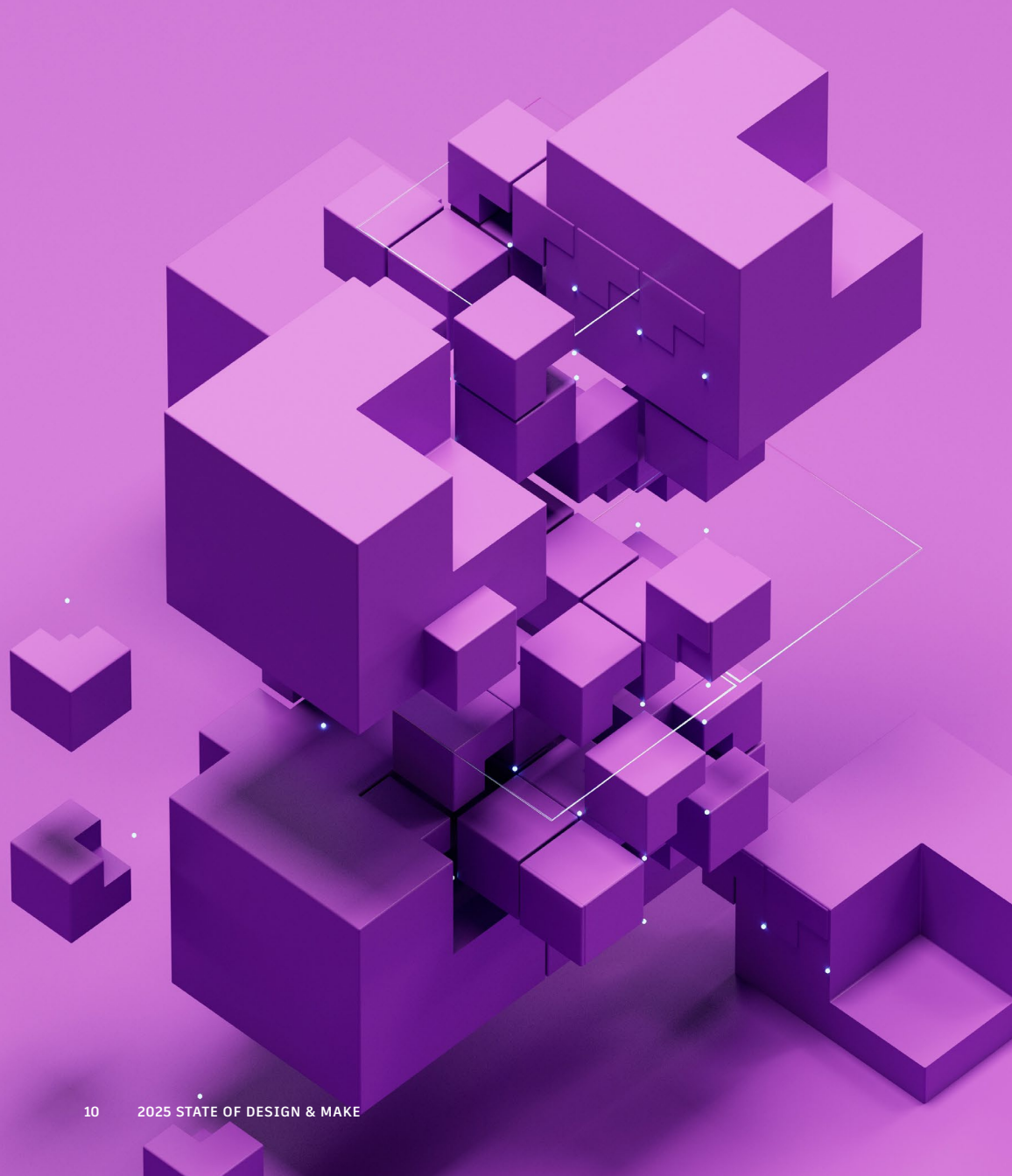
INSIGHT 1: D&M

The cost of digital transformation is a growing challenge for many D&M organizations, with 44% of leaders saying it's their main barrier, up from 38% last year and reflecting a global increase in concern about cost control. But given the outsized returns organizations are seeing from their digital transformation investments, cost-cutting measures could have equally outsized negative effects if they impact technology initiatives. Time and talent follow as most-cited obstacles as organizations struggle to meet implementation goals while also trying to do more with fewer resources.

The more digitally mature an organization, the less concerned they are with cost and talent and the more concerned they are with the actual technology. In D&M, digitally mature companies less often cite cost (43% compared to 45%), and more often cite the limited capabilities of the tools (28% compared to 23%) as a barrier. These organizations also have an advantage when it comes to talent, with 77% of leaders saying digital transformation has improved talent acquisition and retention compared to 53% at less digitally mature companies.

AUTODESK

Sustainability transitions from pressure to profitability

01

02

03
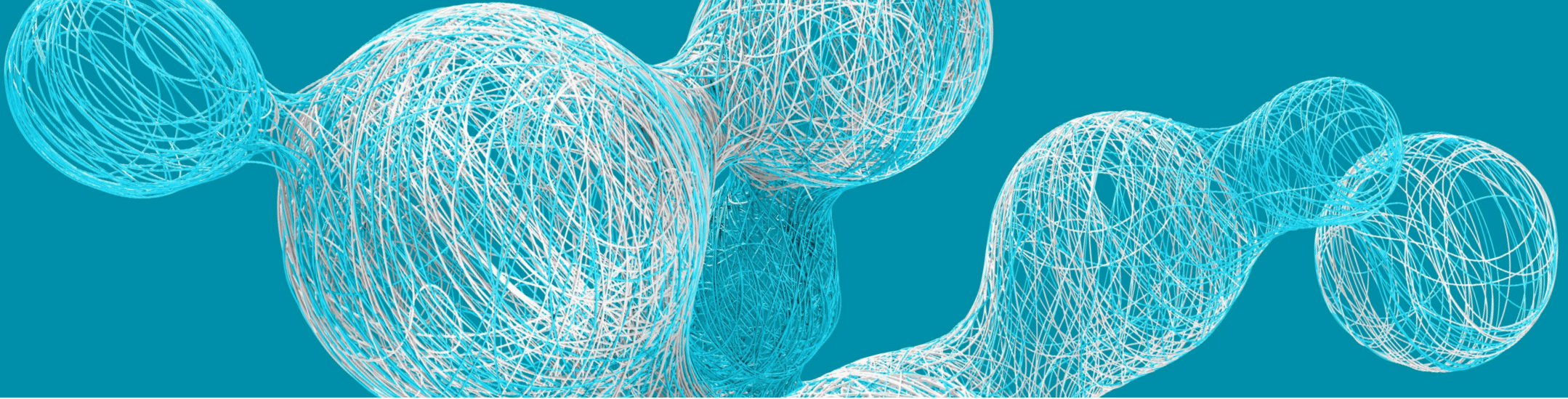
Increasing awareness of the business value of sustainability has many D&M leaders changing their perspective, seeing sustainability initiatives less as an obligation and more as an opportunity for greater performance. The number of executives globally who understand the business case for sustainability tripled between 2022 and 2023,[2] and the majority of *2025 State of Design & Make* survey respondents say that sustainability is crucial for future business growth in the next three years.

This signals a shift in sentiment and priorities, driven by both the short- and long-term opportunities that sustainability can provide. In D&M, 71% of business leaders believe that sustainability measures can generate in excess of 5% of their annual revenue, a figure that has remained relatively strong compared to last year (79%), despite this year's cost concerns.
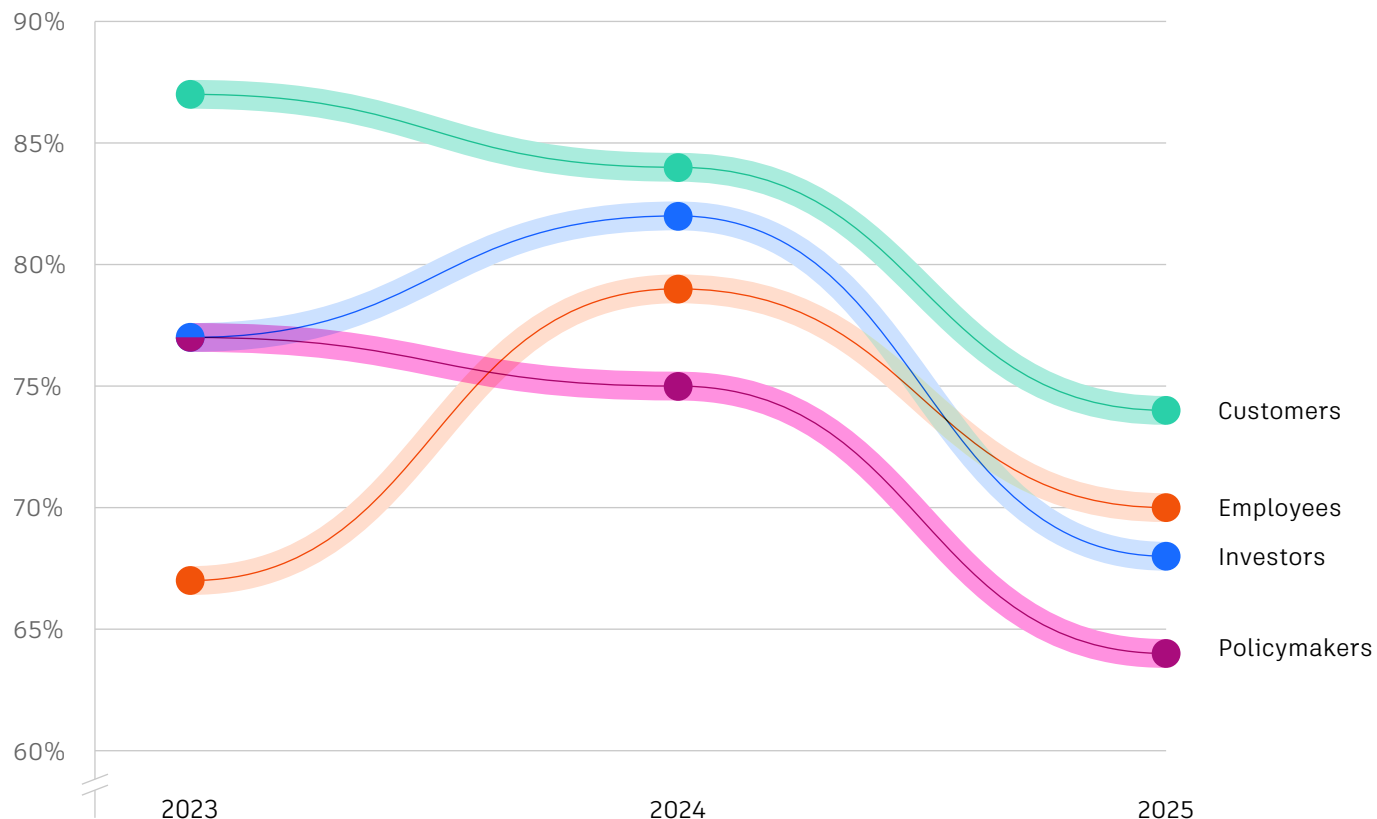
While organizations across D&M are still influenced by stakeholders to become more sustainable, that influence appears to be waning. For instance, this year 74% of D&M leaders say their sustainability initiatives were influenced by customers, compared to 84% in 2024.

[2] World Economic Forum, 2023

AUTODESK

Stakeholder influence is in decline

Leaders have other reasons for sustainability initiatives

In D&M, the decline in stakeholder influence is universal across all groups, including customers, employees, investors, and policymakers. New to the survey this year as possible influencers are partners (70%) and suppliers (66%).

Although the influence of stakeholder groups is down, sustainability efforts remain steady, with 95% of leaders in D&M report their organizations are making changes to be more sustainable. This suggests that organizations are starting to take the reins on sustainability initiatives rather than allowing external influences to guide decisions.

D&M respondents. Survey question: How influential are the following groups in motivating your company or organization to create and meet sustainability goals? 5-point scale. Top two = influential.

AUTODESK

Closing the gap between long-term and short-term strategy

D&M: ● Improving sustainability practices is a good **long-term** business decision
● Improving sustainability practices is a good **short-term** business decision

27%

14%

| | 2023 | 2024 | 2025 |
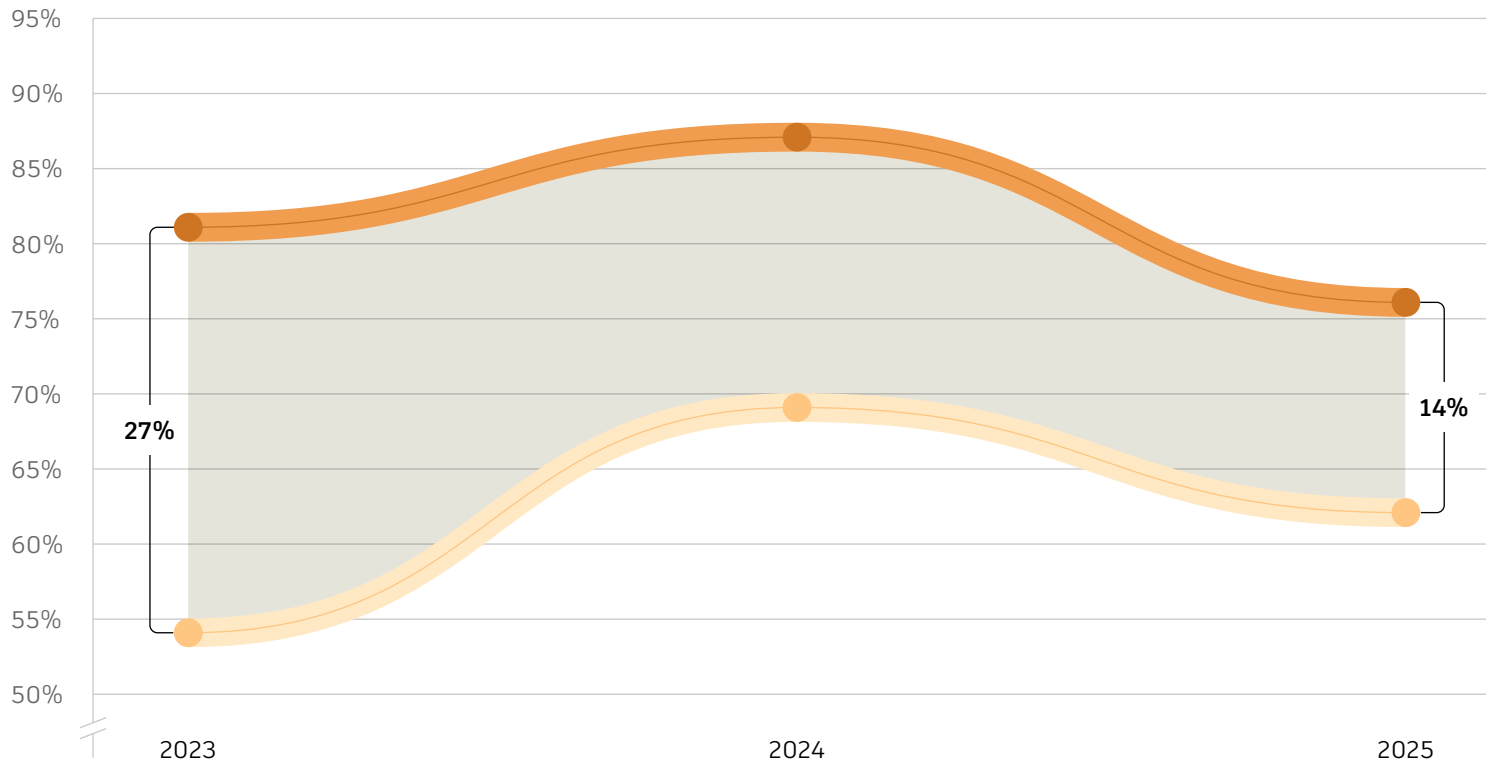
Percentage of respondents who agree to statements: 1. Improving sustainability practices is a good long-term business decision. 2. Improving sustainability practices is a good short-term business decision. 5-point scale. Top two = agree. Gap = difference between long-term and short-term for each year.

AUTODESK

At the heart of this perspective shift is the growing understanding that, while historically seen as a long-term revenue play, improving sustainability is also a good near-term strategy. This year in D&M, the gap between leaders who see sustainability as a short-term versus long-term strategy has narrowed to just 14%, signaling that sustainability is seen as good for business overall.

Digitally mature companies are at an advantage when it comes to reaping sustainability benefits. In D&M, 85% of digitally mature organizations see long-term benefits from sustainability and 73% see short-term benefits, compared to just 69% and 53% respectively at less digitally mature organizations.

Sustainability efforts are also easing talent struggles at digitally mature companies, with 78% of D&M leaders reporting their sustainability efforts help attract and retain talent, compared to 54% at less digitally mature companies. Industry interviews reinforce these findings, with leaders saying younger skilled workers want to join organizations that are both technologically advanced and committed to building a better future.

Leaders at digitally mature companies appear to be seeing the transformational potential of sustainability across their organizations—and are likely increasing their budgets to match. In D&M, 73% of leaders say they will increase their investments in environmental sustainability, compared to just 53% at less digitally mature companies.

AUTODESK

AI is now the top sustainability enabler

01
02
03
04

In D&M, AI is now the top sustainability enabler with 37% of leaders saying they use the technology to be more sustainable, more than any other action; up from 35% last year and 24% in 2023.
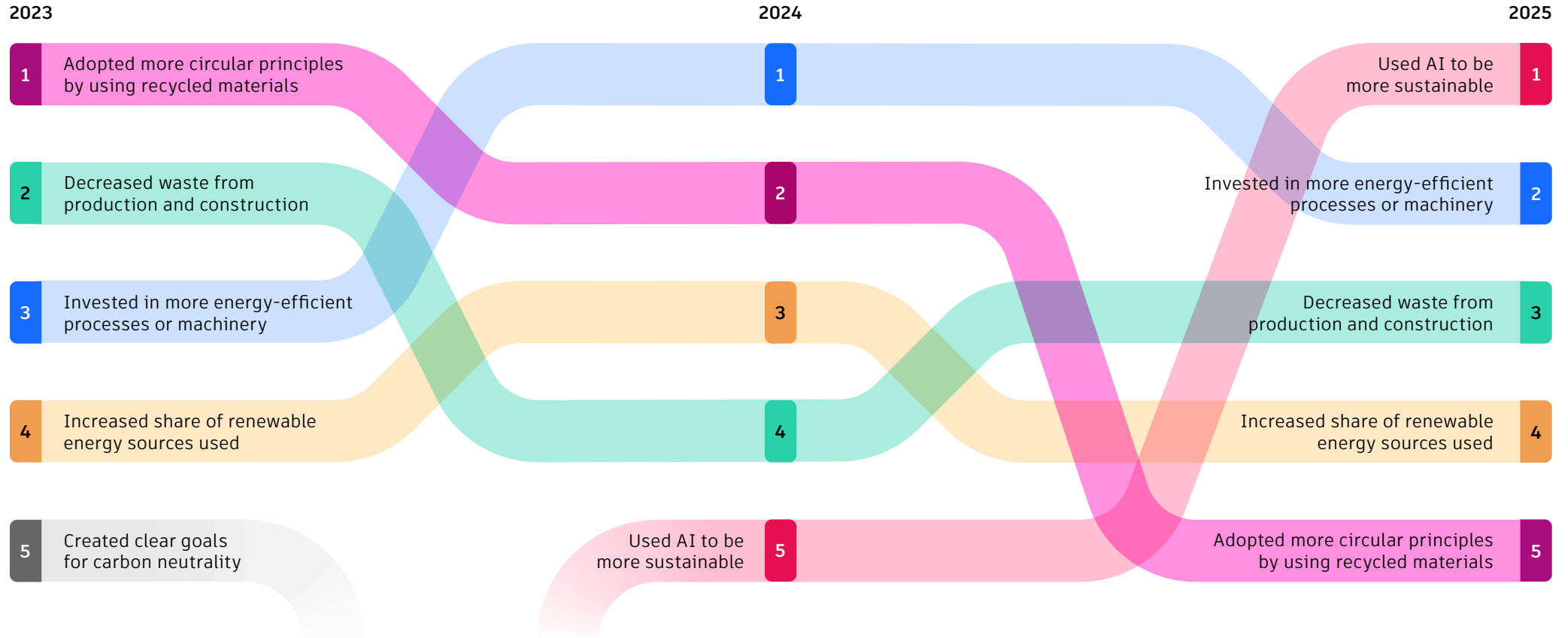
With nearly all organizations taking steps to be more sustainable, many are turning to AI technology to help enable sustainable outcomes. For instance, in the design and manufacturing industries, where 80% of a product's environmental impact is influenced by decisions made at the design stage,[3] AI is helping leaders think about sustainability from conception through production.

37%
of businesses in D&M have used AI to be more sustainable

[3] Ellen MacArthur Foundation

AUTODESK

The continuing integration of AI and sustainability

D&M: AI is the top sustainability enabler for the second year in a row

2023

2024

2025

1 Adopted more circular principles by using recycled materials

2 Decreased waste from production and construction

3 Invested in more energy-efficient processes or machinery

4 Increased share of renewable energy sources used

5 Created clear goals for carbon neutrality

1

2

3

4

Used AI to be more sustainable **5**

Used AI to be more sustainable **1**

Invested in more energy-efficient processes or machinery **2**

Decreased waste from production and construction **3**

Increased share of renewable energy sources used **4**

Adopted more circular principles by using recycled materials **5**

Survey question: What changes has your company or organization already made to be more sustainable? Select all that apply. 12 response options.

AUTODESK

The integration of AI into sustainability efforts is having an impact across design and manufacturing. Among other things, artificial intelligence helps to mitigate the impact of natural disasters by visualizing flood impacts and assessing product lifecycles, providing a detailed view of environmental impact from materials sourcing through disposal.

Not surprisingly, digitally mature companies in D&M report using the technology for sustainability more than less digitally mature organizations (43% and 32%, respectively). At data-effective organizations—organizations at which leaders said they are "very effective" at leveraging data—the divide is more pronounced, with 50% of leaders using AI to enable sustainability, compared to 34% of other organizations. These numbers highlight an AI implementation gap—one that may widen as technology advances, providing a competitive advantage for digitally mature organizations.

Ironically, the AI technology enabling more sustainable outcomes is also increasingly taxing on the environment. Data centers require a large amount of water and energy to run and cool and produce electronic waste that is difficult to dispose of. Design and Make organizations are exploring solutions to this problem to offset the impact of data centers, including carbon removal technology or carbon offset programs.
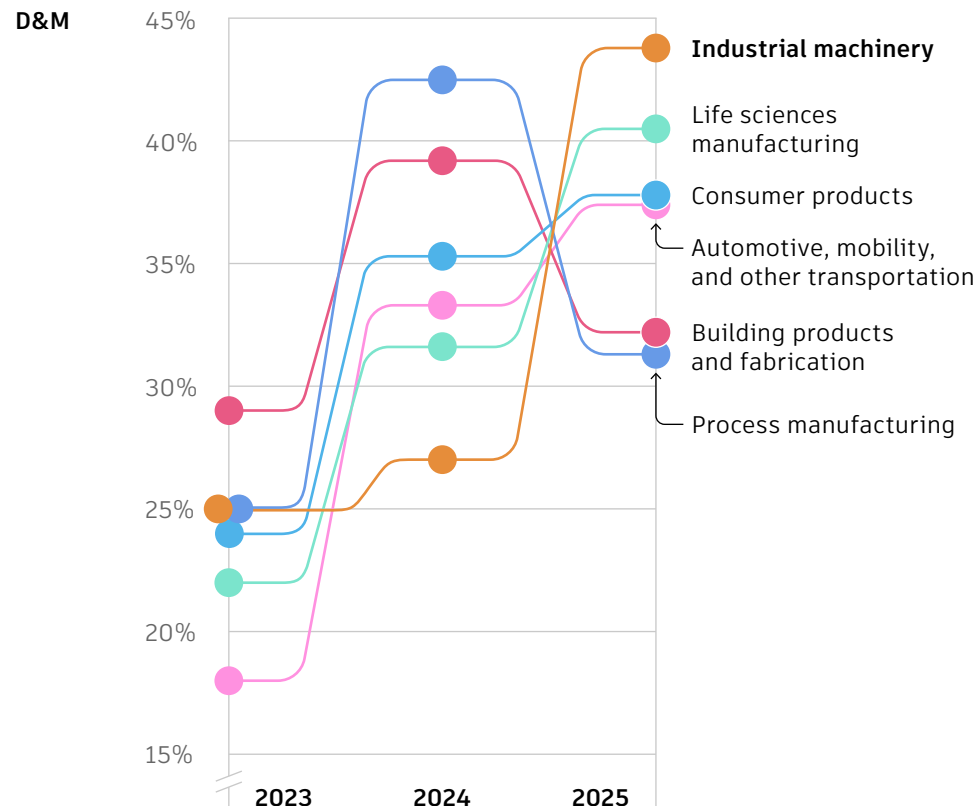
AUTODESK

Industrial machinery is currently the sector in product design and manufacturing that is using AI the most to enable sustainable outcomes. This sector also showed the steepest year-over-year increase in AI use for sustainability, with 44% of organizations using the technology to achieve their goals. Leaders in industrial machinery say they are using AI starting at the design phase, baking sustainability into the entire project from inception.

"AI has more elements that can be used to judge whether or not something can actually be applied, rather than just conceptual presentations."

HIDENORI SAITO
Department Manager of the DX Strategy Division and BIM Management Office, Takasago Thermal Engineering, an air conditioning equipment company headquartered in Japan

Industrial machinery leads the way for AI-enabled sustainability efforts

D&M

- Industrial machinery
- Life sciences manufacturing
- Consumer products
- Automotive, mobility, and other transportation
- Building products and fabrication
- Process manufacturing

Percentage of respondents who selected "Used AI to be more sustainable." Survey question: What changes has your company or organization already made to be more sustainable? Select all that apply. 12 response options.

Solution spotlight

Yamaha Motor and Final Aim collaborated to design the Concept 451, an electric utility vehicle tailored for agricultural and mountainous terrain, unveiled at the Tokyo Auto Salon 2024. Using generative AI, Final Aim explored extensive design possibilities, creating more than 2,000 concepts. The AI facilitated communication and iterative design processes, resulting in a unique, asymmetrical electric vehicle (EV) structure. Final Aim also developed a blockchain-based platform, Final Design, to securely manage design data and intellectual property. This project highlights generative AI's potential in design, addressing both creative and practical challenges while safeguarding intellectual property through innovative technology.

→ **READ MORE** about Yamaha EV

The AI hype cycle meets reality

02
03
04
05

"In the past few years, there has been a lot of hype around AI. Everyone had high expectations, but actual progress might be slower or more complicated than we imagined. And AI's outputs are not as accurate as we wanted. It's rationality returning over expectation."

JUN XUE
Digital Design Director, Industrial Design, Xiaomi EV, an electric vehicles manufacturer headquartered in China

Since the introduction of ChatGPT in late 2022, businesses have been racing to tap the potential of AI, making it a strategic priority across industries. *2024 State of Design & Make* survey results underscored this enthusiasm, with 80% of leaders in D&M saying that AI would enhance their industry.

But the reality of AI hasn't yet lived up to the hype, according to leaders in design and manufacturing. Sentiment toward AI and other emerging technologies is down significantly year over year, with just 69% of business leaders in D&M saying AI will enhance their industry—representing a 14% drop from 2024. Industry disruption from AI is also a major concern, nearly half of leaders now agreeing that AI will destabilize their industry.

This global drop in sentiment across industries signifies that AI is following the classic tech hype cycle, as leaders face the reality of implementation, an ongoing technical skills shortage, and the limitations of the current technology.
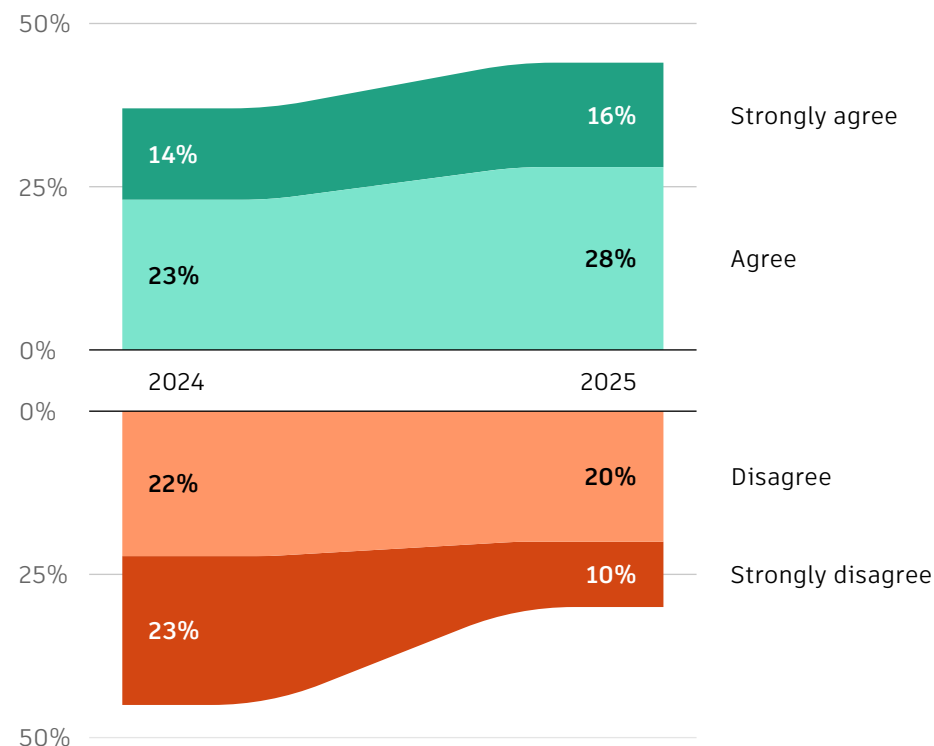
In D&M,
46%
agree AI will destabilize their industry

AUTODESK
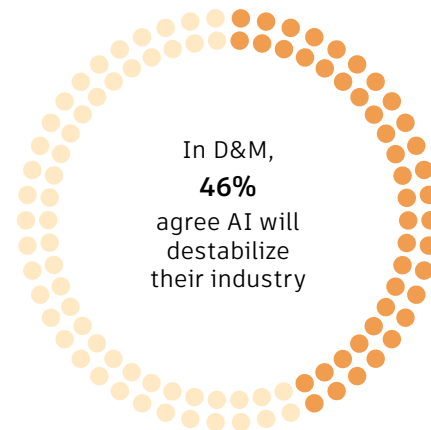
Forty-four percent of leaders and experts in D&M agree AI will destabilize their industry, up from 37% in 2024 and representing a 19% year-over-year increase. This indicates leaders are becoming more concerned about AI and emerging technology as its implementation in their industry, and at their organizations, grows.

From the standpoint of digital maturity, there is a stark difference in perceptions of disruption. Digitally mature companies are far more likely to say that AI will destabilize their industry (53%) compared to less digitally mature companies (37%). This makes sense when considering that digitally mature organizations will have more processes, systems, and workers impacted by AI implementation.

Concern about AI-related industry disruption is up

Nearly half of business leaders agree AI will be destabilizing

50%

25%

0%

14% | 16% Strongly agree

23% | 28% Agree

2024 | 2025

0%

22% | 20% Disagree

25%

23% | 10% Strongly disagree

50%

D&M respondents. Survey question: When you think about artificial intelligence (AI) in your industry and company, to w extent do you agree or disagree with the following? 5-point scale. Data for "neither agree or disagree" not shown.

AUTODESK

AI sentiment is down across the board
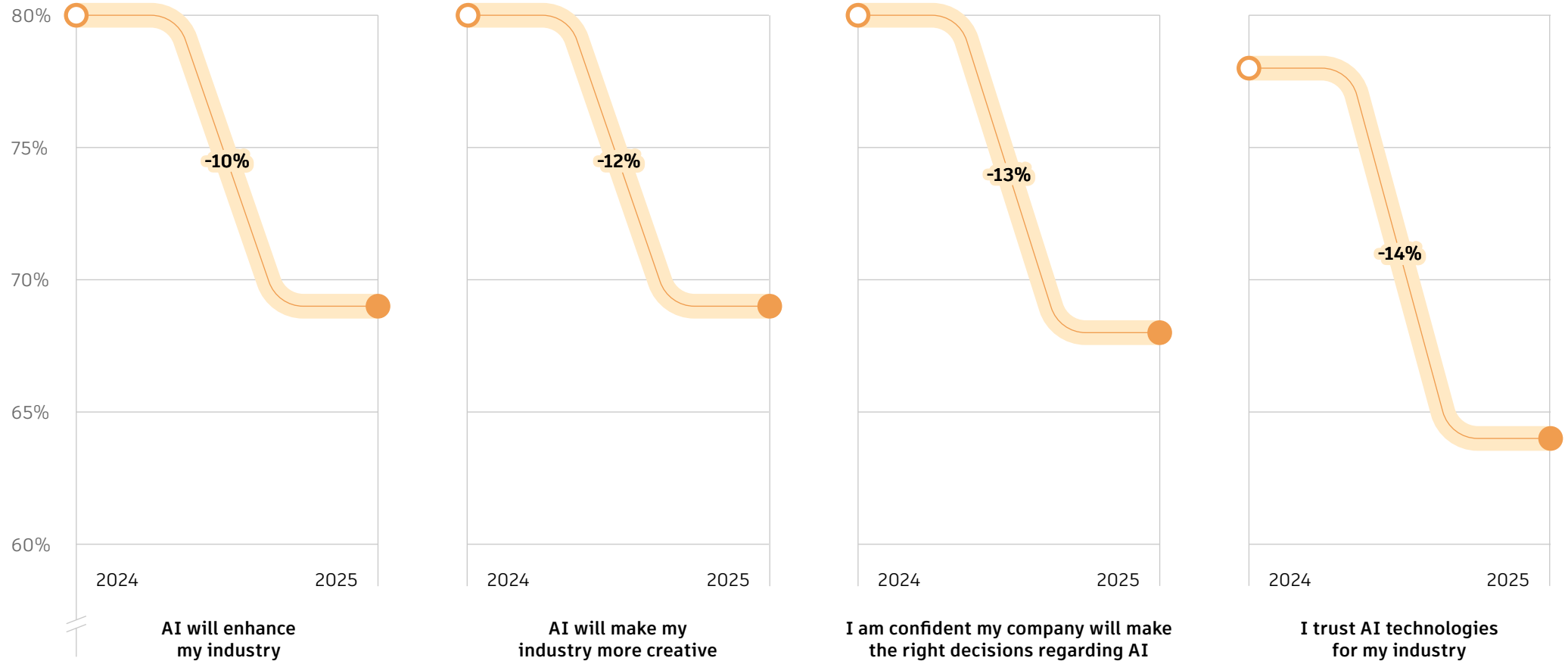
80%
75%
70%
65%
60%

2024   2025

-10%

**AI will enhance
my industry**

-12%

**AI will make my
industry more creative**

-13%

**I am confident my company will make
the right decisions regarding AI**

-14%

**I trust AI technologies
for my industry**

AUTODESK

Concern about disruption is up and overall positivity about AI has dropped significantly from 2024. Notably, trust in AI technology for D&M has decreased 14 points year-over-year, representing an 18% change in sentiment.

One of the many reasons for this sharp decline is concern about cybersecurity incidents; privacy issues; biased or harmful outcomes; and limited control over how, where, and when their data is used. For example, organizations struggle to manage how to use third-party AI tools without exposing their sensitive data or sensitive customer data. Also challenging is the implementation of AI solutions across the organization, both in terms of time and money. In interviews, leaders said that in some industries or regions, AI regulations are lagging behind the pace of technology, leaving businesses in a difficult position when it comes to implementation, limitations on use, and liability.

"Certainly, there are AI tools that help with creativity, but I don't think AI will ever take over an engineer or a scientist or a designer's job. I think AI will be a fantastic assistant and boost efficiency and productivity. These improvements are very important for us as our workload increases, coupled with shorter project life cycles, all the stuff we have to deal with as engineering consultants—do more with less. And AI, I think, is really going to help. AI is in its infancy right now, with great things to come. Software vendors are bloating ROIs trying to boost sales, but just it's not mature enough to widely adopt on a big scale. "
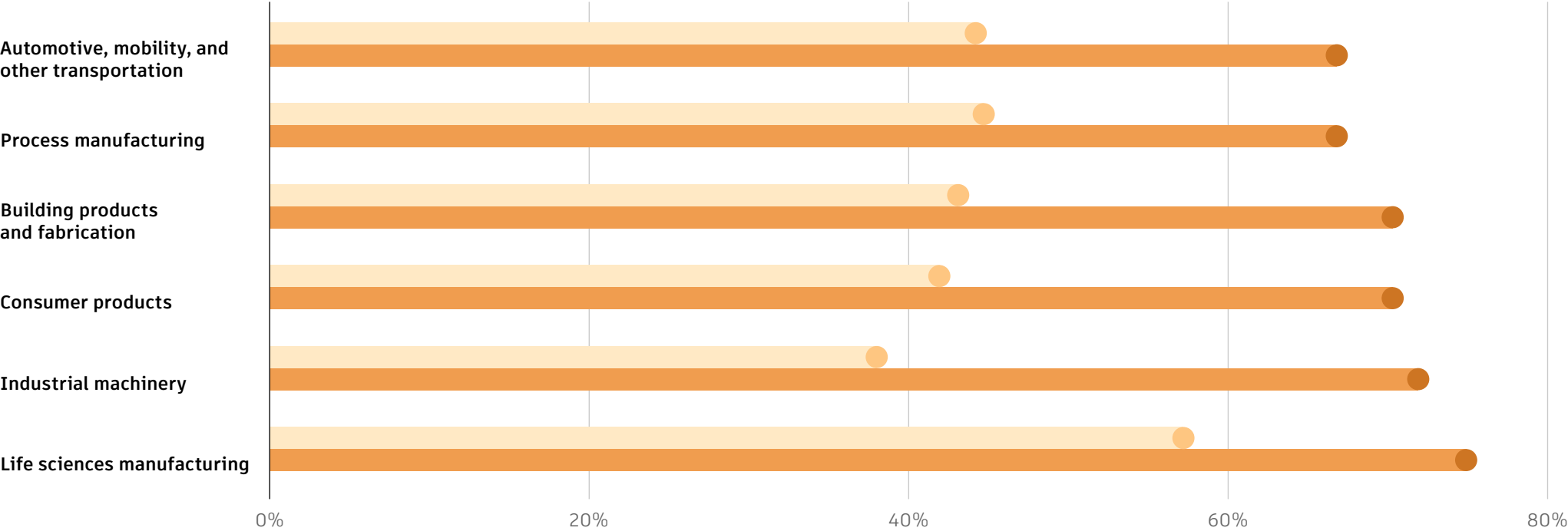
BLAINE BUENGER
Technology Director, Infrastructure Solutions, Foth, a science, engineering, and technology company headquartered in the United States

AUTODESK

Life sciences sees possibility amid disruption

D&M: ● AI will destabilize my industry ● AI will enhance my industry


Percentage of respondents who agree to statements: 1. AI will destabilize my industry. 2. AI will enhance my industry.
Survey question: When you think about artificial intelligence (AI) in your industry and company, to what extent do you agree or disagree with the following? 5-point scale. Top two = agree.

AUTODESK

For product design and manufacturing companies, concern about industry destabilization from AI is lower than the global average. Similarly, the positive sentiment about AI's ability to enhance their industry is generally above average, suggesting D&M, as a whole, is benefiting from the implementation of AI solutions at their organizations.

One standout sector is life sciences, which is both most concerned about disruption (57%) and most enthusiastic about AI enhancing the industry (75%). This seeming contradiction implies that leaders in life sciences see AI as an inevitable disruption but one that will come with great benefits.

AUTODESK
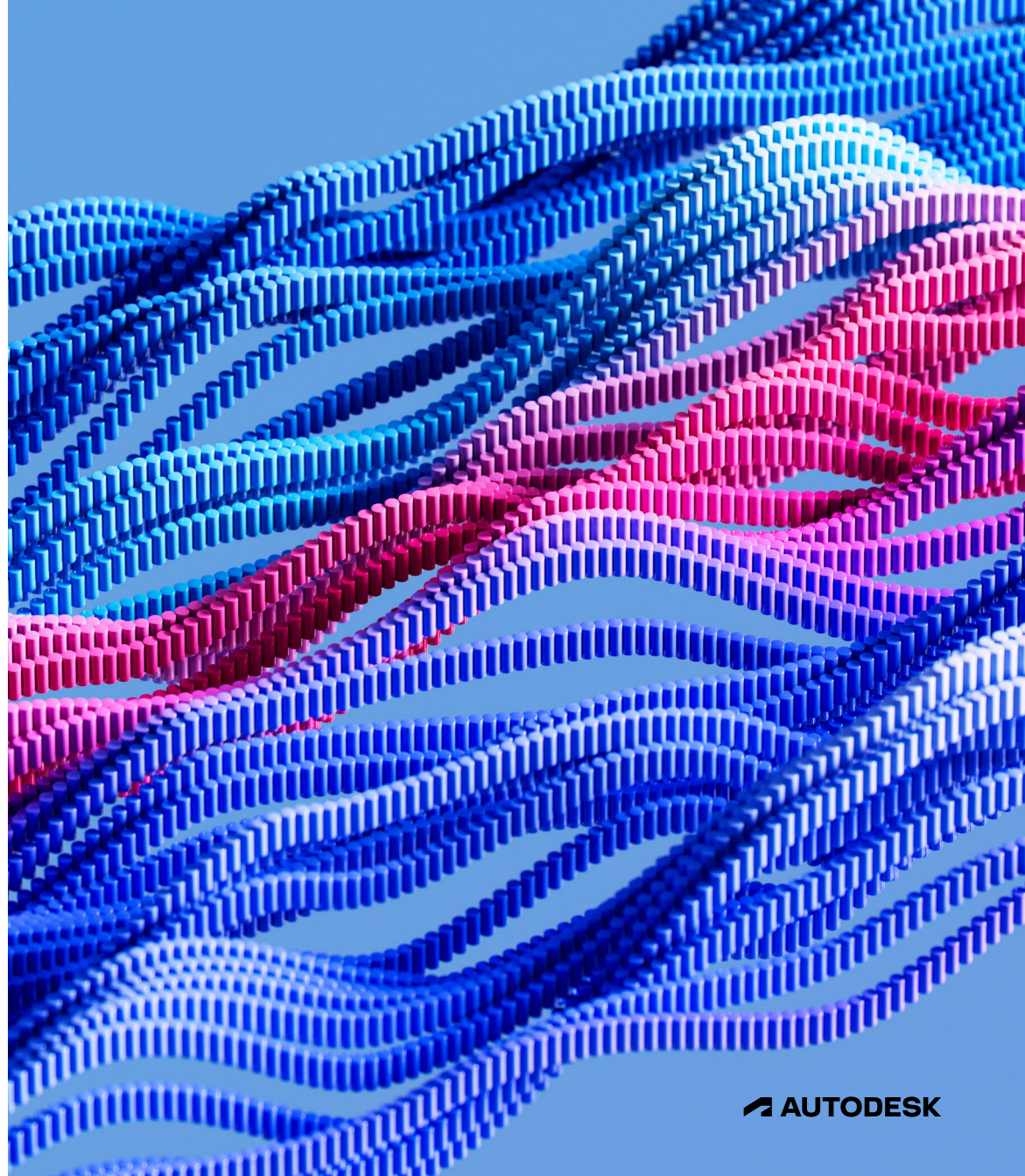
AI journeys adjust to reflect implementation realities

● Not started　　● Early stage　　● Middle of the effort　　● Approaching goal　　● Achieved goal

D&M:

2024

| 7% | 16% | 26% | 46% | 6% |

2025

| 9% | 23% | 34% | 28% | 7% |
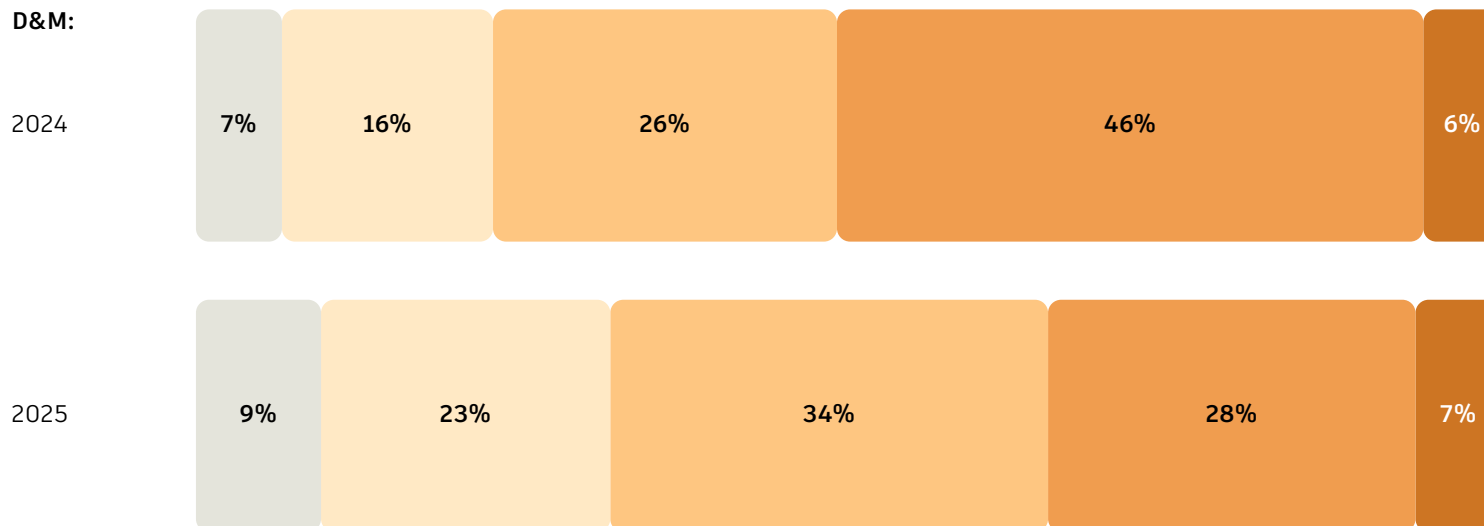
Survey question: Where is your company or organization in incorporating artificial intelligence (AI) technology?
5 point scale. Values do not add up to 100% due to rounding.

AUTODESK

In 2024, leaders in D&M were confident about progress toward reaching their AI goals, with 52% saying they were approaching or had already achieved their goals. This year, as leaders are faced with the complexities of implementing AI solutions across their organizations, they are rethinking where they are on their AI roadmaps.

Only 35% of leaders in D&M say they are approaching or have achieved their AI goals, a 16-point decrease, that represents a 33% decline year-over-year. Leaders are more conservative this year when estimating their progress, with a 36% increase in leaders who say they are in the early or middle stages of their AI journey. This finding suggests that leaders are struggling to progress in their AI journeys as they encounter a confluence of cost, talent, and time concerns, and that the technology is not quite mature enough to easily implement across organizations as leaders hoped.

Their response is to invest, but there is a stark divide in who is betting big on AI. Seventy-six percent of leaders at digitally mature D&M organizations say they will increase investment in AI, compared to 59% at less digitally mature companies. These increased investments could lead to outsized benefits for more digitally mature organizations who are already seeing benefits in hiring, productivity, and innovation from digital transformation efforts.

Despite implementation challenges and a dip in sentiment, D&M leaders are still optimistic about AI's potential. When asked how their organization's investments will shift over the next few years, 66% of respondents say their investments in AI will increase.

AUTODESK

Investments dip overall but remain high in AI
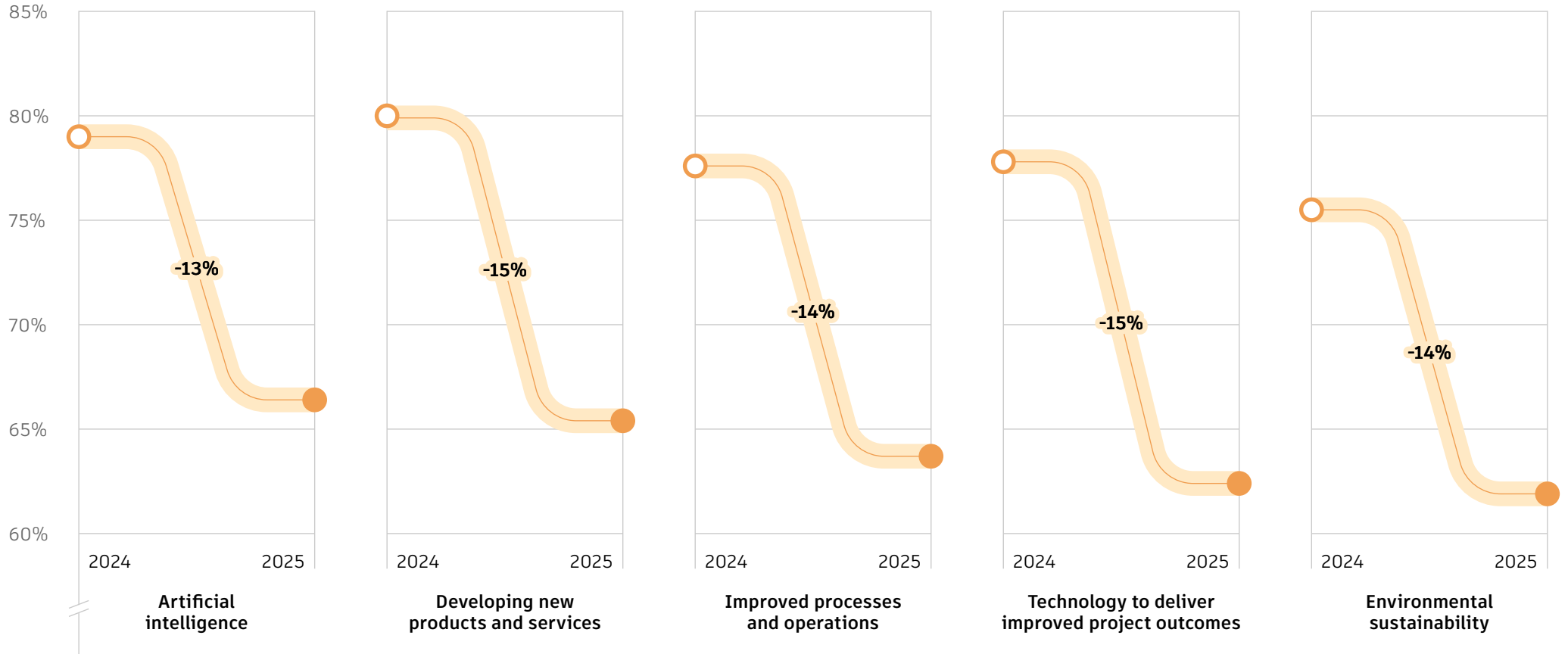
D&M respondents. Survey question: How do you think your company or organization's investment in the following will shift in the next 3 years?
5-point scale. Top two = increase. Drop = Increase for 2024 minus 2025.

AUTODESK

Cost control, tech, and sustainability are top concerns for leaders in D&M

05
04
05
06

In the wake of a year of geopolitical and economic turmoil, continued inflation, and supply-chain fragility, it's not surprising that cost control is top of mind for leaders in D&M, with 35% citing it as their main business challenge.

Spending is down in nearly all categories from technology to talent as leaders hope to mitigate the continued challenges of a post-pandemic economy. This dip in future investments could compound both talent and technology troubles, as organizations will struggle to do more with less.
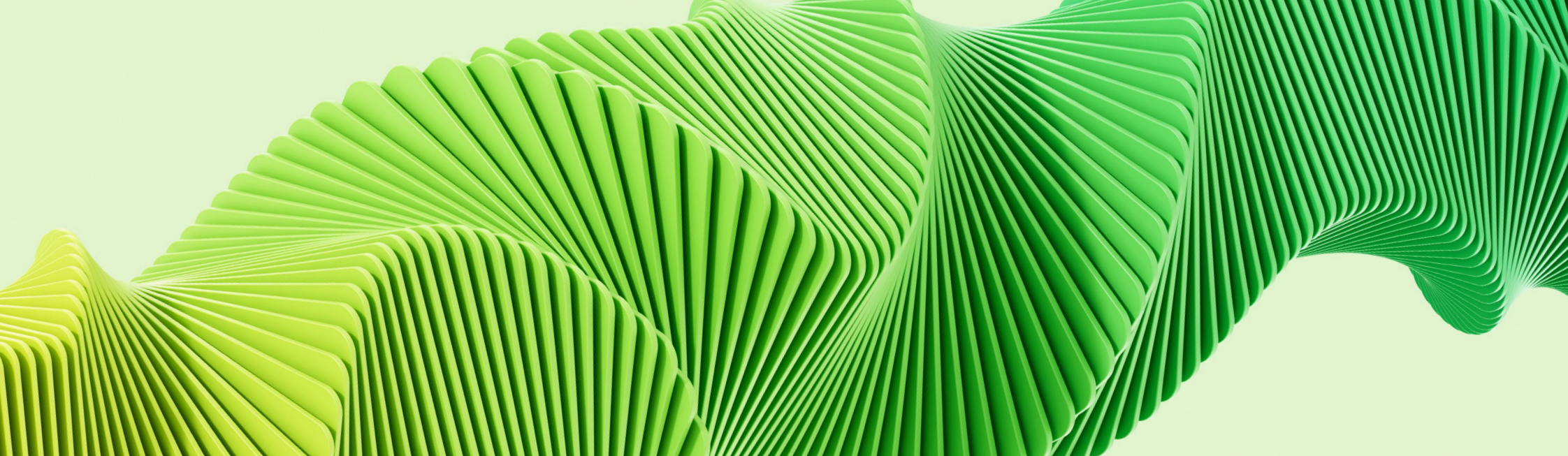
Cost control is the top global challenge

AI and other emerging technologies a close second
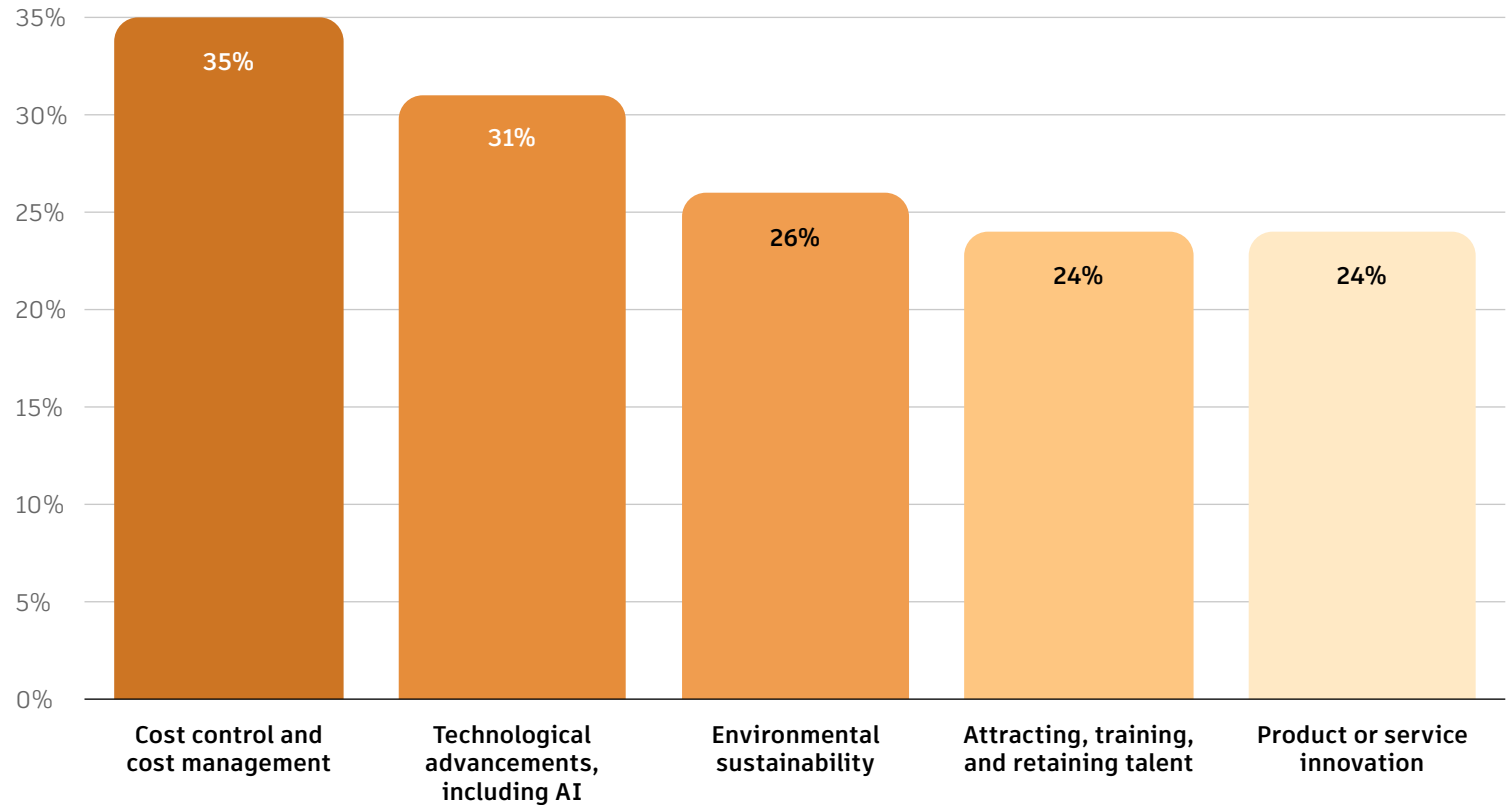
D&M respondents. Survey question: What are the top three challenges your company or organization faces today? Select up to three. 12 response options.

AUTODESK

In D&M, 31% of leaders identify technological advances (including AI) as a top challenge as their organizations struggle to implement new and emerging technologies. Cost-control measures will likely have a downstream impact here and could affect how quickly companies are able to reach their technology and digital transformation goals.

Ironically, cutting investment in technology can have a negative impact on budgets because new tools and processes can often lead to greater efficiencies across the organization. For instance, leaders at data-effective organizations see cost as less of a challenge—just 27% identify it as a top concern compared to 37% at other organizations.

Talent remains a perennial struggle, identified by 24% of leaders as a top challenge at their organization. The search for skilled talent is especially difficult, with nearly two-thirds of leaders saying they struggle to find the skills they need. Exacerbating the talent crunch is the growing number of organizations that are letting people go because they lack the right technical skills, further widening their talent gap.

"I think reduction in spending is due to the uncertainty of the economy. We want to focus on the things that we know we do well and not increase or introduce any new risk."

BLAINE BUENGER
Technology Director, Infrastructure Solutions, Foth, a science, engineering, and technology company headquartered in the United States

AUTODESK

Supply chains remain fragile and undiversified

Supply-chain diversification is down despite increased global uncertainty

My company is diversifying its supply chain

My company's supply chain is fragile due to geopolitical tensions
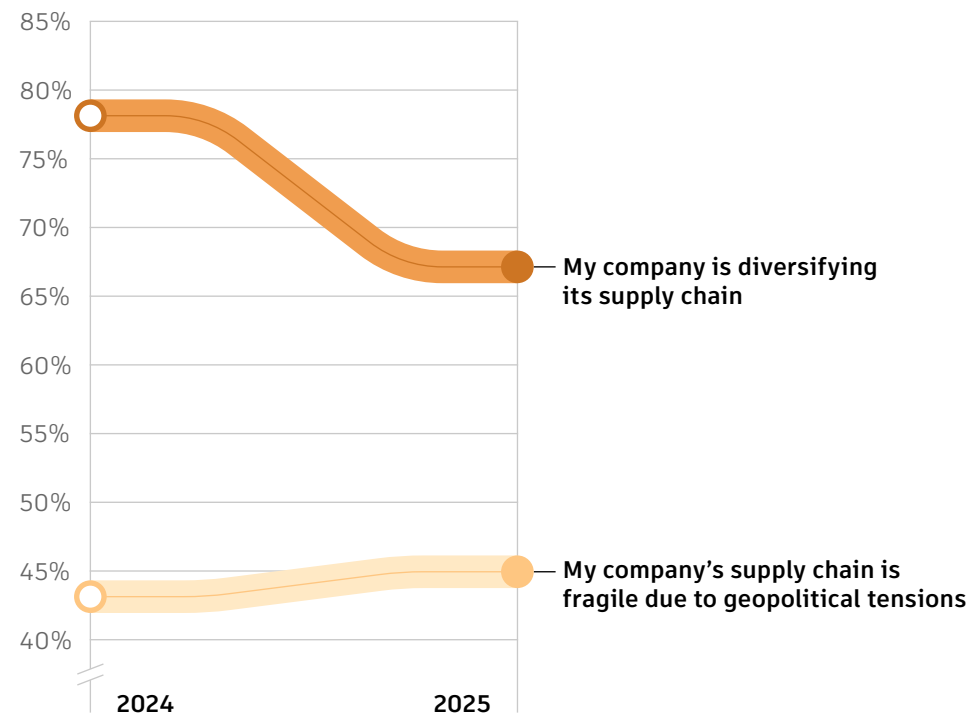
D&M respondents. Percentage of respondents who agree to the statements: 1. My company's supply chain is fragile due to geopolitical tensions. 2. ...to be more resilient... My company is diversifying its supply chain. 5-point scale. Top two = agree.

AUTODESK

Digitally mature companies 37% more likely to diversify their supply chains

- 90%
- 80%
- 2024
- 2025
- 70%
- 60%
- 50%

Digitally mature companies

Less digitally mature companies
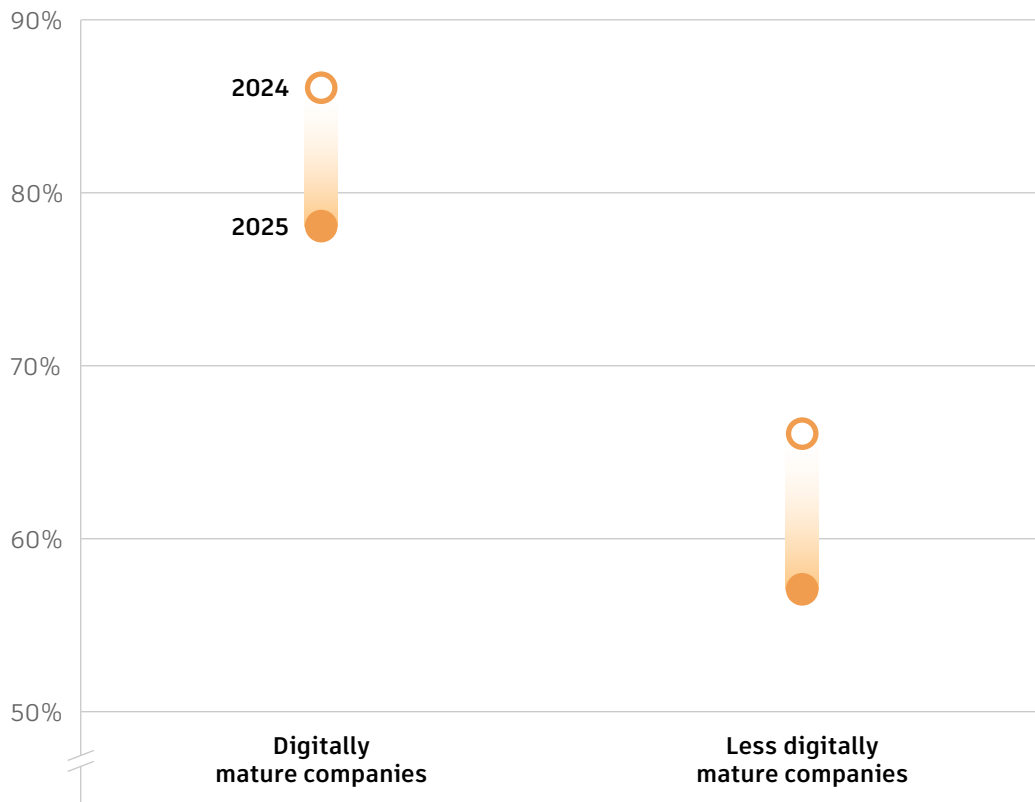
D&M respondents. Percentage of respondents who agree to the statements: ...to be more resilient... My company is diversifying its supply chain. 5-point scale. Top two = agree. For the definition of digital maturity, see glossary.

Supply-chain reliability continues to be a concern in D&M worldwide, with 45% of business leaders saying their supply chain is fragile due to geopolitical tensions, up from 43% last year.

Despite this increased fragility, there is a global decline in the percentage of leaders who say their organizations are diversifying their supply chains. This year saw an 11-point drop (to 67%) in the number of leaders saying their company is diversifying their supply chains. During interviews, leaders cited the

cost of diversification, competing demands within the organization, and the lack of alternative options to their current supply chain as ongoing struggles with supply-chain resilience.

But one additional and critical factor companies need to consider when it comes to supply-chain stability is digital maturity. Survey results this year revealed that digitally mature organizations in D&M were 37% more likely to diversify their supply chains—giving them a significant edge when it comes to resilience.

AUTODESK

Leaders are cautious in the near term

04
05
06
07

This year saw a general cooling of sentiment across design and manufacturing, with the majority of business leaders feeling both more uncertain about the future and less prepared to handle unforeseen changes.

Sixty-two percent of D&M leaders surveyed for this year's report agree that the global landscape is now more uncertain, an 8-point jump that represents a 15% increase year-over-year. Leaders are also less confident in their organization's ability to weather unforeseen obstacles with just 61% saying they are well prepared, down from 74% in 2024.

This conflation of uncertainty and unpreparedness is having far-reaching impact across D&M organizations. From a general reduction in spending to decreased enthusiasm for new technologies, leaders are experiencing a lack of organizational confidence.

Leaders feel the future global landscape is <u>more uncertain</u>

+8 points
from 2024

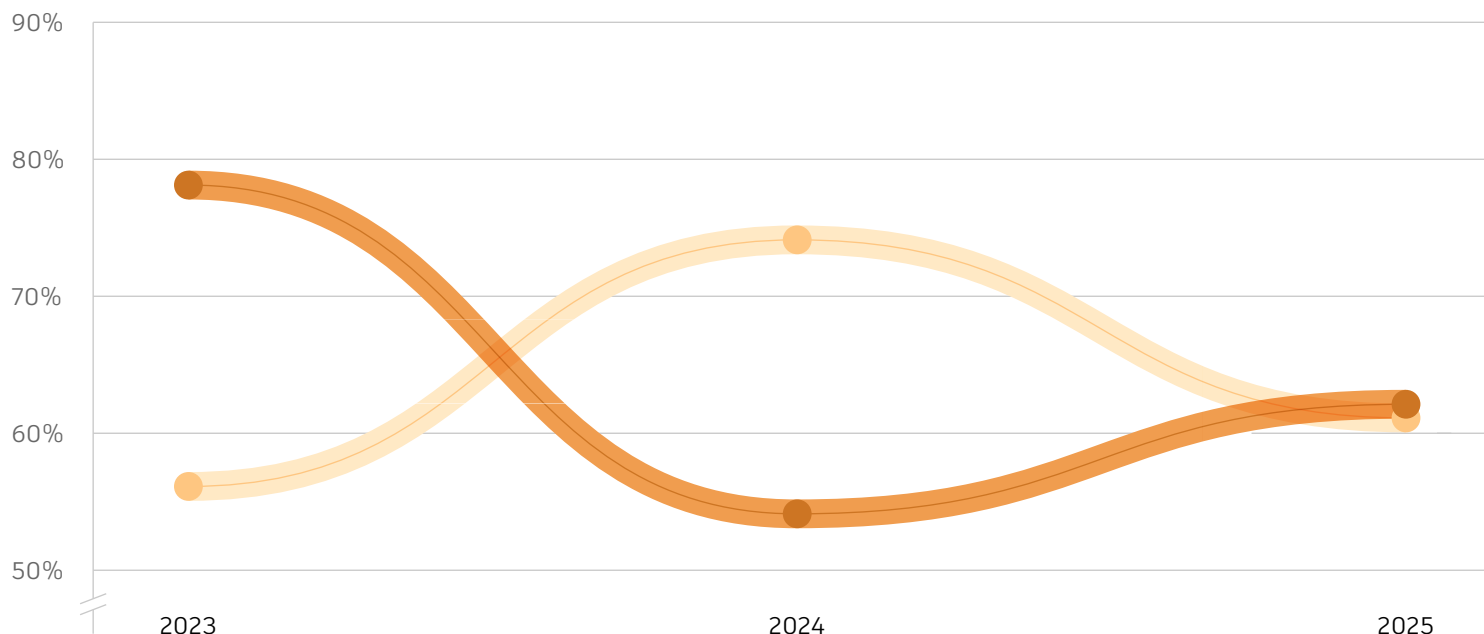**Leaders feel <u>less prepared</u> to handle unforeseen future changes**

−13 points
from 2024

AUTODESK

Leaders feel more uncertain about the future and less prepared to face it

Global uncertainty is affecting organizational confidence

D&M: ● My company is well prepared to handle unforeseen future change

● The future global landscape feels more uncertain now than 3 years ago

Percentage of respondents who agree to statements: 1. My company is well prepared to handle unforeseen future macroeconomic and geopolitical changes.
2. The future global landscape feels more uncertain now than 3 years ago. 5-point scale. Top two = agree.

But amid uncertainty, some organizations in D&M are faring better than others. Leaders at digitally mature organizations, for example, feel better prepared to handle unforeseen changes—77% of leaders at these companies feel prepared, compared to only 48% at less digitally mature organizations. And data-effective organizations are most confident, with 86% of leaders at those organizations feeling prepared to handle unforeseen changes. This points to yet another advantage of digitalization across D&M: increased resilience.

AUTODESK

# The search for talent intensifies, with a focus on AI skills

05
06
07
08

Design and manufacturing organizations have struggled in recent years to find skilled talent, and this year that struggle has become acute enough to hinder growth. Fifty-nine percent of business leaders in D&M say that lack of access to skilled talent is a barrier to their company's growth, up from 44% from last year.

When it comes to bridging and filling the skills gap, digitally mature companies are at a distinct advantage. In D&M, 77% of digitally mature companies will invest more in digital training, compared to 58% of less digitally mature companies. They are also more likely to implement continuous learning programs than less digitally mature companies, at 75% and 56% respectively. Digitally mature companies also see a boost when it comes to talent. In D&M, 27% of digitally mature companies report improved talent acquisition and retention as a benefit of digital transformation compared to only 17 % of less digitally mature companies.

62% in D&M say they have difficulty finding employees with the right skills
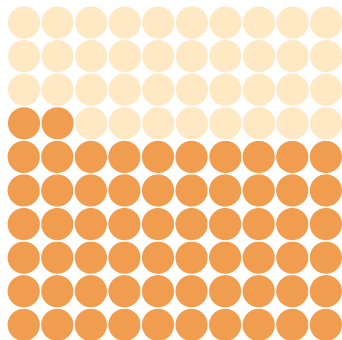
Sixty-two percent of D&M leaders worldwide agree that new employees with the right technical skills are difficult to find, up from 48% the previous year. Moreover, the number of leaders who say they have had to let people go because they lack technical skills has jumped to 47%, up from 35%, compounding labor shortage problems.

"In a competitive market, retaining and nurturing talent is critical. By offering comprehensive training programs and fostering a culture of ownership and growth, we create an ecosystem where employees are empowered to thrive and align with our organizational vision."

AMARNATH PATNAM
Head – Design Technology, Sobha Realty, a real estate developer headquartered in the UAE

AUTODESK

Nearly two-thirds of organizations are confronting a skills gap

36% year-over-year increase in leaders who say they struggle to find candidates with the right technical skills
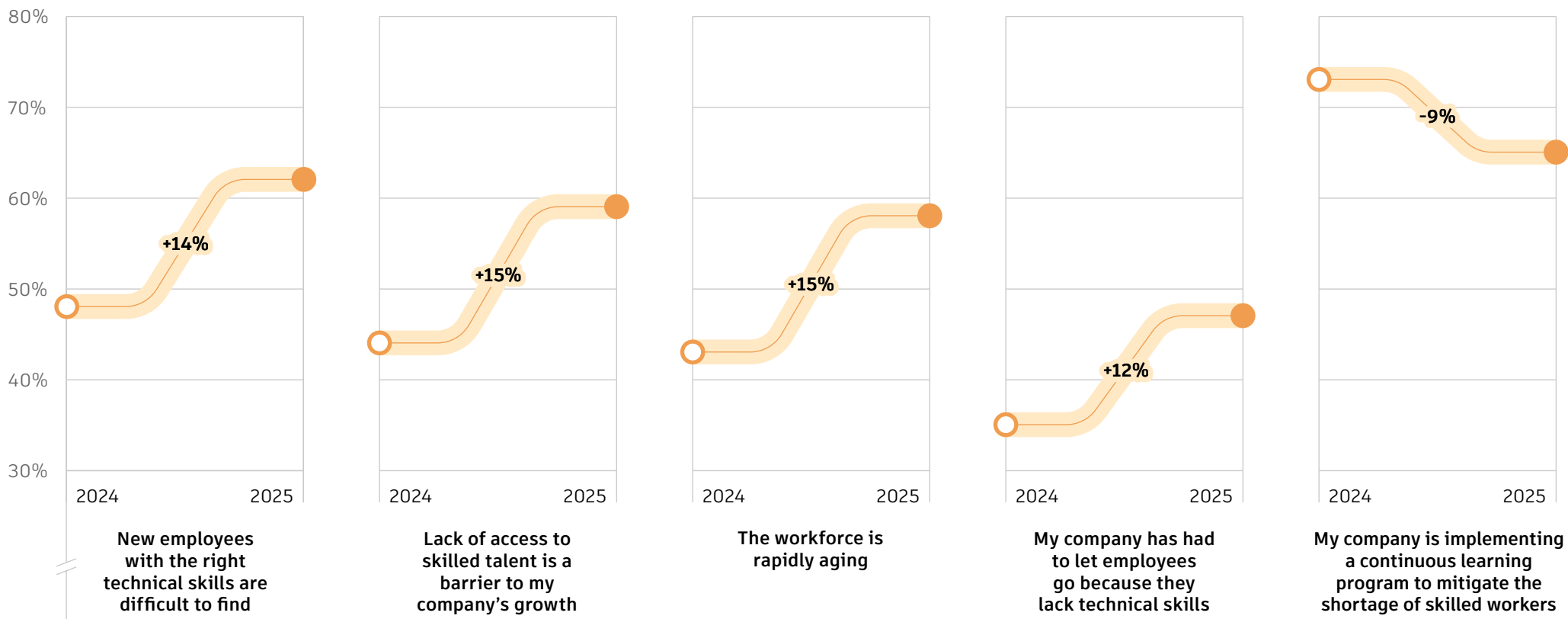
New employees with the right technical skills are difficult to find — +14%

Lack of access to skilled talent is a barrier to my company's growth — +15%

The workforce is rapidly aging — +15%

My company has had to let employees go because they lack technical skills — +12%

My company is implementing a continuous learning program to mitigate the shortage of skilled workers — -9%

D&M respondents. Percentage of respondents who agree to statements: 1. New employees with the right technical skills are difficult to find. 2. My company has had to let employees go because they lack technical skills. 3. Lack of access to skilled talent is a barrier to my company's growth. 4. The workforce is rapidly aging. 5. My company is implementing a continuous learning program to mitigate the shortage of skilled workers. 5 point scale. Top two = agree.

AUTODESK

Despite the skills gap, investment in training is down

80%

75%

70%

65%

60%

55%

2023   2024   2025
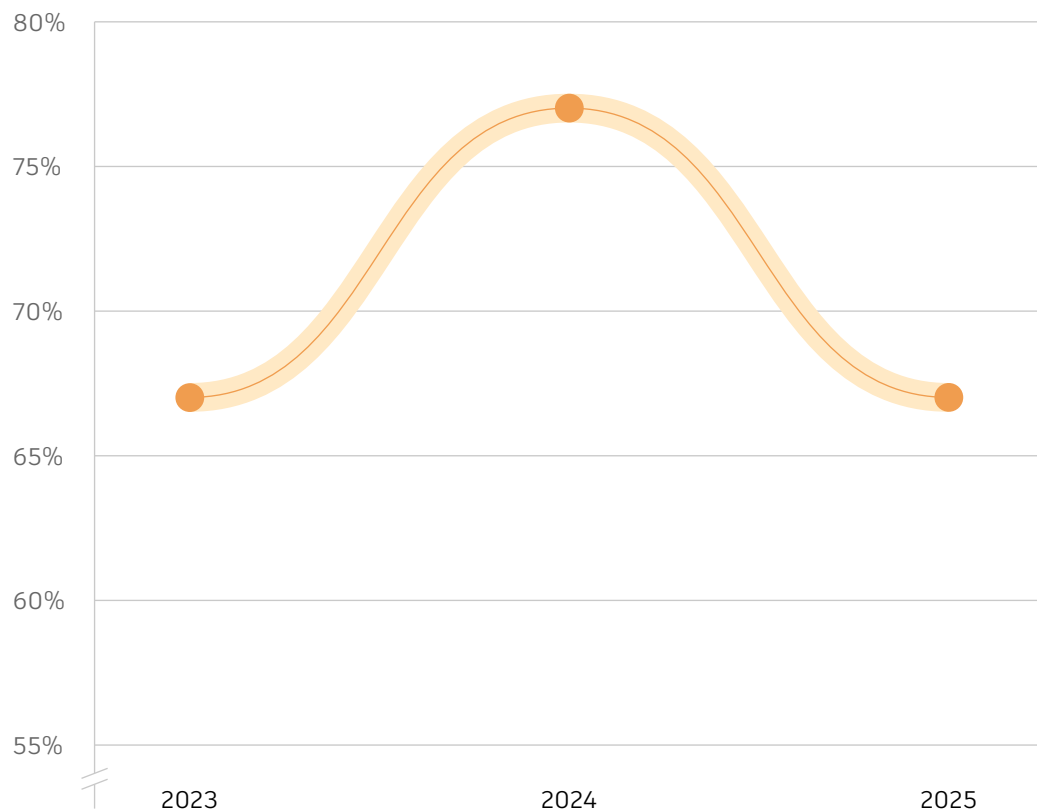
D&M respondents. Percentage of respondents who agree to the statement: In the next 3 years, my company is planning to invest more in digital skills training. 5 point scale. Top two = agree.

One way to bridge the skills gap is to invest more in workforce training through continuous learning programs, but implementation of continuous learning programs has declined to 65%, down from 73% in 2024.

Budget aside, training holds other challenges. In D&M, 45% of respondents say they do not have the resources to design internal training programs, up 8 points from 2024, indicating that the tight labor market is impacting initiatives across organizations.
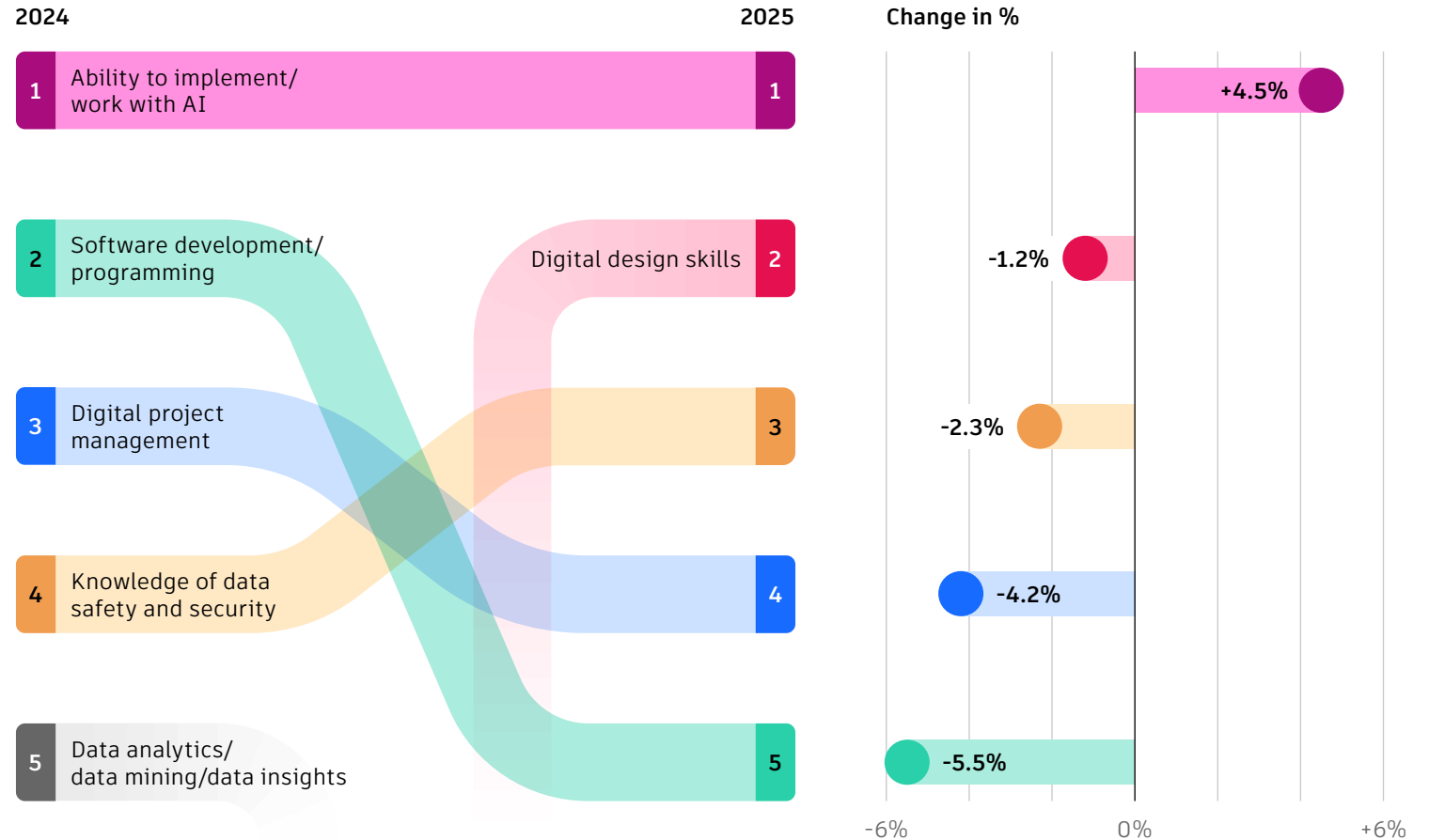
Confronted by multiple implementation obstacles, some D&M organizations are turning to third parties to train their employees. While external training programs seem like an ideal solution for those organizations tight on resources, their efficacy remains in doubt, with 48% of leaders saying these do not meet the needs of their organization.

AUTODESK

Forty-seven percent of leaders in D&M say the ability to work with AI will be their top priority when hiring in the next few years, up from 43% last year. This indicates that, despite a more cautious approach to the technology this year, leaders are still dedicated to integrating AI into their organizations.

AI skills top the list of future hiring priorities

2024		2025	Change in %

| 1 | Ability to implement/ work with AI | 1 | +4.5% |
2	Software development/ programming	Digital design skills 2	-1.2%
3	Digital project management	3	-2.3%
4	Knowledge of data safety and security	4	-4.2%
5	Data analytics/ data mining/data insights	5	-5.5%

-6%   0%   +6%

D&M respondents. Survey question: What technical or digital skills do you believe your company or organization will be prioritizing when hiring over the next 3 years? Select all that apply.

AUTODESK

Industrial machinery sees dramatic jump in skills shortage

D&M:
- ● New employees with the right technical skills are difficult to find
- ● In the next 3 years, my company is planning to invest more in digital skills training

○○ 2024   ◑◑ 2024 and 2025   ●● 2025
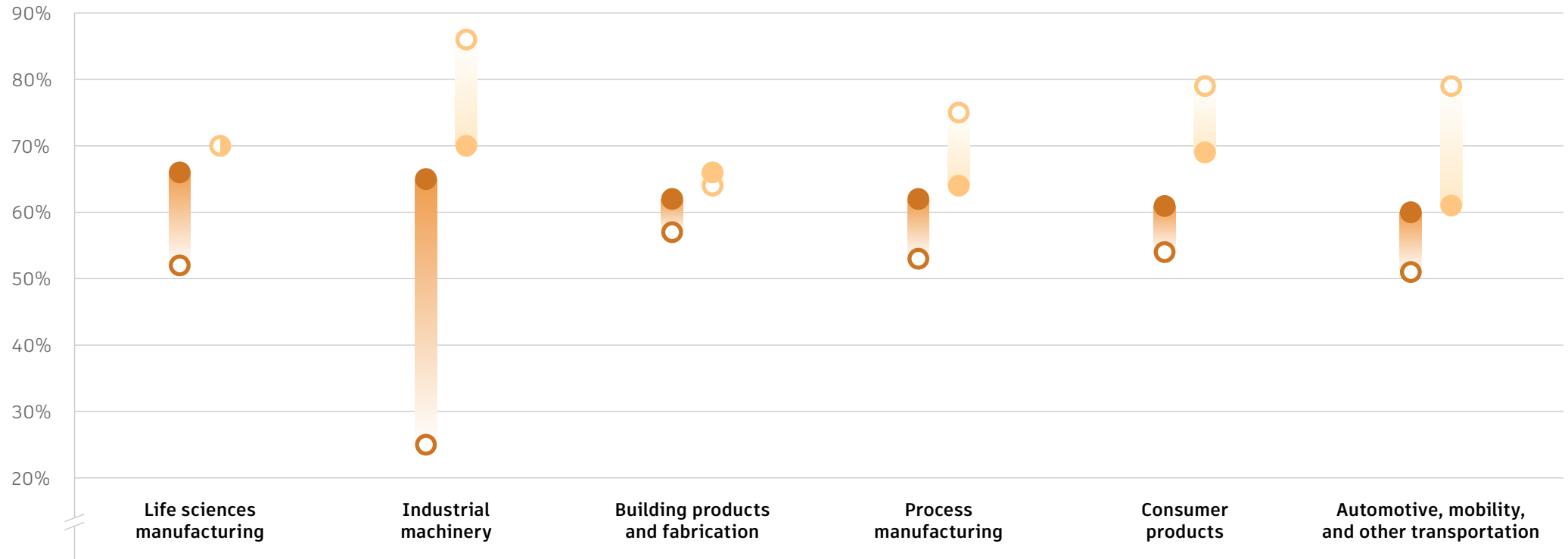
Percentage of respondents who agree to statements: 1. New employees with the right technical skills are difficult to find. 2. In the next 3 years, my company is planning to invest more in digital skills training. 5-point scale. Top two = agree.

AUTODESK

The industrial machinery sector saw the largest increase in the number of leaders who say they struggle to find the right technical skills—up to 65% from 25% in 2024, representing a dramatic 160% increase year-over-year. And while it also had one of the highest percentages of leaders saying their companies plan to invest more in digital skills training, that figure is down 16 points to 70% this year. Leaders cite the old-fashioned image of the sector as a reason why they are struggling to find talent—younger employees, they say, are drawn to industries they see as more technologically advanced.

To address this issue, leaders in the sector say they are focused on outreach, recruitment, and internship programs with students to attract them to the industry right at the start of their careers.

"As with the construction industry, as a whole, there is a shortage of skilled workers, and in Japan, the issue of how to respond to the Work Style Reform is a challenge. But as a means of solving this, we are introducing new technology to improve productivity."

HIDENORI SAITO
Department Manager of the DX Strategy Division and BIM Management Office, Takasago Thermal Engineering, an air conditioning equipment company headquartered in Japan

Solution spotlight

Revolution Workshop's workforce development programs offer more than jobs; they provide a pathway to stable, prosperous futures for people from underserved neighborhoods in Chicago's West and South sides. Revolution's Trade Pathways and Professional Pathways programs focus on practical skills training and holistic support, including financial literacy, conflict resolution, and goal setting. This comprehensive approach prepares participants for careers in construction, ensuring they are job-ready and able to succeed. The Professional Pathways program, in particular, offers training in engineering, architecture, and construction management, addressing the industry's need for new skilled workers as older ones retire. By fostering relationships with employers and providing tailored training, Revolution Workshop bridges the gap between supply and demand in the construction workforce, promoting diversity and helping communities thrive.

→ **LEARN MORE**
about Revolution Workshop

AUTODESK

# Investments remain strong but reflect uncertainty

08
07
08
00

Future investment projections have fallen this year but are still robust—in D&M, 64% of business leaders say their organizations will increase or strongly increase their investments over the next three years. While this reflects confidence in the future, this number is down from 81% last year, indicating that leaders are being more conservative in an uncertain geopolitical and macroeconomic environment.

However, digitally mature organizations are significantly more bullish on the future, with 79% of leaders planning to increase future investments, compared to 52% at less digitally mature companies.

Further, future investments are higher at data-effective D&M companies, where 84% of leaders say they will increase future investments. This indicates that organizations are seeing outsized benefits from their investments and that digital transformation efforts may have eased implementation challenges, resulting in long-term cost savings and productivity gains.

D&M businesses scale back investment plans

81%
2024

64%
2025

Increase or strongly increase investment

AUTODESK
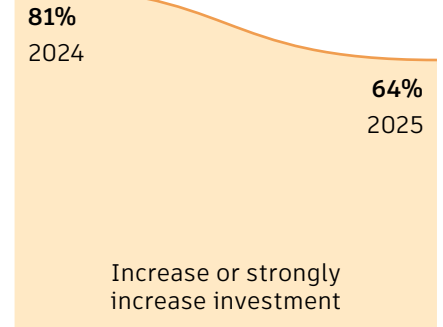
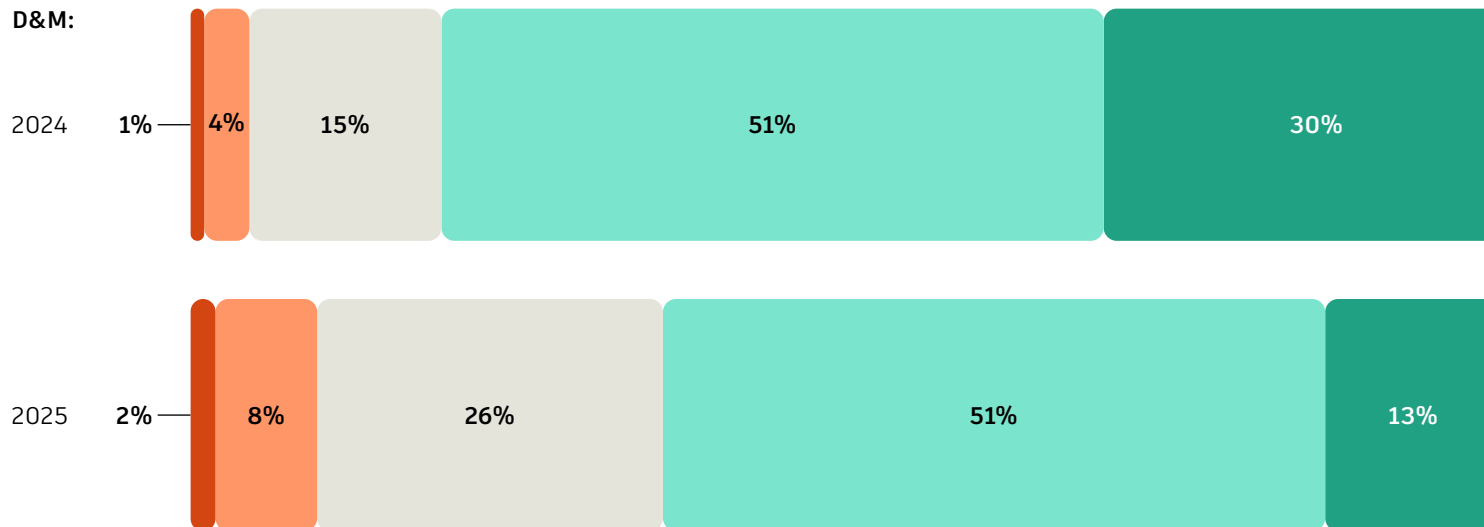# Future investments still robust

Two-thirds of organizations will increase their investments, down from 2024

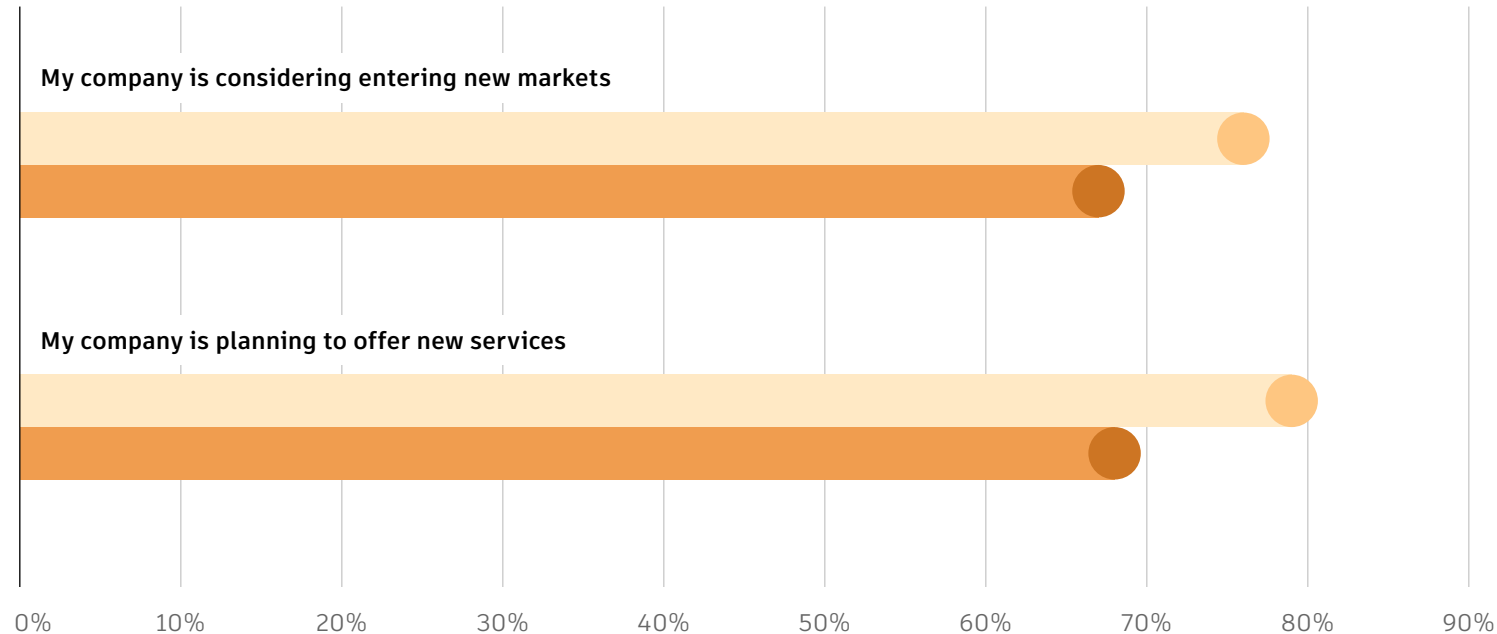● Strongly decrease　　● Decrease　　● Stay roughly the same　　● Increase　　● Strongly increase

D&M:

2024　1% — | 4% | 15% | 51% | 30% |

2025　2% — | 8% | 26% | 51% | 13% |

Survey question: How do you think your company or organization's level of investment will shift over the next 3 years?
5-point scale. Values do not add up to 100% due to rounding.

AUTODESK

Companies are pulling back on expansion efforts

D&M: ● 2024 ● 2025

My company is considering entering new markets

My company is planning to offer new services

0% 10% 20% 30% 40% 50% 60% 70% 80% 90%

Percentage of respondents who agree to statements: 1. My company is considering entering new markets. 2. My company is planning to offer new services.
Survey question: To what extent do you agree or disagree that your company or organization is doing the following to be more resilient? 5-point scale. Top two = agree.

AUTODESK

Most D&M leaders surveyed for the *2025 State of Design & Make* report say their companies continue to invest in entering new markets and in offering new products and services, but at a lower rate than last year— 67% say they will enter new markets this year compared to 76% in 2024. Enthusiasm for offering new services is also down, with 68% of leaders saying they will offer new services compared to 79% last year.

These findings echo the global drop in sentiment seen this year and align with efforts to control costs in the near term.

But as with so many aspects of design and manufacturing, digitally mature organizations are much less likely be affected by this general belt-tightening. Seventy-eight percent of digitally mature companies say they are considering entering new markets, compared with 58% of less digitally mature companies. They are also more likely (80%) to offer new products and services than their counterparts (59%), and to increase their investments into acquisitions (66% compared to 41%). These actions give digitally mature organizations a competitive advantage, allowing them to expand while others contract under market pressures.
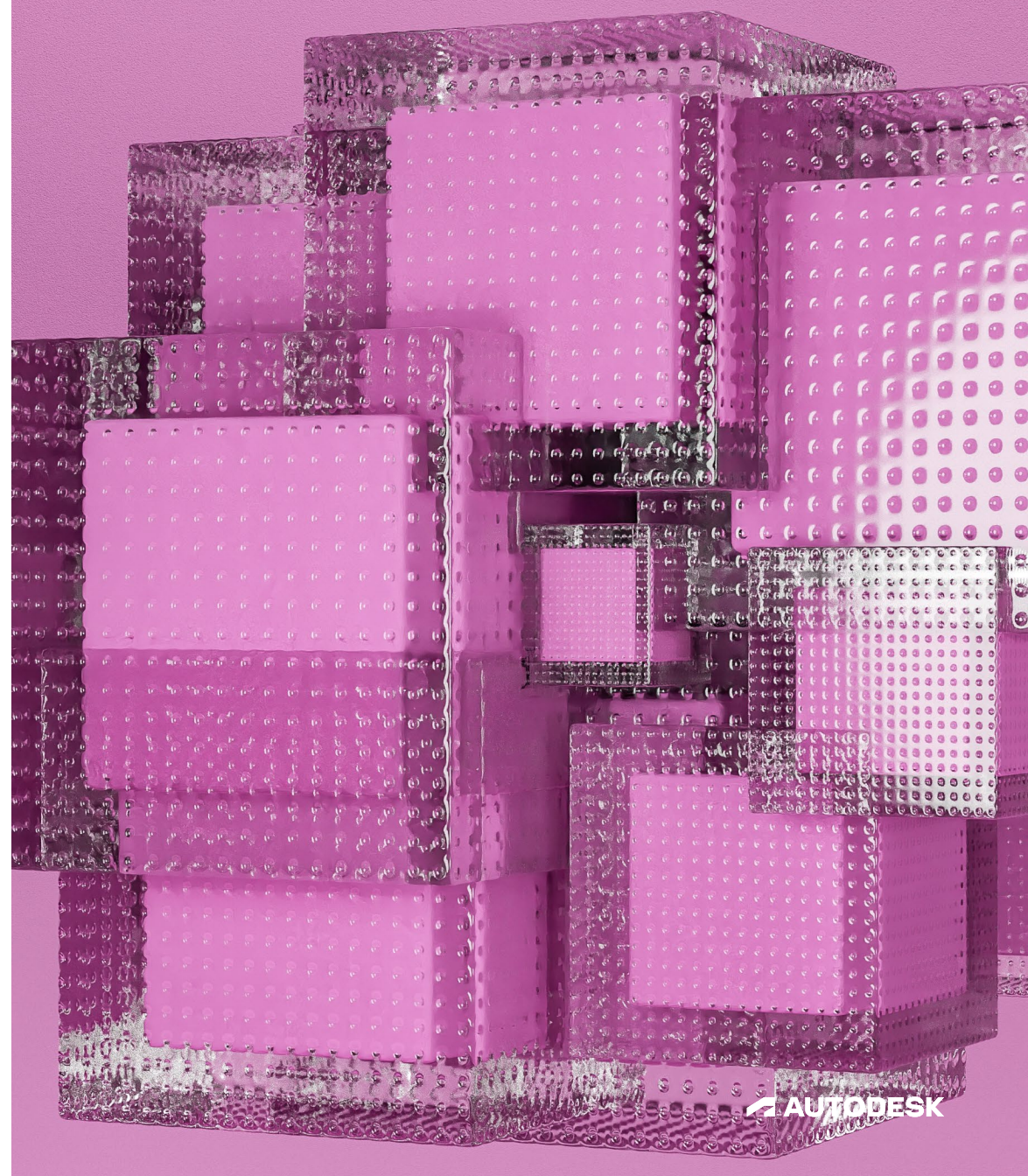
Conclusion

Regardless of recent headwinds, leaders in D&M are focused on solving today's problems with an eye toward future opportunity. While cautious in the near term, leaders that want to gain a competitive edge need to think about the long-term benefits of investing in digital transformation now—and the implications that falling behind could have across the organization.

AUTODESK

Methodology

For the 2025 report, Autodesk surveyed and interviewed 5,594 industry leaders, futurists, and experts in the architecture, engineering, construction, and operations; product design and manufacturing; and media and entertainment industries from countries around the globe. This report contains key findings from this research, including details at the sector and regional level.

The quantitative data in this D&M subsample (n= 1925) was collected between May and August 2024 through a 20-minute online survey.[4] Autodesk partnered with Qualtrics for the collection of this data. In addition, 34 qualitative interviews with business leaders and futurists were conducted in October and November 2024.
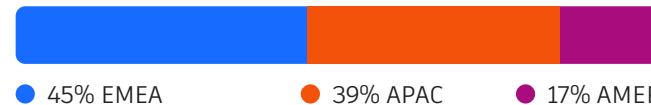
D&M survey sample:

2025:
1,925 D&M respondents

2024:
1,787 D&M respondents

2023:
884 D&M respondents

D&M
1,925 total
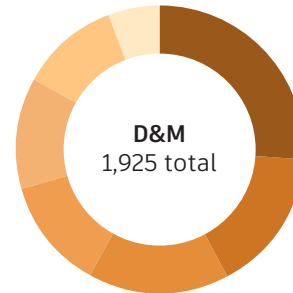
- 26% Consumer products
- 16% Automotive, mobility, and other transportation
- 16% Process manufacturing
- 13% Industrial machinery
- 12% Building products and fabrication
- 11% Life sciences manufacturing
- 6% Aerospace and defense equipment

● 45% EMEA   ● 39% APAC   ● 17% AMER

66%
of survey participants are decision-makers in their companies

12 years
is the average time of experience in their industry

33%
of respondents said that they primarily use Autodesk Design and Make software

[4] *2025 State of Design & Make* questionnaire

AUTODESK

Glossary

Data-effective companies:
Respondents were asked, "How effective would you say your company or organization is at leveraging data?" Those who responded with "very effective" on a 4-point scale are referred to as data-effective companies. This is 18% of respondents.

Digital maturity:
Respondents were asked how far their companies were in their transformation journeys. Respondents who described their organization as "early stage" or "right in the middle" of their digital transformation journeys are considered less digitally mature companies. Those who responded "approaching the goal" or having "achieved the goal" of digital transformation are considered more digitally mature companies. Of the D&M respondents, 45% are digitally mature.

Industry:
AECO: Architecture, engineering, construction, and operations
- Architecture services
- Building owners (i.e., developers, real estate companies, governments)
- Civil infrastructure owners (e.g., transportation infrastructure, water infrastructure)
- Construction services
- Engineering service providers
- Mining
- Oil and gas
- Utilities and telecom

D&M: Design and manufacturing
- Aerospace and defense equipment
- Automotive, mobility, and other transportation (including supply chain)
- Building products and fabrication
- Consumer products
- Industrial machinery
- Life sciences manufacturing
- Process manufacturing

M&E: Media and entertainment
- Advertising, publishing, and graphic design
- Film and TV
- Games

Leaders and experts:
- *Leaders:* Sixty-six percent of survey participants in D&M are decision-makers in their companies. In this report, this group is referred to as leaders. Job roles for the leaders group include business owners/entrepreneurs, directors, and VP- and C-level executives.
- *Experts:* The remaining 34% of D&M respondents are referred to as experts. This group includes respondents at the nonmanagerial level and managers.

Region:
APAC: Asia-Pacific
   Australia, China, India, Japan, Singapore, South Korea

EMEA: Europe, the Middle East, and Africa
   France; Germany; Italy; Middle East (Saudi Arabia, United Arab Emirates); Netherlands; Nordics (Denmark, Finland, Norway, Sweden); Spain; Turkey; United Kingdom

AMER: North, Central, and South America
   Brazil, Canada, Mexico, United States

Sustainability:
The survey questions about sustainability, for example, in the list of changes companies are making, focus on environmental sustainability; however, this definition was not explicitly stated.

In one-on-one interviews, a descriptive definition was used incorporating the United Nations definition: "Meeting the needs of the present without compromising the ability of future generations to meet their own needs." Respondents were told this includes efforts related to the environment (mitigating the effect on climate change); the community (social well-being, improving the life of populations); and corporate governance.

About Autodesk

Autodesk is changing how the world is designed and made. Its technology spans architecture, engineering, construction, operations, product design, manufacturing, and media and entertainment, empowering innovators everywhere to solve challenges big and small. From greener buildings to smarter products to more mesmerizing blockbusters, Autodesk software helps customers design and make a better world for all. For more information, visit autodesk.com or follow @autodesk on social media.

Contact Autodesk at state.of.design.and.make@autodesk.com about this research report or to sign up to participate in future research programs.

AUTODESK