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Section 1.
Introduction

Overview

Methodology, data collection and analysis by Aviation Week Network on behalf of Siemens. Data collected July 12 through August 3, 2024. Methodology conforms to accepted marketing research methods, practices and procedures.

Methodology

Beginning on July 12, 2024, Informa Markets sent emailed invitations to participate in an online survey to targeted business that are involved in manufacturing or product development within the aviation and defense industry.

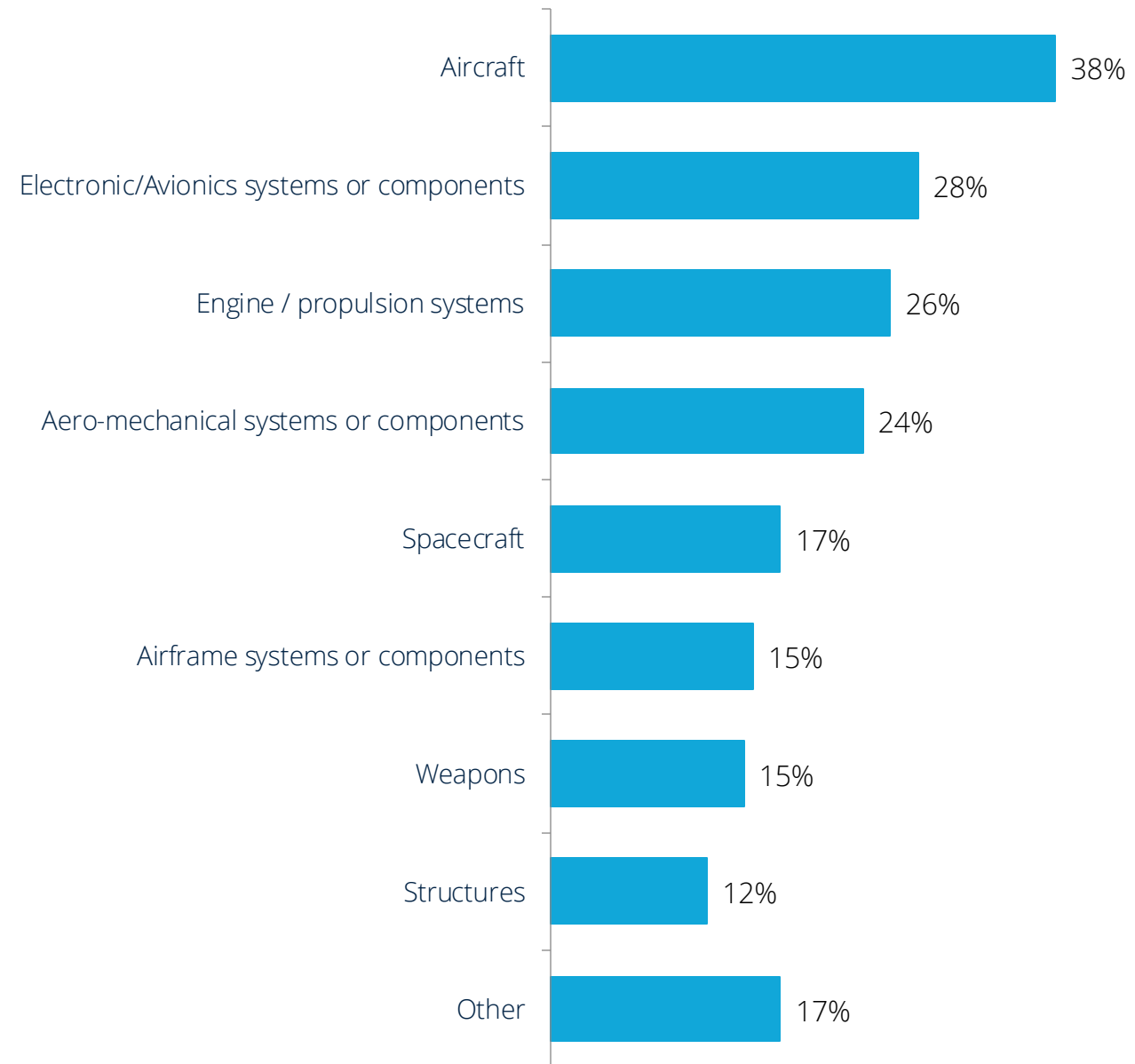By August 3, 2024, Informa Markets had received 143 usable responses.

# Section 2.
Key Findings

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Primary Products

Respondent companies are involved in a wide variety of products. Importantly, no single product type dominates the sample.

Product	Percentage
Aircraft	38%
Electronic/Avionics systems or components	28%
Engine / propulsion systems	26%
Aero-mechanical systems or components	24%
Spacecraft	17%
Airframe systems or components	15%
Weapons	15%
Structures	12%
Other	17%

Question: What are your company's primary products?
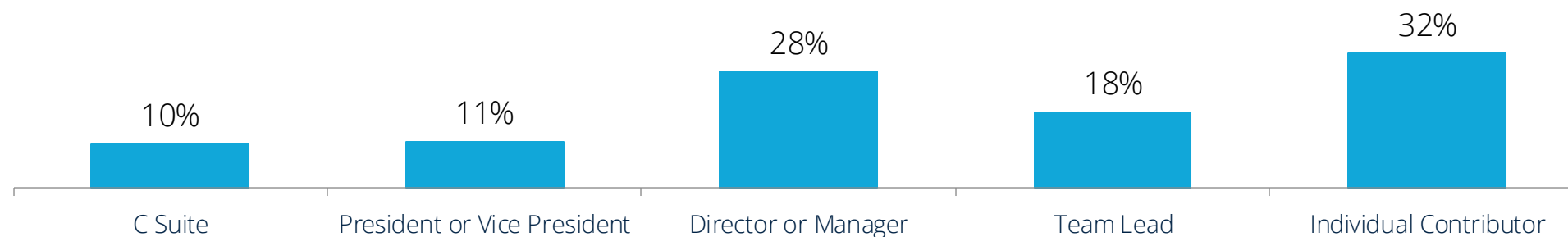Base: All respondents; multiple answers permitted (n=143)

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Company Description

Nearly half of respondents are OEMs. 24% were Tier 3 and below. This variety represents the whole aerospace industry.

45%
17%
13%
24%

- OEM
- Tier 1 System Supplier
- Tier 2 Component Supplier
- Other
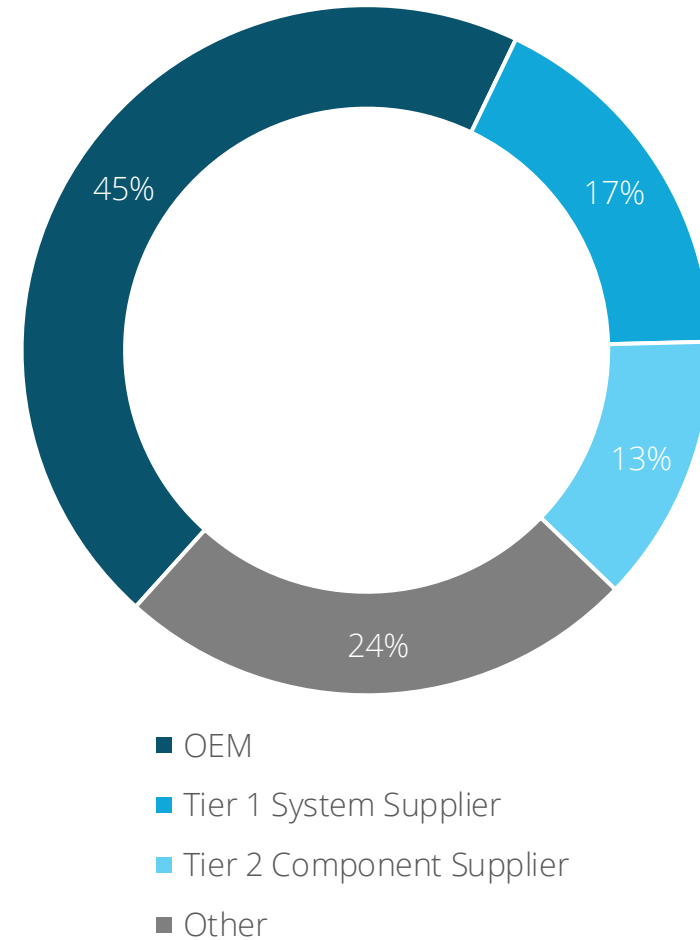
Question: Which of the following best describe your company?
Base: All respondents (n=143)

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Role in Company

Half of respondents have a director or manager role or higher within their company. Two-Thirds are in some kind of leadership position.

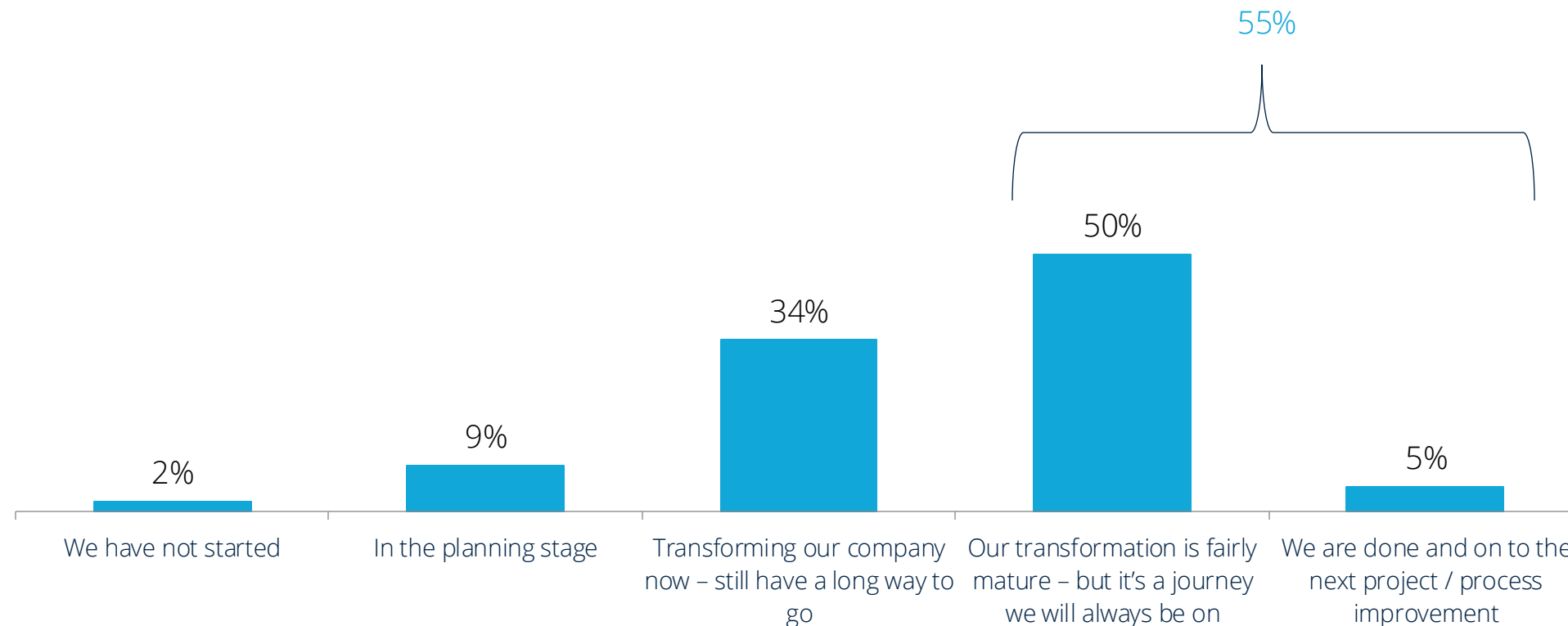| C Suite	President or Vice President	Director or Manager	Team Lead	Individual Contributor
10%	11%	28%	18%	32%

Question: Which of the following best describe your role?
Base: All respondents; (n=143)

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Status of Digital Transformation

55% of respondents believe their digital transformation is mature or complete.

55%

50%

34%

9%

5%

2%

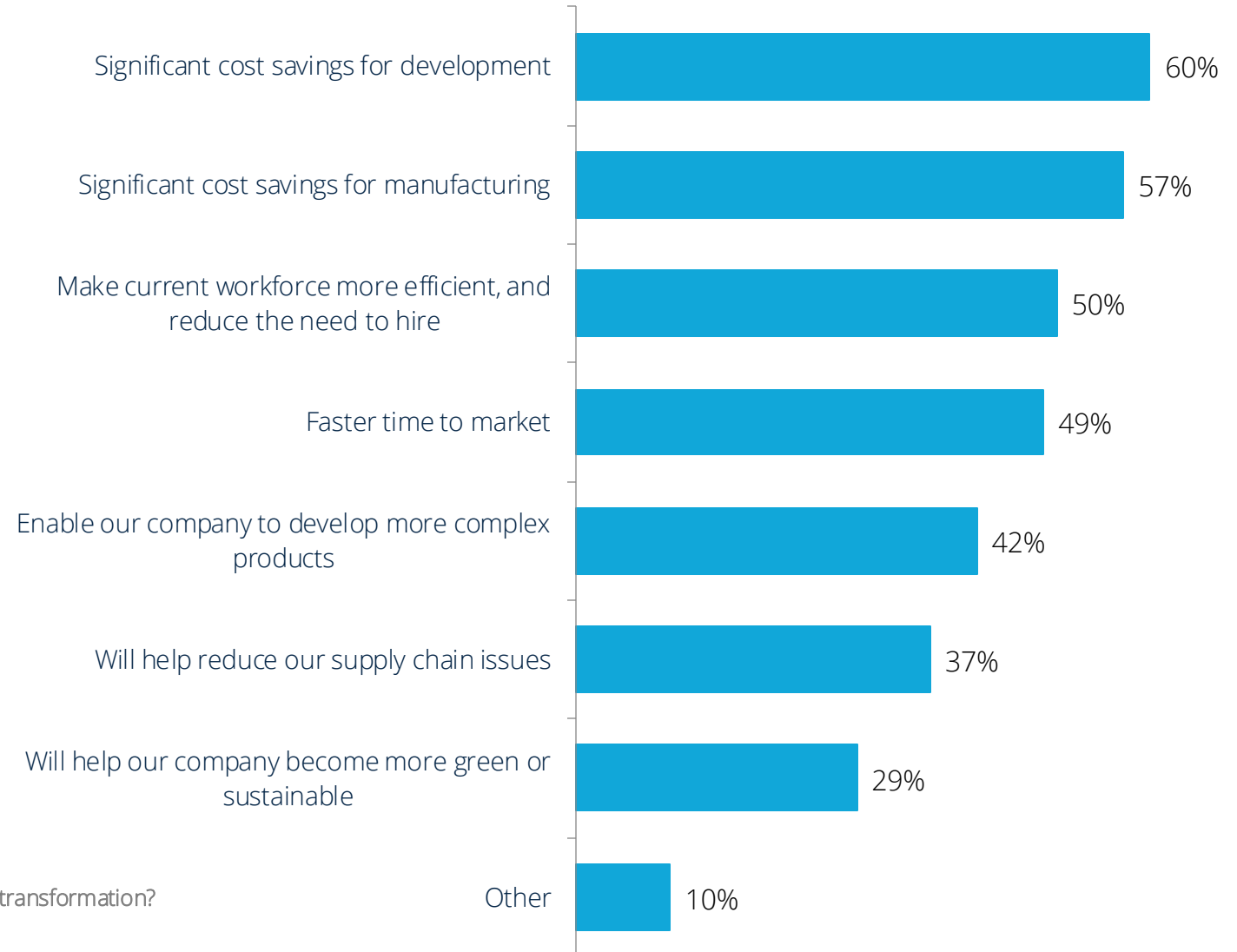| We have not started | In the planning stage | Transforming our company now – still have a long way to go | Our transformation is fairly mature – but it's a journey we will always be on | We are done and on to the next project / process improvement |

Question: What statement best describes the status of your company's digital transformation?
Base: All respondents; (n=143)

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Expected Benefits of Digital Transformation

Half or more of all respondents expect digital transformation to help them save cost, multiple their workforce, and develop products faster.

Significant cost savings for development — 60%

Significant cost savings for manufacturing — 57%

Make current workforce more efficient, and reduce the need to hire — 50%

Faster time to market — 49%

Enable our company to develop more complex products — 42%

Will help reduce our supply chain issues — 37%

Will help our company become more green or sustainable — 29%

Other — 10%

Question: What benefits do you expect from your company's digital transformation?
Base: All respondents; multiple answers permitted (n=143)

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End Goal of Digital Transformation

74% of respondents believe that the goal of digital transformation is configured or connected digital data. Just one in four believe digital transformation should include automaton, generative design, or optimization.

Connecting tools and data across multiple engineering domains and processes — 43%

Moving from paper to digital workflows — 20%

Using connected data to automate development or manufacturing tasks — 13%

Data configuration (Product data management) — 11%

Closed loop design or manufacturing optimization — 7%

Generative design — 6%
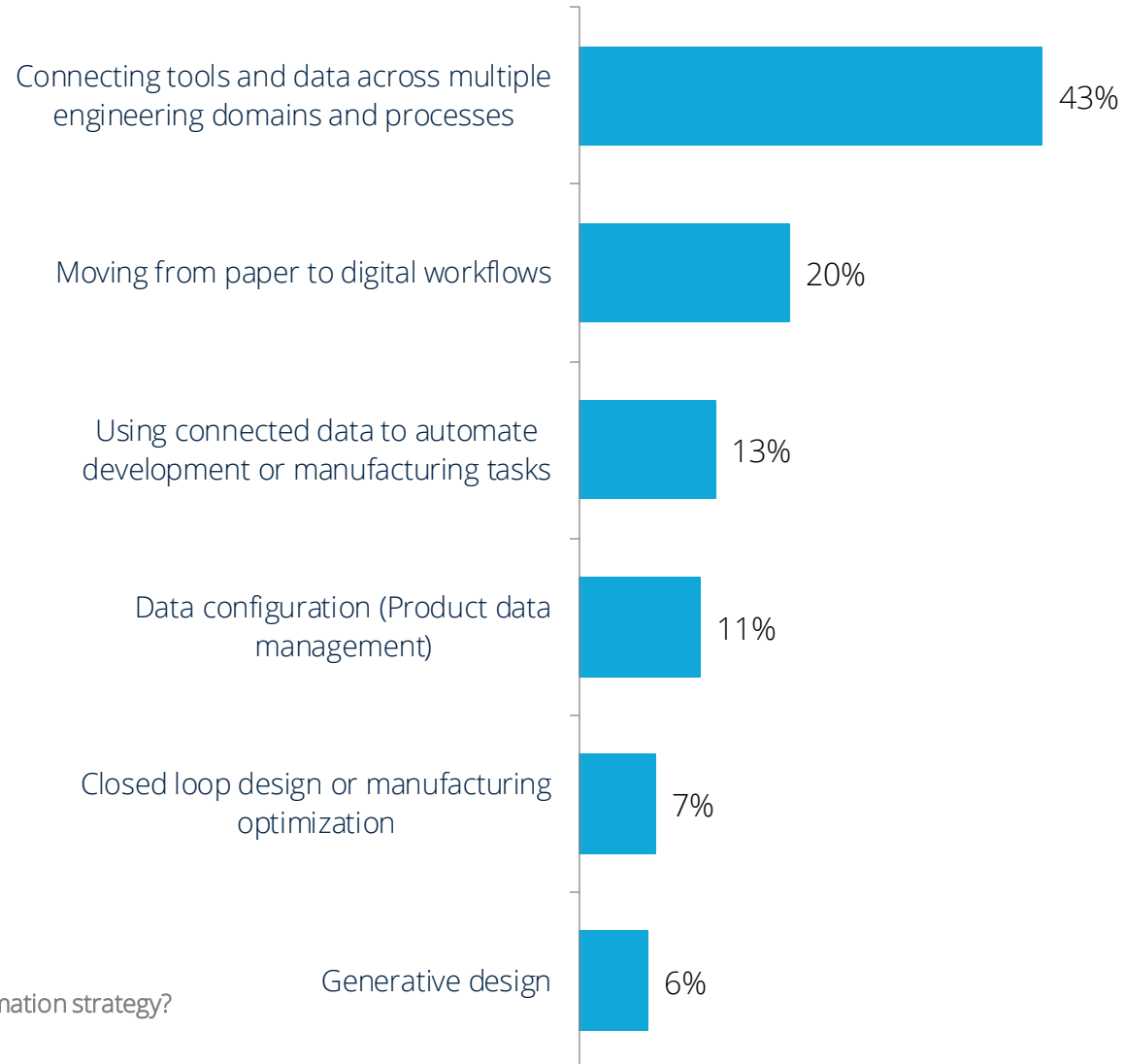
Question: What is the end goal of your company's current digital transformation strategy?
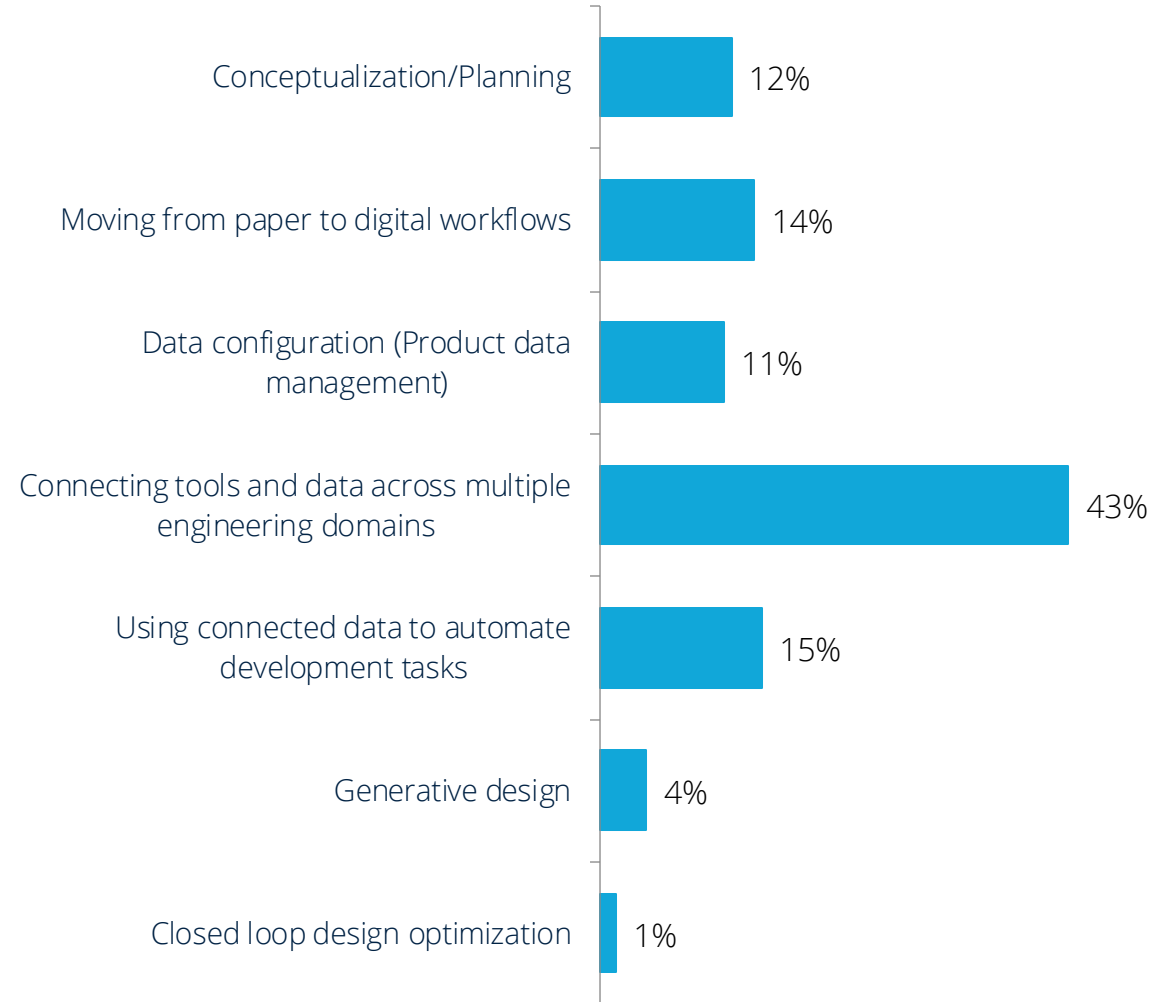Base: All respondents (n=143)

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Digital Transformation Stage for Design Group

1 in 10 respondents have not yet start digital transformation.

7 of 10 respondents are configuring or connecting digital data.

Just 2 in 10 respondents have moved beyond beyond connection in the digital transformation journey.

Conceptualization/Planning — 12%

Moving from paper to digital workflows — 14%

Data configuration (Product data management) — 11%

Connecting tools and data across multiple engineering domains — 43%

Using connected data to automate development tasks — 15%

Generative design — 4%

Closed loop design optimization — 1%

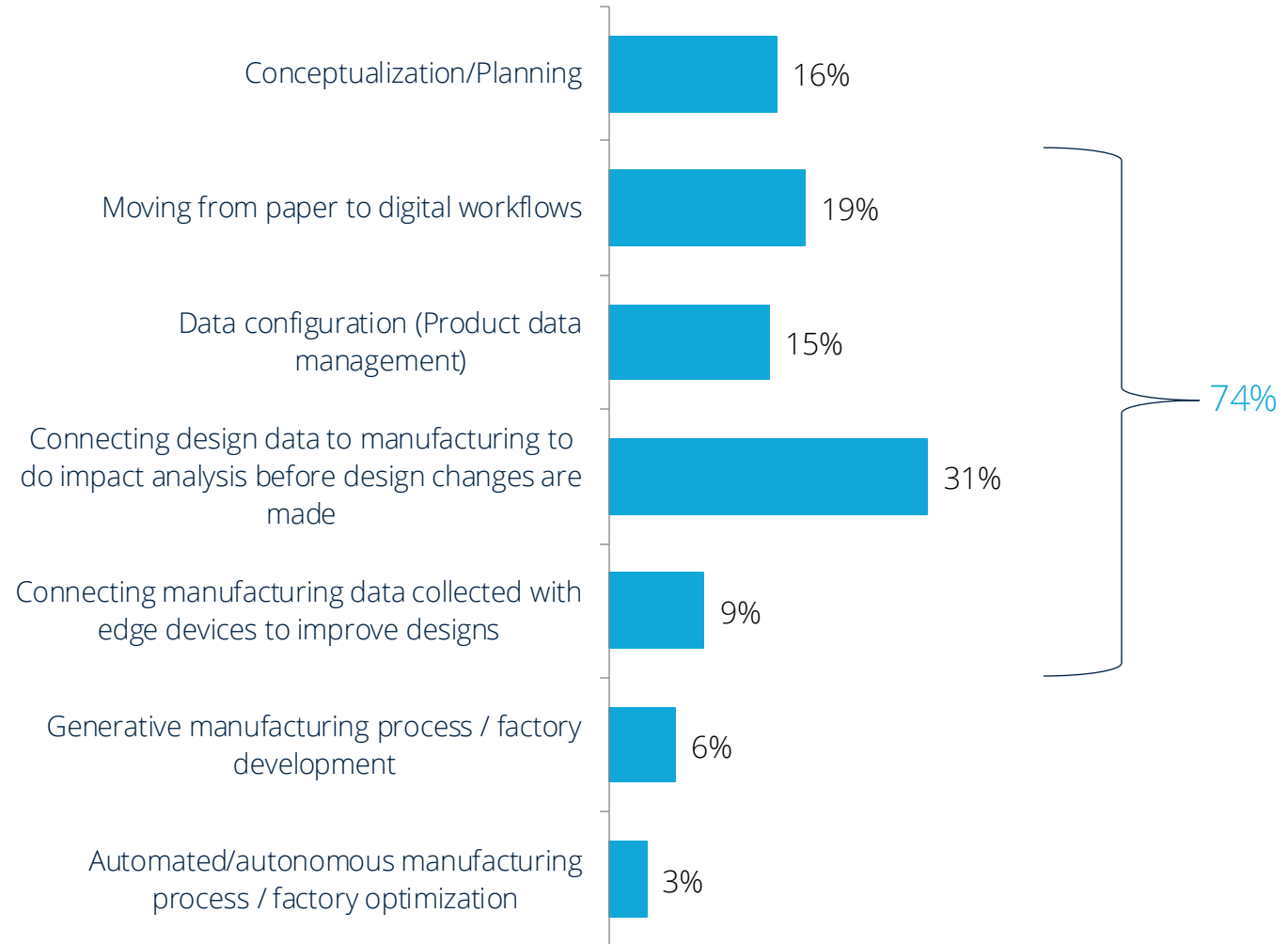Question: Where is your company's design group in the process of digital transformation?
Base: All respondents (n=143)

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Digital Transformation Stage for Manufacturing Group

16% of respondents are still planning to start digital transformation.

3/4ths of respondents are configuring or connecting digital data.

Just 1 in 10 respondents have moved beyond beyond connection in the digital transformation journey.

Stage	Percentage
Conceptualization/Planning	16%
Moving from paper to digital workflows	19%
Data configuration (Product data management)	15%
Connecting design data to manufacturing to do impact analysis before design changes are made	31%
Connecting manufacturing data collected with edge devices to improve designs	9%
Generative manufacturing process / factory development	6%
Automated/autonomous manufacturing process / factory optimization	3%

74%

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Issues Experienced in Digital Transformation Journey
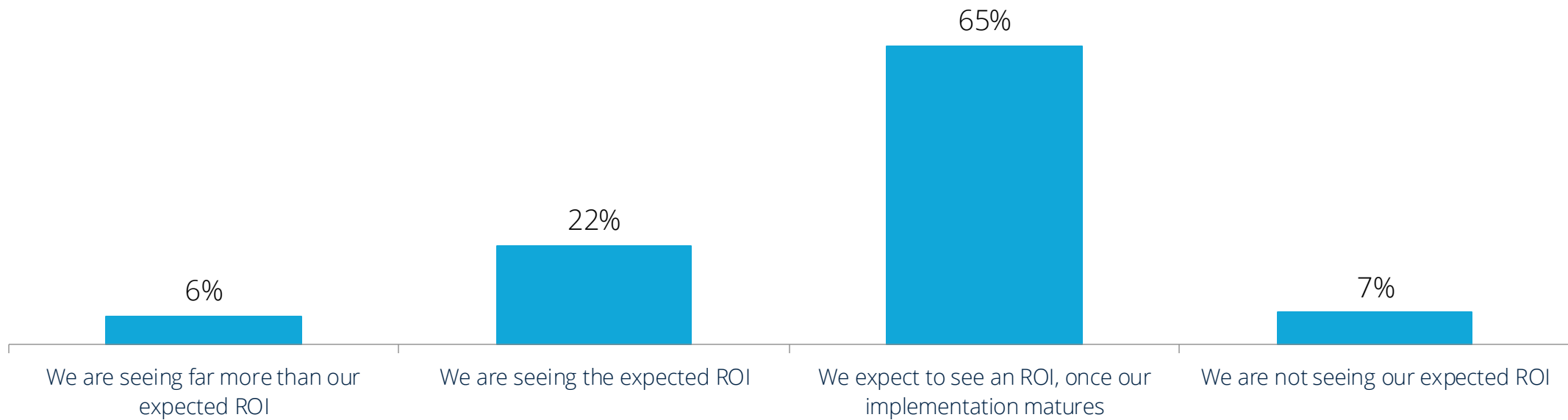
The most common issues experienced are disconnected technologies, platforms, or tools (50%) and underestimated scope/scale of the process (47%). 11% reported that they have not experienced any issues.

Issue	Percentage
Disconnected technologies, platforms, or tools	50%
Underestimated scope/scale of the process	47%
Higher than expected cost to implement	36%
Company culture – resistance to change	31%
Lack of clear vision	23%
Data transformation – cannot not get our data in a useable format	21%
Project canceled due to lack of progress or ROI	6%
Other	5%
No issues	11%
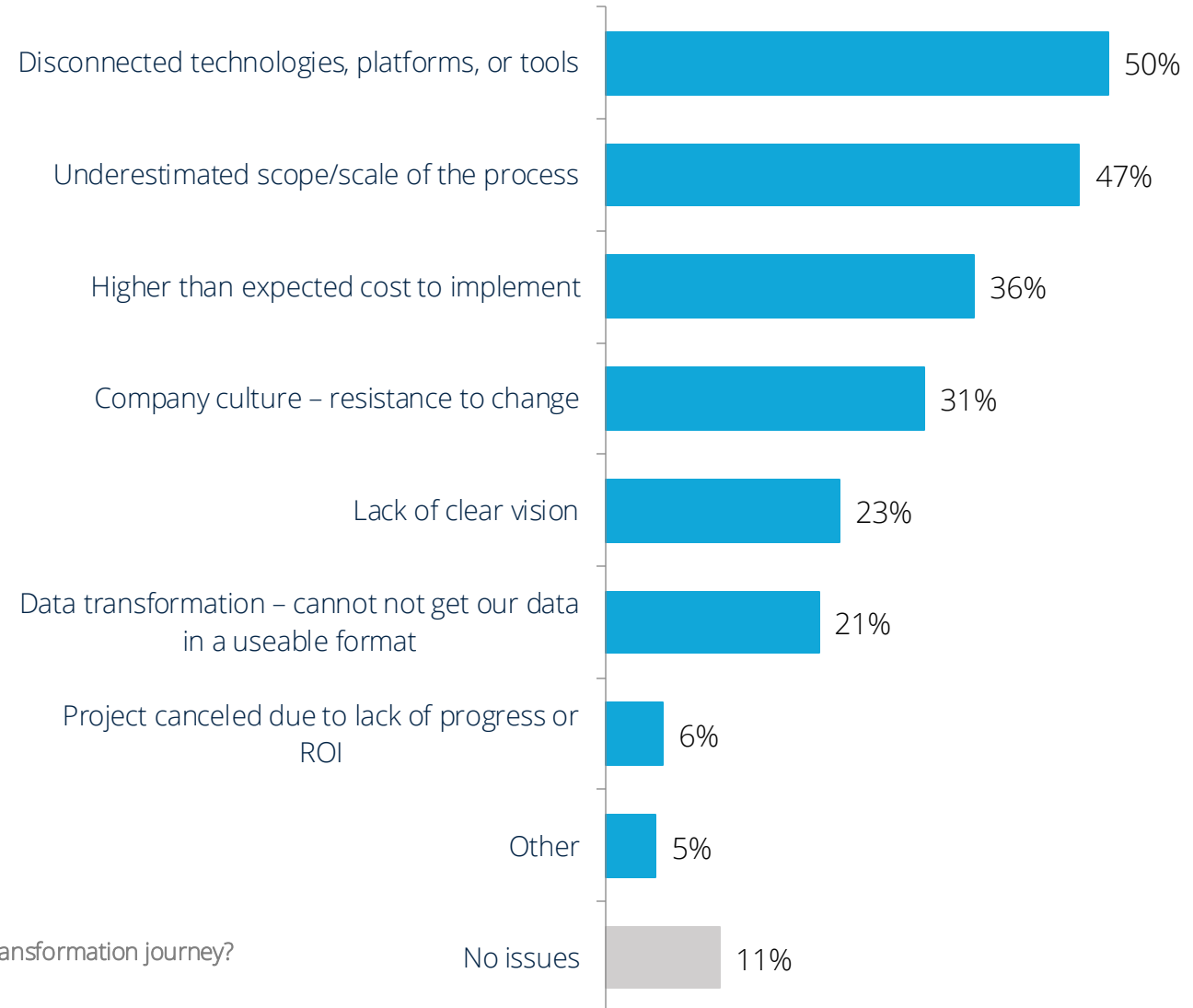
Question: What issues has your company experienced in its digital transformation journey?
Base: All respondents; multiple answers permitted (n=143)

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Return on Digital Transformation Investment

72% of respondents are not yet seeing the return on their Digital Transformation investment that they expect to see.

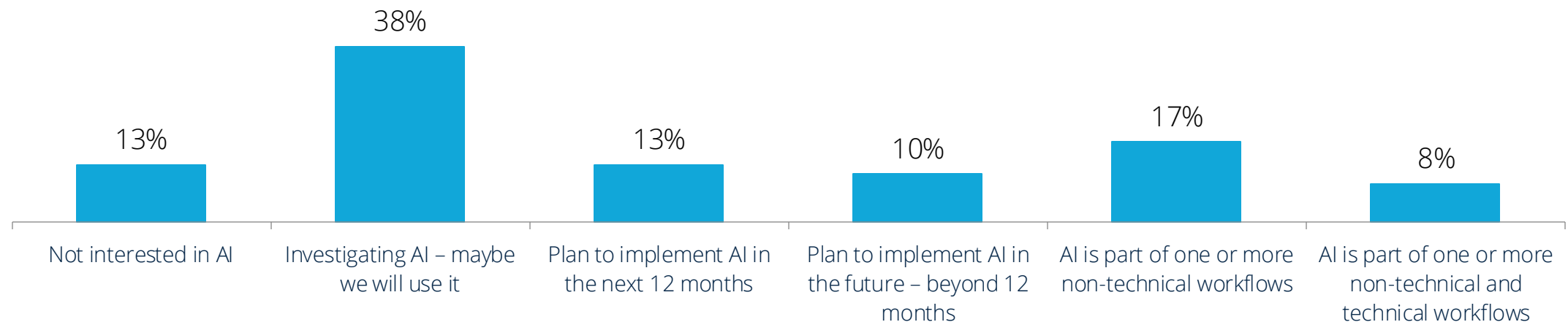|			
6%	22%	65%	7%
We are seeing far more than our expected ROI	We are seeing the expected ROI	We expect to see an ROI, once our implementation matures	We are not seeing our expected ROI

Question: Is your company realizing the expected Return on your company's digital transformation investment?
Base: All respondents; (n=143)

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Status of AI in Company

87% of of respondents are interested in AI today, but just 8% of respondents are using AI in technical workflows.

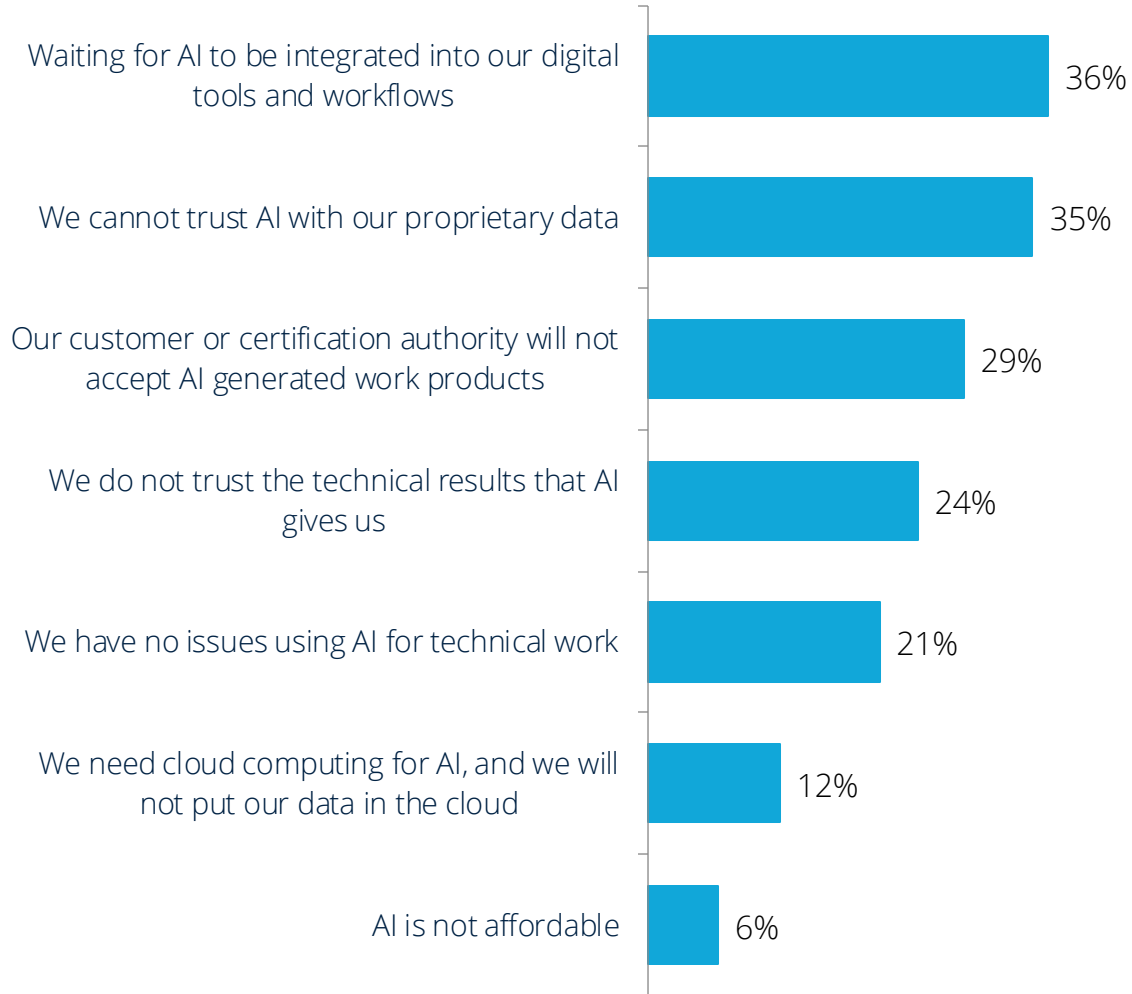| Not interested in AI	Investigating AI – maybe we will use it	Plan to implement AI in the next 12 months	Plan to implement AI in the future – beyond 12 months	AI is part of one or more non-technical workflows	AI is part of one or more non-technical and technical workflows
13%	38%	13%	10%	17%	8%

Question: What is the status of Artificial Intelligence (AI) in your company?
Base: All respondents; (n=143)

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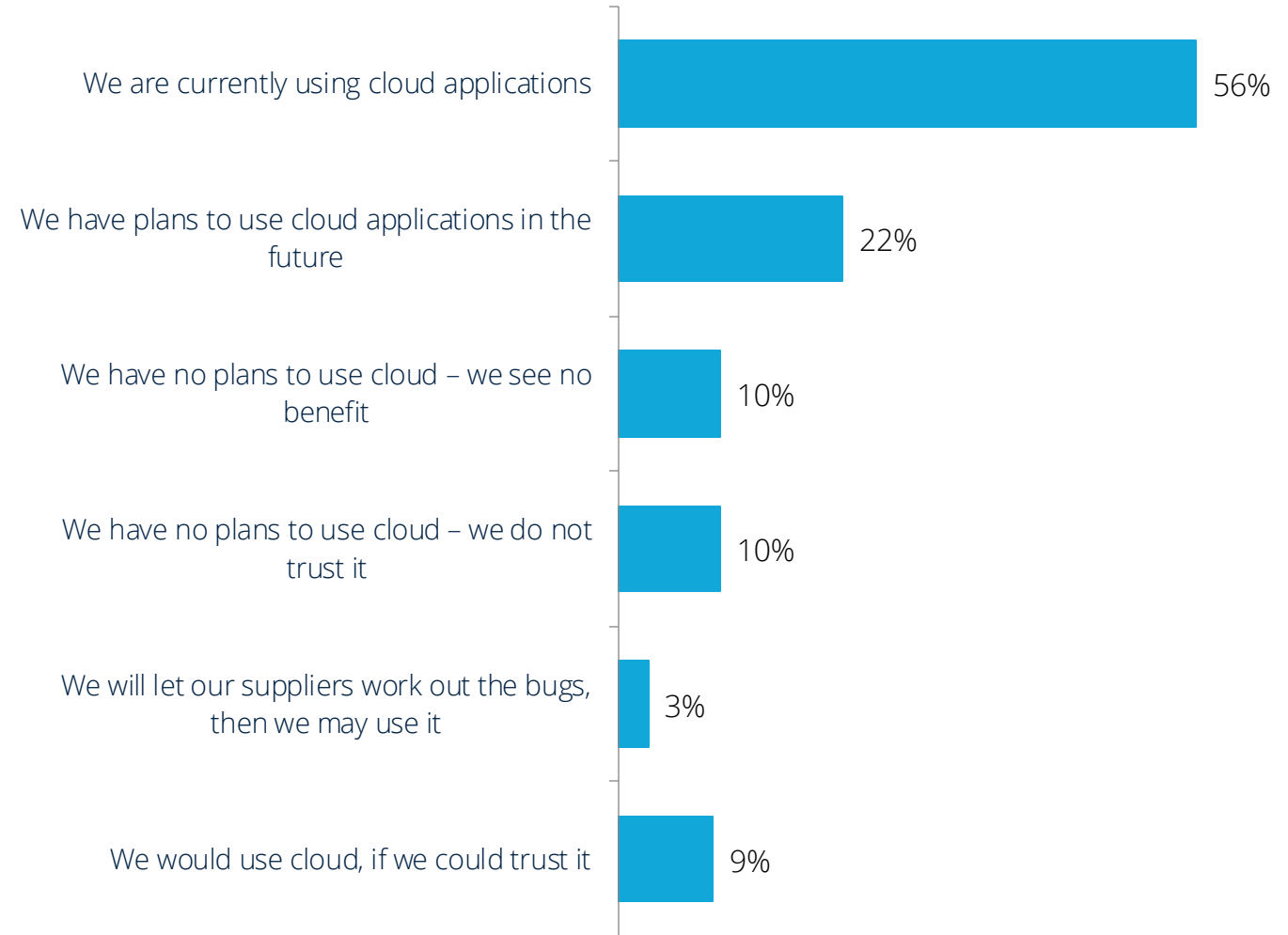# Issues to the Use of AI in Design or Technical Work

The two leading issues keeping AI out of design or technical work are the need to integrate AI into the digital tools or workflows (36%) and the lack of trust of AI with proprietary data (35%).

Waiting for AI to be integrated into our digital tools and workflows — 36%

We cannot trust AI with our proprietary data — 35%

Our customer or certification authority will not accept AI generated work products — 29%

We do not trust the technical results that AI gives us — 24%

We have no issues using AI for technical work — 21%

We need cloud computing for AI, and we will not put our data in the cloud — 12%

AI is not affordable — 6%

Question: What issues are keeping your company from using AI for design or other technical work?
Base: All respondents; multiple answers permitted (n=143)

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Fit of Cloud Hosted Applications in Transformation Strategy

The majority of respondents (56%) are currently using cloud applications. Just 10% say they have no plans to use cloud applications.

We are currently using cloud applications — 56%

We have plans to use cloud applications in the future — 22%

We have no plans to use cloud – we see no benefit — 10%

We have no plans to use cloud – we do not trust it — 10%

We will let our suppliers work out the bugs, then we may use it — 3%

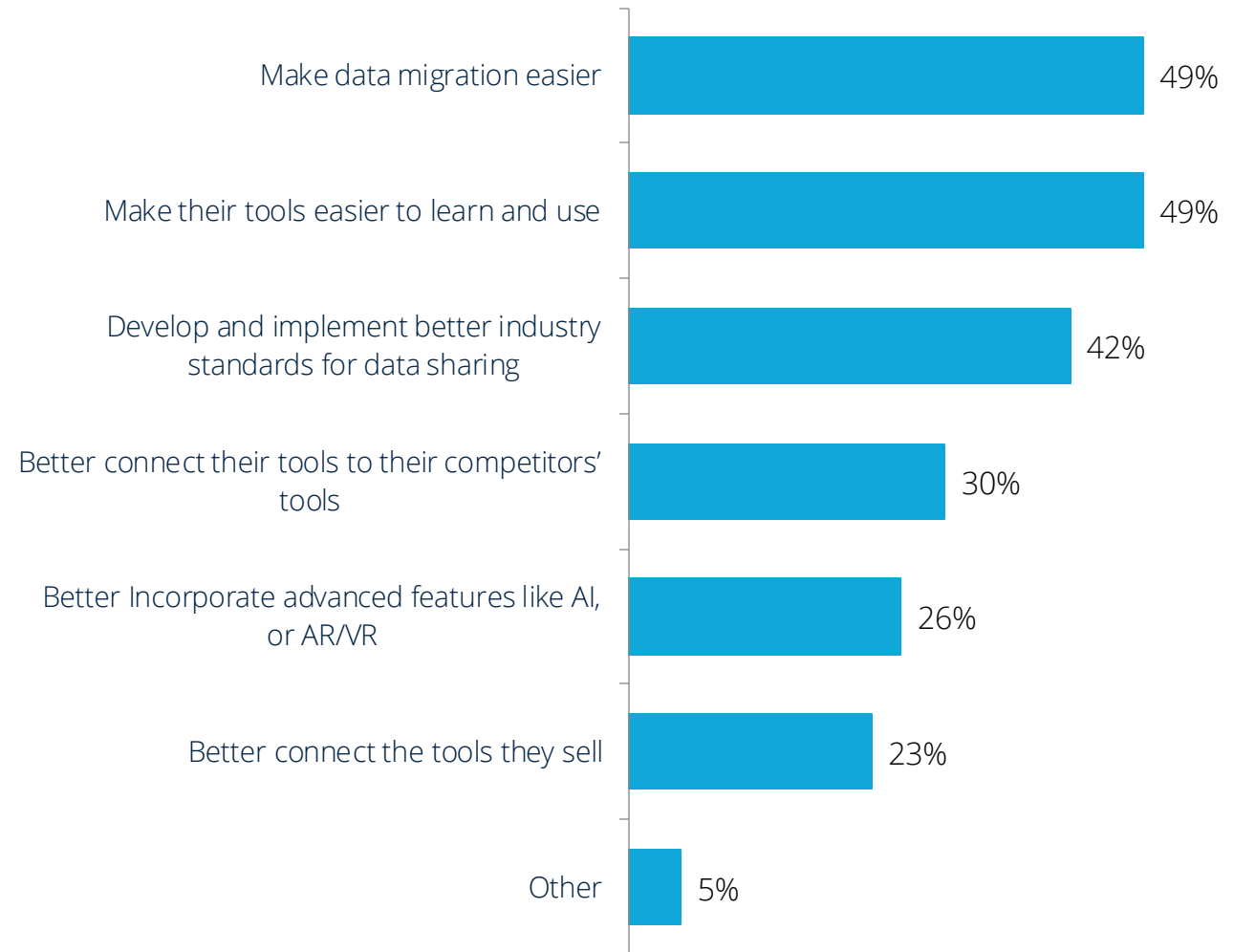We would use cloud, if we could trust it — 9%

Question: Where do cloud hosted applications fit in your company's digital transformation strategy?
Base: All respondents; multiple answers permitted (n=143)

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Methods Vendors Can Help with Digital Transformation

The leading ways a digital transformation software tool vendor help with digital transformation are:
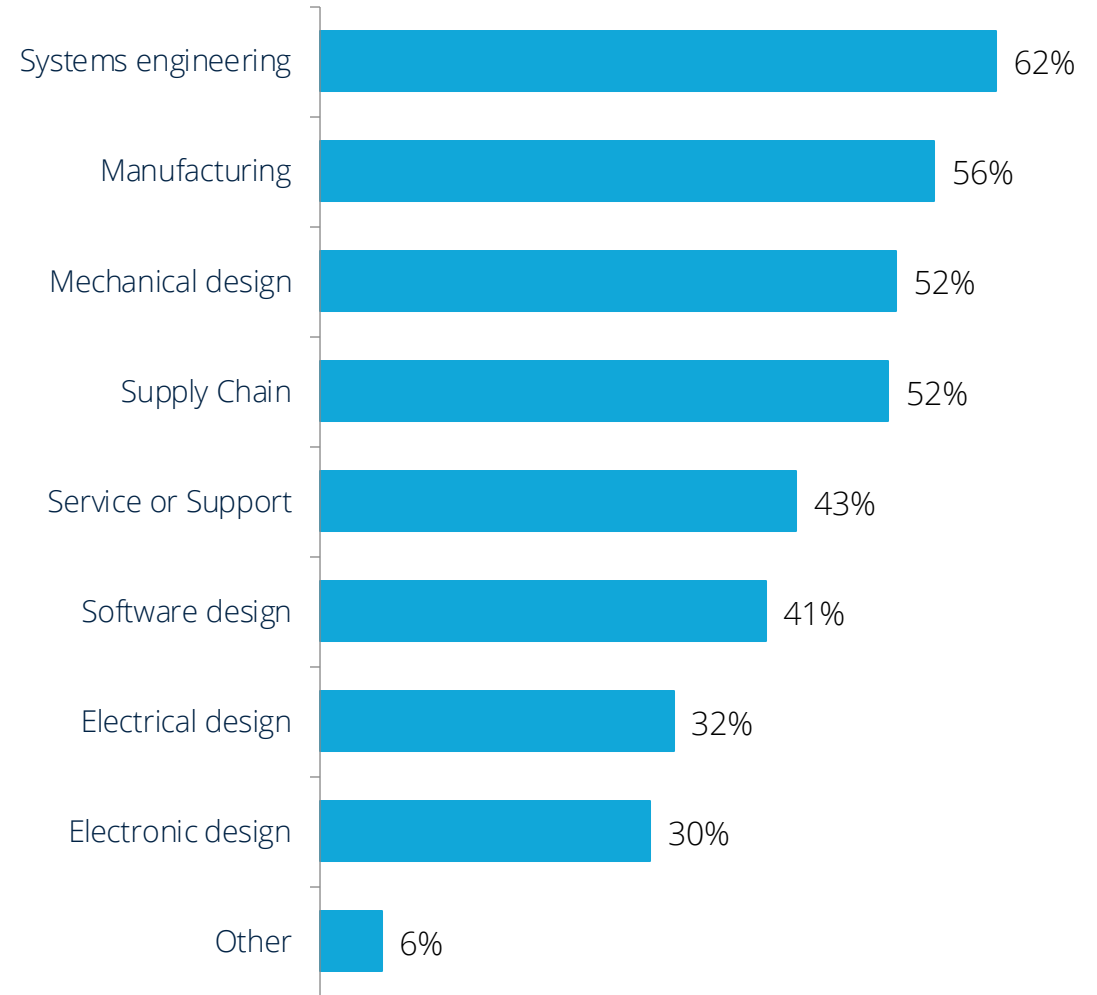
- Make data migration easier
- Make their tools easier to learn and use
- Develop and implement better industry standards for data sharing

Method	Percentage
Make data migration easier	49%
Make their tools easier to learn and use	49%
Develop and implement better industry standards for data sharing	42%
Better connect their tools to their competitors' tools	30%
Better Incorporate advanced features like AI, or AR/VR	26%
Better connect the tools they sell	23%
Other	5%

Question: How can digital transformation software tool vendors help your digital transformation?
Base: All respondents; multiple answers permitted (n=143)
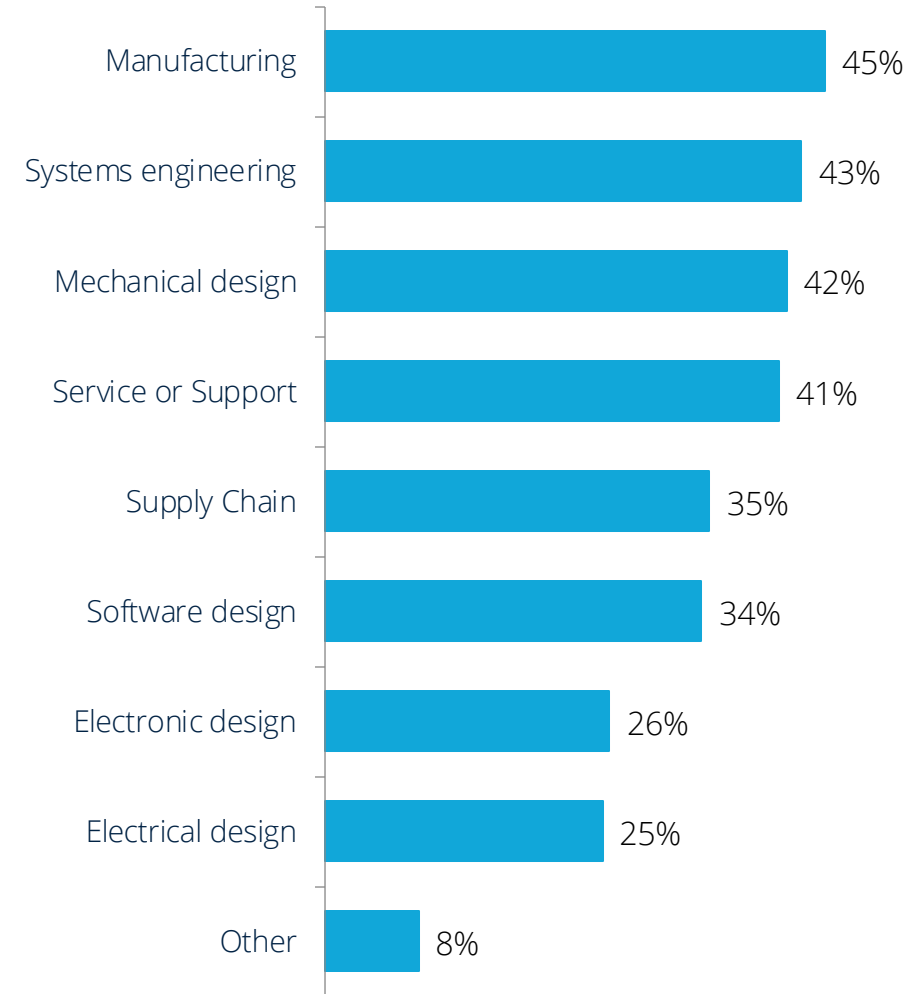
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Areas of Company Investing in Digital Transformation

Systems Engineering and Manufacturing are the top two areas of current investment and the top two areas of planned future investment.

Area	Percentage
Systems engineering	62%
Manufacturing	56%
Mechanical design	52%
Supply Chain	52%
Service or Support	43%
Software design	41%
Electrical design	32%
Electronic design	30%
Other	6%

Question: What areas is your company investing in digital transformation today?
Base: All respondents; multiple answers permitted (n=143)

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Areas Planned for Digital Transformation Investment
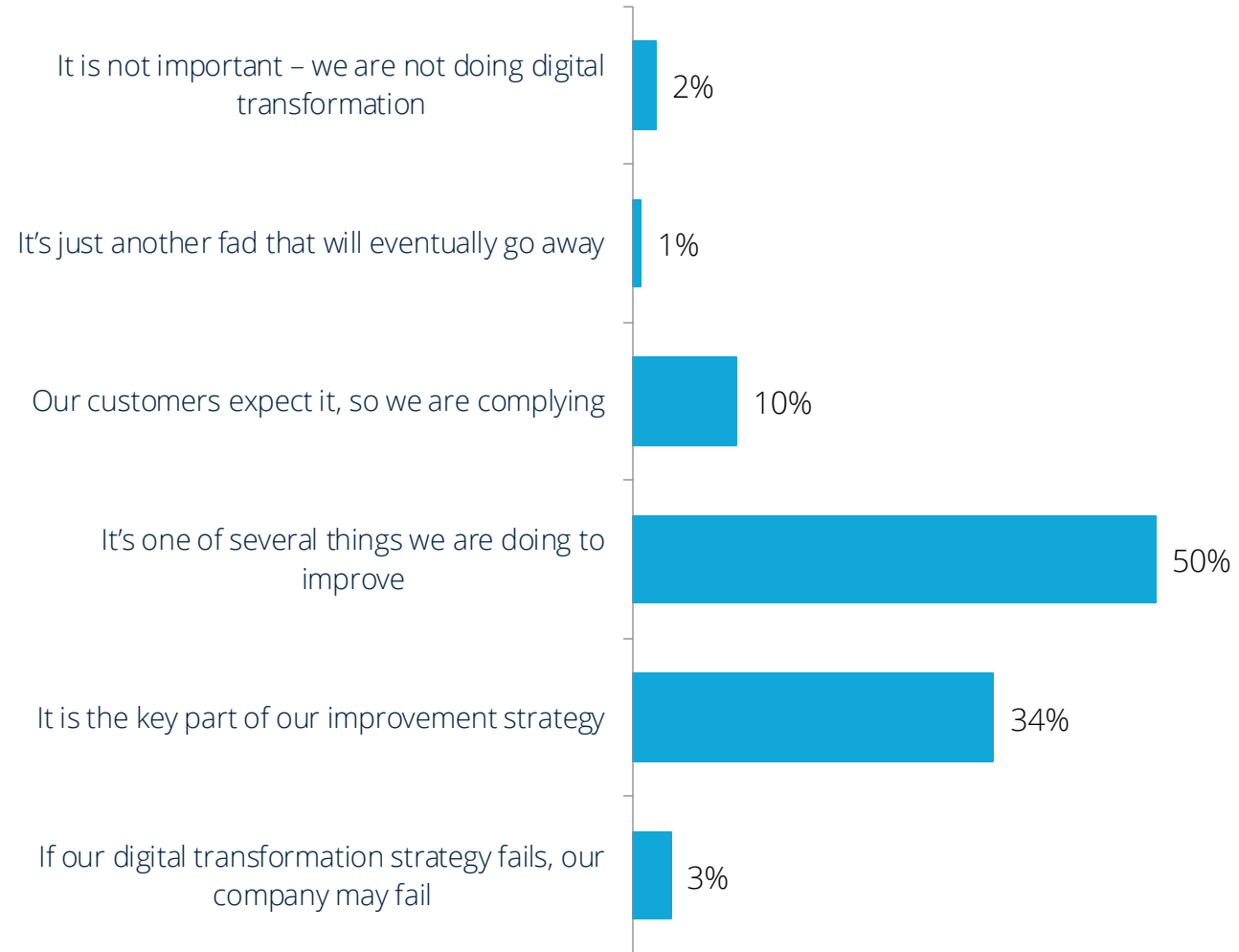
Systems Engineering and Manufacturing are the top two areas of current investment and the top two areas of planned future investment.

Area	Percentage
Manufacturing	45%
Systems engineering	43%
Mechanical design	42%
Service or Support	41%
Supply Chain	35%
Software design	34%
Electronic design	26%
Electrical design	25%
Other	8%

Question: What new areas is your company planning to invest in digital transformation in the next three years?
Base: All respondents; multiple answers permitted (n=143)

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Importance of Digital Transformation

Over 80% of respondents indicate that digital transformation is either one of several things their company is doing to improve (50%) or it is the key part to their improvement strategy (34%).

It is not important – we are not doing digital transformation — 2%

It's just another fad that will eventually go away — 1%

Our customers expect it, so we are complying — 10%

It's one of several things we are doing to improve — 50%

It is the key part of our improvement strategy — 34%

If our digital transformation strategy fails, our company may fail — 3%

Question: How important is digital transformation to your company?
Base: All respondents (n=143)

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