

**Fujitsu Future Insights**

**Global Sustainability Transformation  
Survey Report 2023**

# **Four keys to successful sustainability transformation**

**Unleashing the power of digital**





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# Introduction

Today, external factors such as climate change, geopolitical tensions and financial turbulence are having a major impact on business. Faced with these pressures, how can business leaders transform their organizations and respond to sustainability challenges?

In January 2023, Fujitsu commissioned Oxford Economics to survey 1,800 decision makers in nine countries to assess the status of their sustainability transformation\* activities, including how digital transformation\* is contributing to achieving their sustainability goals. To support the quantitative research, we held in-depth interviews with 22 leaders to assess the status, challenges and outcomes of their sustainability transformation efforts.

The survey findings showed that many leaders now see sustainability challenges as business opportunities, with transformation that delivers environmental and social value now considered an important management priority. On the other hand, the survey revealed that many organizations are not yet implementing sustainability transformation, with only 8% of organizations true sustainability leaders.

We analyzed in detail the characteristics that these leaders have in common, identifying the four essential success factors for sustainability transformation. These include strong leadership in establishing a purpose that is sustainability-oriented and in building resonance with both customers and employees around sustainability initiatives. Sustainability leaders are also working to integrate sustainability initiatives within their business, with digital technology at the center of their sustainability transformation strategy.

We hope our report helps you to shape your own strategy development and successful sustainability transformation.

\*Please see the terminology on the next page.

## Terminology and further reading



### Sustainability transformation

Sustainability transformation means transforming business to bring about positive change in our environment, society and economies. Examples include the reduction of energy usage and CO<sub>2</sub> emissions through continuous monitoring and the reduction of waste by implementing end-to-end traceability.

### Digital transformation

Digital transformation means transformational change of business processes or models using digital technologies. Digital technology includes technologies such as cloud, mobile, Internet of Things (IoT), advanced analytics, artificial intelligence (AI) and security.

### Fujitsu Technology and Service Vision (FT&SV)

Fujitsu Technology and Service Vision is an evolving story, exploring the future we would like to create with our customers and partners, how technology can help us achieve this vision and the specific actions needed to make it happen. Please download FT&SV from the website below to explore Fujitsu's perspective on the major issues addressed in this survey.



URL: <https://www2.fujitsu.com/global/vision/>

# 1

## The current status of sustainability transformation





# External factors are now on the agenda

Geopolitical tensions, including the Russian invasion of Ukraine, climate change and turmoil in financial markets continue to create complex interlinked social challenges and uncertainty. According to our survey, 53% of business leaders believe these external factors are now having a significant impact on their business. So, what kind of external factors do business leaders think are impacting their business?

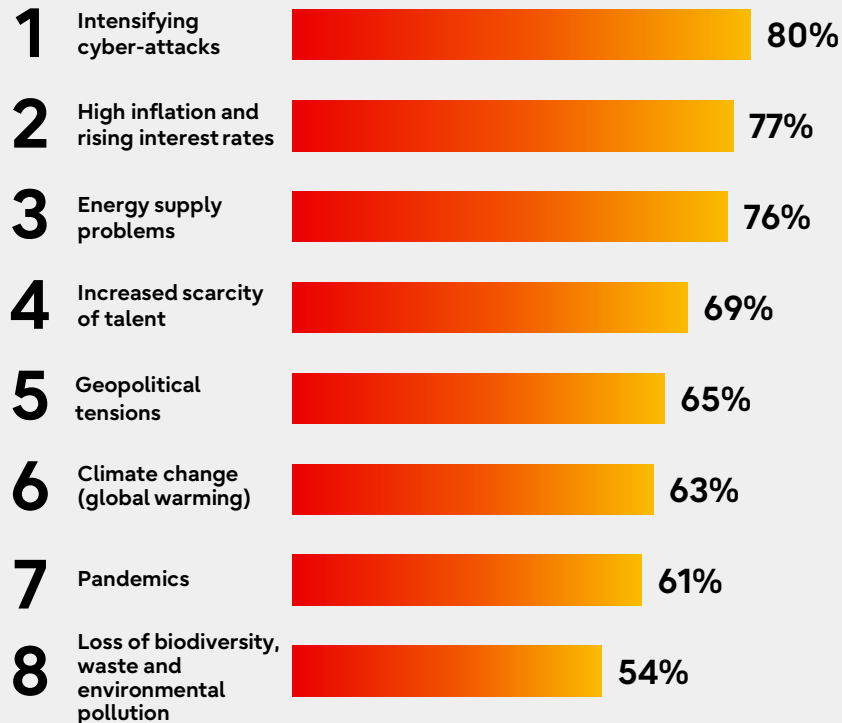
The intensification of cyber-attacks is cited by the greatest number of respondents, followed by high inflation and rising interest rates, energy supply problems, skills shortages, geopolitical tensions and climate change. This growing uncertainty is forcing business leaders to revise their priorities, leading them to pay more attention to the challenges being created by external factors.

External factors are having  
a significant impact on business

53%

## External factors affecting business

Number of samples: 1,800



# The increasing importance of sustainability

The external factors business leaders selected as critical are all linked to environmental, social and economic sustainability. In light of these challenges, how are business leaders prioritizing sustainability initiatives on their management agenda?

In our survey, 80% of business leaders state that sustainability is now a top 5 management priority. Digitalization, customer satisfaction and sustainability have shown the most significant increase in management priority over the past year.

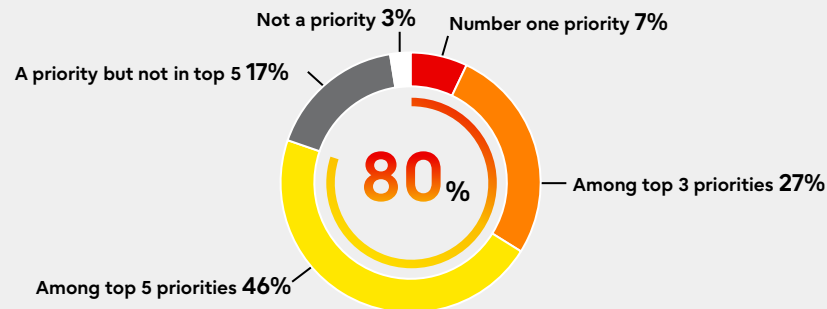
Sustainability is no longer seen as a social contribution made as part of conventional CSR, but as a strategically important management priority.

“ All our efforts towards sustainability are not only due to government regulations but also because sustainability is an essential part of our core values and business resilience.

Head of Sustainability, Manufacturing, Japan

## Priority of sustainability

Number of samples: 1,800



## Priority of business agenda items changed over the past 12 months

Number of samples: 1,800



Percentage of responses with increased or greatly increased in priority





# Meeting consumer expectations

Why is sustainability rapidly becoming an important management priority? Why are business leaders changing their perception of sustainability initiatives?

In our survey, 50% of respondents cited meeting expectations of consumers and customers as the main reason for prioritizing sustainability. This was followed by the need to meet government regulations and guidelines and satisfying investor expectations for ESG investment.

As consumers and customers become increasingly aware of corporate sustainability credentials, organizations are stepping up their sustainability initiatives to meet these rising expectations.

“ We are focused or inclined more towards sustainability as we want to ensure a long-term relationship with society, employees, and our customers to link sustainability with the purpose of our organization. For example, we are working on connecting our organization's intent with climate, ethics and inclusion, as the organization has a 360 approach towards operational sustainability.

Chief Operating Officer, Retail / wholesale, Germany

## Reasons for prioritizing sustainability

Number of samples: 1,229  
\*1 \*2) Number of samples: 1,101  
(excluding public sector)



Companies that have increased their sustainability priority over the past year  
Select up to 3





# Sustainability brings business opportunities

In this uncertain business environment, organizations are finding business opportunities in addressing external issues, specifically around improving sustainability. According to the survey, 49% of business leaders said that they are already aiming to contribute to sustainable energy consumption, followed by waste reduction and recycling, disaster prevention and safety, and response to climate change.

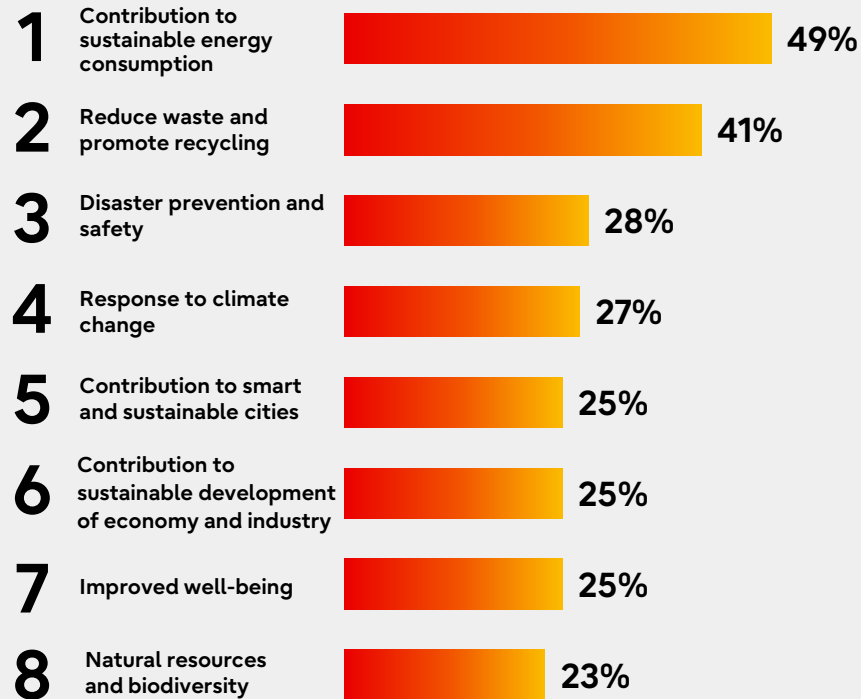
Indeed, many organizations are now aligning their purpose and activities with sustainability initiatives for society and governments, increasingly integrating sustainability at the heart of their business.

“ Sustainability and business performance have a positive relationship in electric vehicles. The higher the sustainability initiatives and performance, the better the sales, revenue and profits. So, we are one of the industry leaders in sustainability and digital transformation progress.

Director of Strategy and Innovation, Manufacturing, China

## Business opportunities in sustainability

Number of samples: 1,769  
(excluding public sector)





# Many organizations still have a long way to go

While many organizations see the business opportunities in sustainability, the maturity of sustainability transformation initiatives varies significantly between organizations.

Our survey finds that 43% of all organizations remain largely inactive, with around 20% just starting to implement sustainability initiatives in their business.

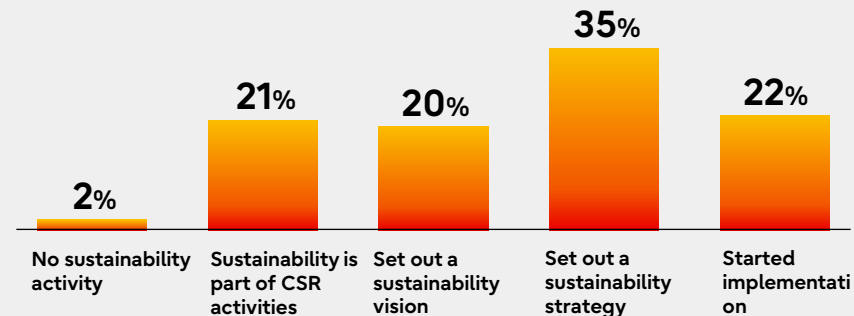
Overall, less than 30% of organizations have delivered tangible outcomes from their sustainability transformation initiatives. It's clear that many organizations still have a long way to go.

“ Everyone understands that businesses need to be sustainable and certainly have the willingness and intent to take the necessary measures, but it's just that it's not deliverable at a practical level yet.

Head of Sustainability, Transport, Australia

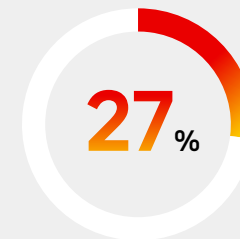
## Progress of sustainability initiatives

Number of samples: 1,800



## Delivering tangible outcomes from sustainability transformation

Number of samples: 1,769



Percentage of responses of delivering tangible outcomes



# The challenge is the complexity and enormity

Sustainability transformation requires fundamental changes, from business processes through to corporate culture and business strategy. What specific challenges do companies face in driving sustainability transformation?

In the survey, almost half of business leaders cited the complexity and enormity required for sustainability transformation. Other challenges included the lack of executive alignment around the sustainability vision and the lack of reliable data, compounded by internal resistance and suspicion.

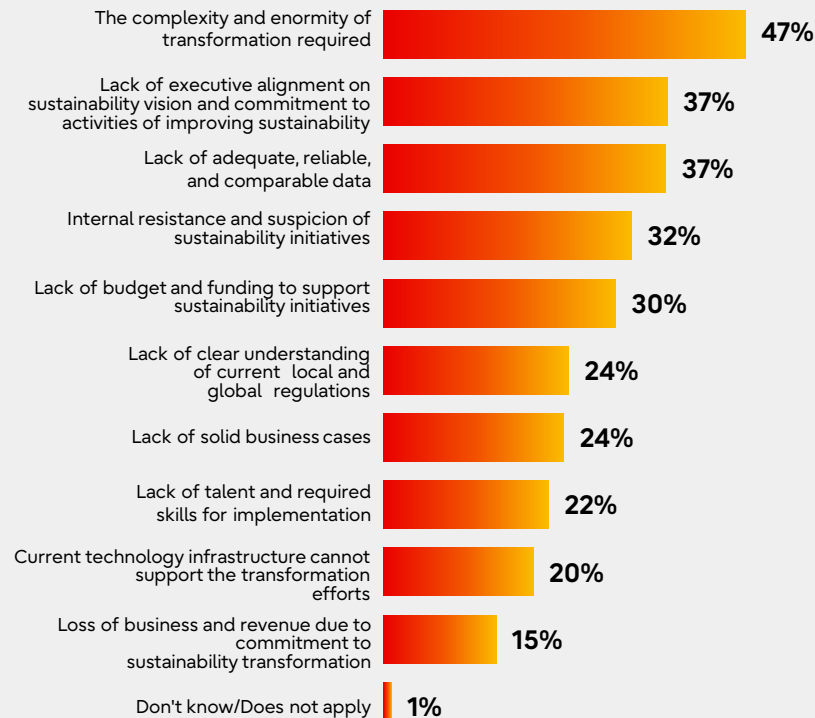
On the other hand, 30% of leaders raised ROI and securing budget as the fifth most important challenge. As the awareness around sustainability grows, the status of sustainability transformation is shifting from a cost challenge to a significant organizational priority.

“As climate and sustainability transitions are so complex, companies will require a transformation engine to have the intended impact and sustain results in the organization. And for this, the change engine needs empowered, engaged and confident leaders in their ability to execute.

Chief Sustainability Officer, Retail / wholesale, Singapore

## Challenges of sustainability transformation

Number of samples: 1,769





# Strengthening organizational capabilities

To overcome the complexity and enormity of sustainability transformation, organizations need to strengthen their organizational capabilities. Our survey revealed that many organizations are strengthening their capabilities across leadership, people, data and digital technology, and ecosystems through sustainability transformation.

Regarding leadership for example, 63% of business leaders have set out goals with both non-financial and financial KPIs and 57% are now implementing sustainability transformation strategies under the clear leadership of their CEOs. In terms of their people, 59% of business leaders are actively promoting diversity and inclusion amongst their employees. Regarding data and digital technology, 60% use data to create new solutions and to continuously improve value for sustainability. Finally, 48% have established an open ecosystem for sustainability innovation by sharing future goals and clear KPIs.

Many organizations are strengthening their operational capabilities to move from planning to implementation and delivering outcomes.

“ We’re embedding sustainability in our executive leadership goals. So not having them just in our Sustainability team but having all necessary parts of the business supporting the delivery of those goals. It will be teams across the business that will help us get to net-zero, not just the Sustainability team.

Head of Sustainability-EMEA, IT services, UK

## Maturity for sustainability transformation

Number of samples: 1,800

Leader ship	We clearly set out sustainability goals with both non-financial and financial KPIs	63%
	We execute an organization-wide sustainability transformation strategy under the clear leadership of our CEO	57%
People	We are dedicated to actively promoting the diversity and inclusion of our employees	59%
	We have employees who have the right skills for sustainability transformation	52%
	We are dedicated to nurturing a culture of trust and empathy	50%
	We empower employees to act with agility to respond to social challenges and deliver innovation	47%
	We have a systematic channel to cultivate and realize sustainability ideas from employees across our organization	46%
Data and digital technology	We use data to create new solutions and continuously improve value for sustainability	60%
	We manage our organizational data on sustainability in an integrated manner and make sustainability decisions based on the data	54%
	We have transformed our business process to improve sustainability by integrating data and digital technologies	53%
	We consistently use methodologies such as agile development to improve sustainability	46%
Eco system	We have established an open ecosystem for sustainability innovation, sharing future goals and clear KPIs	48%
	We actively collaborate with public agencies to develop public-private/private-public partnerships to improve sustainability	47%
	We share trusted data between ecosystem partners to co-create value for sustainability	40%



# 2

## Success factors for sustainability transformation





## 8% are sustainability transformation leaders

Many organizations are in the early stages of their sustainability transformation, while only a few are true sustainability leaders who are delivering actual sustainability outcomes. Our research analyzed the status of sustainability transformation from three perspectives: the progress of sustainability initiatives, the maturity of organizational capabilities and the extent to which they are delivering practical outcomes.

Fujitsu's survey finds that 43% of all organizations remain inactive, limiting their activities to specific CSR initiatives and high-level vision statements.

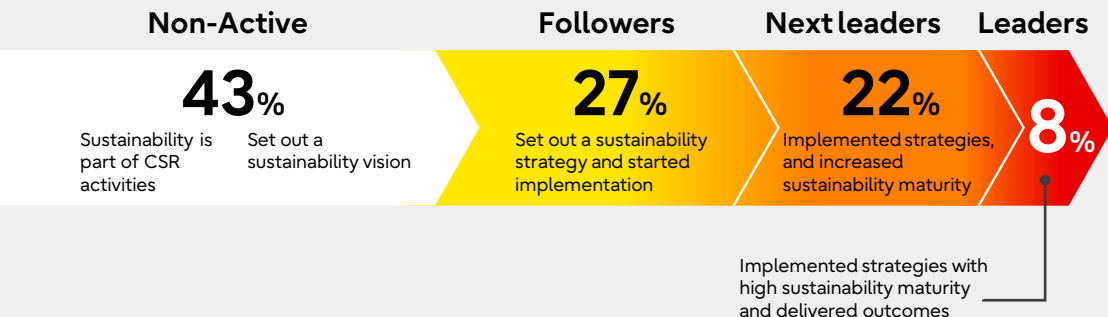
8% of organizations are true sustainability leaders, demonstrating mature practices with implemented strategies and delivered outcomes.

The business performance of these leading companies over the past year, from revenue and operating profit through to customer and employee satisfaction, was significantly better than that of other companies. So, what are the characteristics of sustainability leaders and what are they doing to drive sustainability transformation?

For a profile of sustainability leaders, see Survey Demographics on the page 32.

### Status of sustainability transformation

Number of samples: 1,800



### Change of performance indicators over the past 12 months

Number of samples: 1,800  
Leaders (152)  
Non-leaders (1,648)



# Delivering value to multiple stakeholders

The survey revealed that a key characteristic of sustainability leaders is the ability to deliver value to multiple stakeholders through their sustainability transformation initiatives.

Traditionally, providing value to shareholders has been the top priority, but awareness amongst business leaders has now changed. Sustainability leaders now provide a greater spread of value, across the environment, society, customers, employees and investors, compared to other companies. Especially, sustainability leaders create high value for the environment.

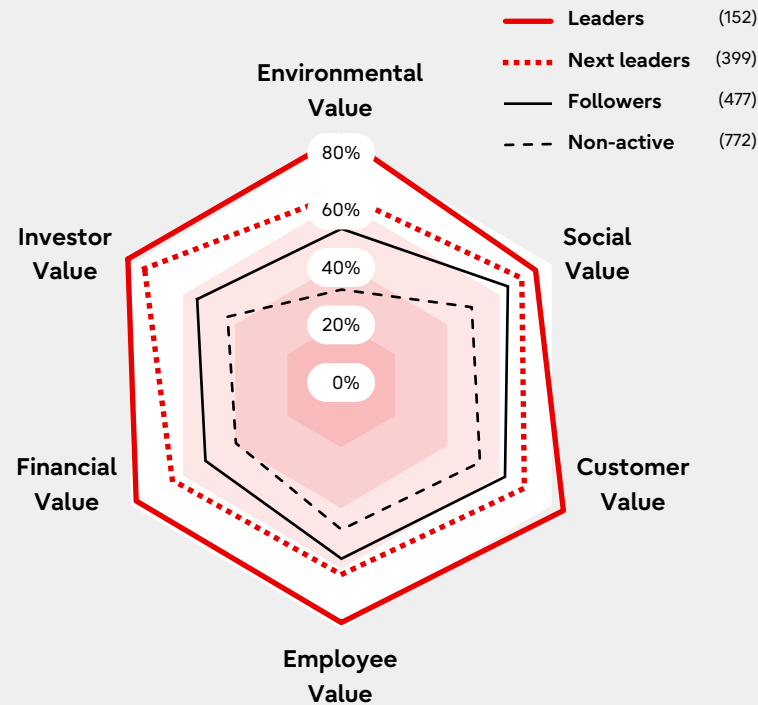
This reflects that through the integration with business, sustainability initiatives, which have previously been considered as CSR or a cost, can actually generate balanced returns for multiple stakeholders, including investors.

“ Many organizations in the industry have decided to transform from shareholder-centered capitalism to multi-stakeholder capitalism to implement sustainability in their organizations and deliver value to all stakeholders, including society.

SVP – Global Sustainability & ESG Integration, Healthcare, USA

## Creating value for all

Number of samples: 1,800



Respondents who answered delivering value to each stakeholder to a moderate or significant extent

# The four success factors of sustainability transformation

How do sustainability leaders deliver value to multiple stakeholders and drive successful sustainability transformation? We analyzed the initiatives common to sustainability leaders and identified four key success factors.

In each case, let's look at what sustainability leaders are doing to make a big difference.

## 1 Leadership based on sustainability-oriented purpose

- Consistently communicating a sustainability story to stakeholders.
- Rebuilding portfolio based on purpose oriented around sustainability.



## 2 Fostering empathy with customers and employees

- Developing employees with the right skills for sustainability transformation and promoting diversity and inclusion.
- Nurturing a culture of trust and empathy.



## 3 Integrating sustainability into business

- Creating new business opportunities through sustainability transformation and integrating them into business strategy.
- Understanding the relationship between sustainability and business KPIs, managing both across the organization.



## 4 The twin approach of digital and sustainability

- Using data and digital technologies to transform the process of creating products and services.
- Building a digital ecosystem to co-create sustainability innovation.







# 1 Leadership based on a sustainability-oriented purpose

The unique organizational culture of sustainability leaders centers around purpose formulation and communication. Around 90% of sustainability leaders have formulated a sustainability-oriented purpose, created a story based on the purpose and communicated consistent messages to their various stakeholders. On the other hand, only about a half of non-leaders said that they have implemented initiatives based on a sustainability-oriented purpose.

Significantly, almost 90% of sustainability leaders improve, exit, sell, or develop new businesses based on their purpose. This close link between sustainability and business strategy is critical to the successful implementation of sustainability transformation.

“ We have strict considerations regarding traceability and transparency for all our suppliers. We could integrate our organization's purpose with sustainability by ensuring product sourcing. In these considerations, we verify certificates regarding international standards.

Chief Operating Officer, Retail / wholesale, Germany

## Status of purpose-driven management

Number of samples: 1,800  
Leaders (152)  
Non-leaders (1,648)



Percentage of responses with agree or strongly agree



## 2 Fostering empathy with customers and employees

Sustainability initiatives are carried out over a long period of time, and it is difficult to sustain them by focusing on short-term outputs. It is important to let all stakeholders support the sustainability initiatives and develop empathy.

Sustainability leaders understand the importance of the empathy and are already acting on it. In Fujitsu's survey, 98% of sustainability leaders said that their sustainability activities strongly resonate with their customers, with 82% agreeing that this resonance has increased customers' preference for their products and brands. Also, 90% said their sustainability initiatives resonate with their employees, with 88% reporting improved engagement and productivity.

In addition, 86% are promoting employee diversity and inclusion, while 85% are developing people with the skills required for sustainability transformation. Through their sustainability initiatives, sustainability leaders have succeeded in creating empathy with their customers and employees, resulting in improved business performance.

“Our commitment to sustainability has helped attract and retain talents who share the company's values and help build a strong brand identity that consumers trust. So, this approach of focusing on environmental and social value has been a successful strategy in terms of its bottom line and reputation among stakeholders.

Director of Strategy and Innovation, Manufacturing, China

### Building customer empathy

Number of samples: 1,800  
Leaders (152)  
Non-leaders (1,648)

The sustainability transformation initiatives have resonated with customers

98%  
58%

if agree/strongly agree

82%  
56%

This has increased customers' preference for products and brands

### Building employee empathy

The sustainability transformation initiatives have resonated with employees

90%  
45%

if agree/strongly agree

88%  
68%

This has increased employees' engagement...

Leaders Non-leaders

Percentage of responses with agree or strongly agree



# 3

## Integrating sustainability into business

Many organizations are now driving sustainability transformation, seeing sustainability as a business opportunity. What are the unique characteristics of sustainability leaders?

Our analysis shows that 71% of sustainability leaders are creating new business opportunities through sustainability transformation and integrating them into business strategy. Only 45% of non-leaders are doing this.

In addition, 80% of sustainability leaders understand the relationship between non-financial KPIs related to sustainability and financial KPIs related to business performance and successfully manage both across the organization.

78% are actively linking evaluation, compensation, and governance with sustainability performance. Sustainability leaders are much more active in integrating sustainability into their business than non-leaders.

“ If you buy a light switch from us, you might pay a little bit more because it's digital, it's connectable, it's smart, it's green. I think that has paid dividends. We also sell consulting, we sell smart buildings, we sell EV chargers to their new EV fleet. It's a huge commercial success for us.

VP, Government Affairs, M&A, Innovation and Sustainability,  
Manufacturing, France

## Sustainability as a business

Number of samples: 1,800  
Leaders (152)  
Non-leaders (1,648)

Creating new business opportunities through sustainability transformation and integrating them into business strategy

71%

45%

Understanding the relationship between sustainability and business KPIs, managing both across the organization

80%

52%

Linking evaluation, compensation, and governance with sustainability performance

78%

49%

Leaders Non-leaders

Percentage of responses with agree or strongly agree

# 4

## The twin approach of digital and sustainability

The fourth characteristic that sustainability leaders share is their high awareness of the importance of digital. Over the past year, 91% of leaders have increased their focus on digitalization. In addition, 74% of leaders believe digital transformation is a key to sustainability transformation.

Specifically, 76% are creating innovative products and services by using data and digital technologies, while 74% are transforming their processes to create their products and services. In addition, 68% have built digital ecosystems with partners to co-create sustainability innovations.

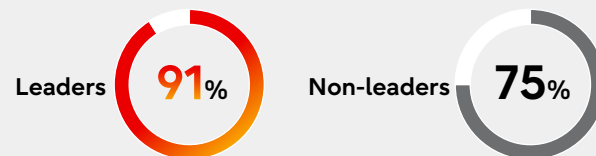
It is clear that digital transformation skills and methods are critical to the successful implementation of sustainability transformation, and that a twin approach linking both aspects together is critical. In the next section, we explore this approach in more detail.

“ Both things go hand in hand, and one depends on the other. To take actions on sustainability or even make plans based on present and past data, we need technological tools, databases, to create meaningful and concise data which is easy to read and act upon. So, for that, we need digital transformation.

Head of Sustainability, Manufacturing, Japan

## Priority of digitalization changed over the past 12 months

Number of samples: 1,800  
Leaders (152)  
Non-leaders (1,648)



## Digitalization contributing to sustainability transformation

Number of samples: 1,800  
Leaders (152)  
Non-leaders (1,648)



Percentage of respondents who agree or strongly agree with each description

Leaders Non-leaders



# 3

**Sustainability  
transformation  
accelerated  
by technology**





# Sustainability leaders actively drive digital transformation

Digital technology plays a major role in integrating sustainability into business. In digital transformation, organizations have connected people, things and processes, using the generated data to transform their businesses. More importantly, organizations are attempting completely new ways to deliver innovation with agility, by developing skills and empowering individual employees.

Our survey revealed that sustainability leaders are actively driving digital transformation and have high organizational capabilities across all areas of digital maturity as summarized in the table on the right.

84% of sustainability leaders have employees who have the right skills for digital transformation and 79% utilized methods like agile development. 78% are transforming business processes using data and digital technologies.

“Once you become digital and efficient, what does that mean? It means you became more sustainable. They are definitely connected. And I think the digital transformation comes first in my mind.

VP, Government Affairs, M&A,  
Innovation and Sustainability, Manufacturing, France

## Maturity of digital transformation

		Leaders	Non-leaders
Strategy People	We execute an organization-wide digital transformation strategy under the clear leadership of our CEO	82%	59%
	We have employees who have the right skills for digital transformation	84%	61%
Agility	We empower employees to act with agility to deliver digital innovation and respond to unexpected changes	82%	62%
	We consistently use methodologies such as agile development	79%	51%
Process	We have updated our IT infrastructure to enable digital transformation	86%	60%
	We have transformed our business process using data and digital technologies	78%	60%
Data utilization	Our data provides reliable insights to guide management decisions	86%	67%
	We securely protect the private data of customers, employees, and partners	80%	66%
	We use customer data to create new products or services and continuously improve value for customers	80%	65%
	We execute an organization-wide cyber-security strategy	75%	64%
Ecosystem	We have established an open ecosystem for digital innovation	67%	52%

Percentage of respondents who agree or strongly agree with each description of the maturity of their digital transformation

Number of samples: 1,800  
Leaders (152), Non-leaders (1,648)



# Sustainability leaders are also digital transformation leaders

Our survey confirms that sustainability leaders are delivering outcomes through digital transformation. 93% of sustainability leaders reported their digital transformation has resulted in tangible outcomes, compared to just 48% of non-leaders.

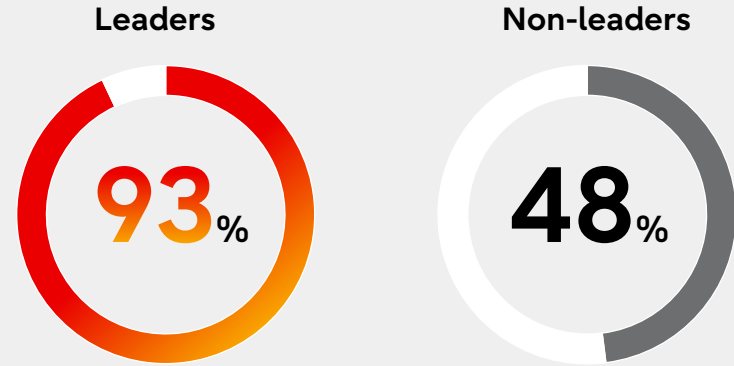
For successful sustainability transformation, it is essential to engage employees and partners through a shared purpose, creating environmental and social value. In order to realize this purpose, organizations can use the new technology platforms and organizational capabilities that they have built through their digital journeys. This will help them to achieve better sustainability transformation outcomes, providing significant value to environment and society.

“ Regarding sustainability success stories, we adopted a digital oilfield system that uses data analytics and AI to optimize oil and gas production and cut energy usage. Technology is essential because it improves operational efficiency, reduces environmental impacts, and increases stakeholder engagement.

Environmental & Social Superintendent, Public Sector, China

## Successfully delivered outcomes through digital transformation

Number of samples: 1,800  
Leaders (152)  
Non-leaders (1,648)



# The five key dimensions of digital-led sustainability

Fujitsu believes that the five dimensions listed below are key for driving digital-led sustainability transformation\*. Our survey confirmed that around 80% of sustainability leaders agree these dimensions are crucial to sustainability transformation.

In this section, we explore how digital transformation initiatives contribute to sustainability in each dimension.

\*) For details, please read the FT&SV introduced on page 3 in this report.

## Agreed that the digital transformation described in each dimension is important

<b>1</b>	<b>Automation and augmentation</b> Using AI to help people solve problems and improve productivity through automation.	Leaders <b>82%</b>	Non-leaders <b>54%</b>
<b>2</b>	<b>Experience transformation</b> Converging physical and digital to provide inclusive experiences.	Leaders <b>84%</b>	Non-leaders <b>61%</b>
<b>3</b>	<b>Innovation for environment and society</b> Using High Performance Computing (HPC) and AI to help create innovations that solve complex systemic challenges.	Leaders <b>78%</b>	Non-leaders <b>45%</b>
<b>4</b>	<b>Resilience of business and society</b> Exploiting data to enable real-time visualization and agile responses in the face of uncertainty.	Leaders <b>77%</b>	Non-leaders <b>51%</b>
<b>5</b>	<b>Trust across society</b> Using trust technologies to increase data reliability and visualize environmental and social value.	Leaders <b>80%</b>	Non-leaders <b>52%</b>

Percentage of respondents who agree or strongly agree with each description

Number of samples: 1,800 Leaders (152) Non-leaders (1,648)

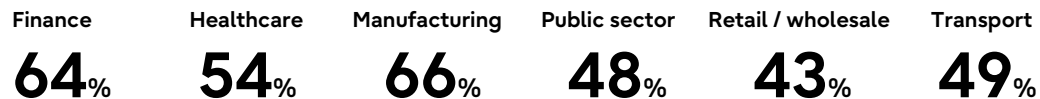


# 1 Automation and augmentation

AI technologies have automated various routine tasks to improve efficiency. Now, with very large-scale generative AI models such as GPT-4, the democratization of AI is progressing rapidly. In the future, collaboration between people and AI has the potential to improve people's productivity significantly, even in creative work. While we need to carefully consider the impact on employment and other factors, this collaboration can potentially solve challenges such as labor shortages in societies with declining populations.

Manufacturing and financial services sectors are leading in automation. Around two thirds of survey respondents in these sectors already implement AI to automate tasks and improve employee productivity and experience.

## Using AI to automate work, improving employee productivity and experience (by industry)



Number of samples: 1,800 Percentage of responses using automation

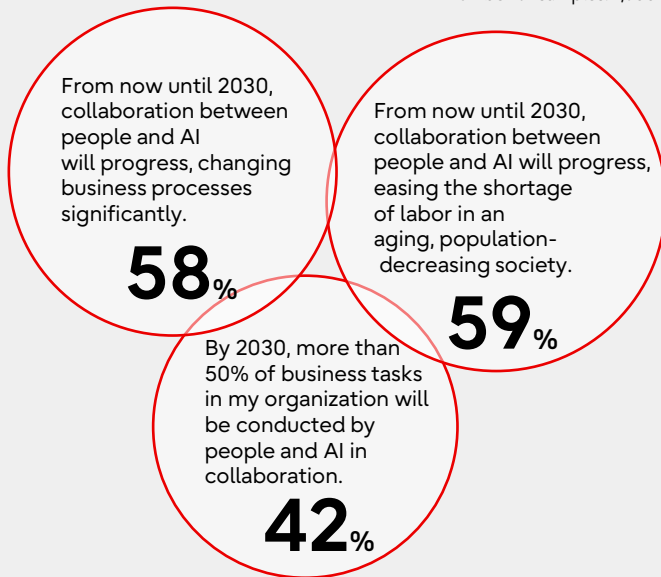
“ There's a huge push from the market for vertical farming, and it requires a lot of technology digitalization and AI. You need to work towards a complete process management system that optimizes water flows, air conditioning, ventilation, nutrition management and lighting.

VP Sustainability & EHS, Manufacturing, Germany

## Outlook 2025 - 2030

42% expect more than half of business tasks in their organization will be carried out through collaboration between people and AI by 2030. In addition, about 60% of respondents see that collaboration between people and AI will change business processes significantly and ease the shortage of labor.

Number of samples: 1,800



Percentage of responses with agree or strongly agree

## 2 | Experience transformation

By utilizing high-speed networks and VR/AR technology, new experiences will be realized in a physical-digital converged world. This convergence helps to create more inclusive experiences.

Financial services are a leader in this area. 53% of finance sector companies provide personalized and inclusive experiences merging online and offline, while 46% have adopted a hybrid working that combines remote and office work. On the other hand, only 20-30% of respondents in transportation, manufacturing, and healthcare sectors, where remote work is limited, have adopted hybrid working.

### Experience transformation (by industry)

	Finance	Health care	Manufacturing	Public sector	Retail / wholesale	Transport
Merging online and offline to provide personalized and inclusive experience	53%	43%	35%	46%	54%	36%
Hybrid work enabling employee to work remotely and at offices	46%	27%	24%	36%	38%	19%

Number of samples: 1,800 Percentage of responses implementing the above transformation

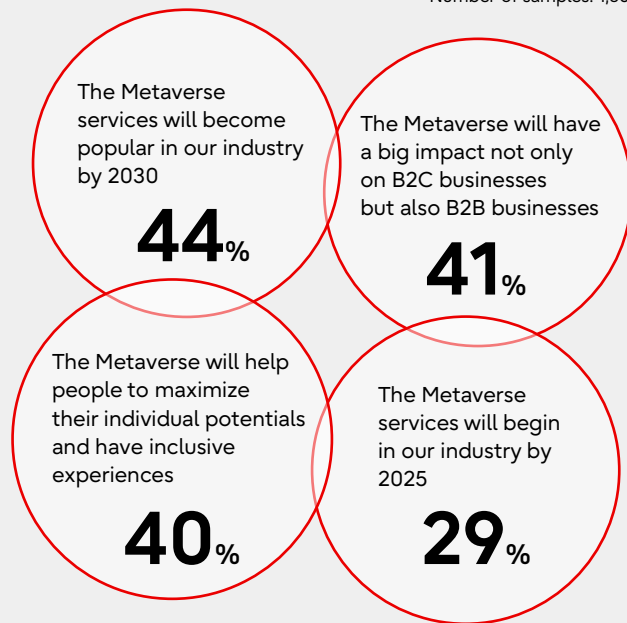
“ The metaverse could potentially support open access education. If you're a disabled person, it can be hard to get around in a physical world as the infrastructure may not have been designed for your needs. Whereas you can access a lot more education, content and culture through the Metaverse.

Head of Sustainability-EMEA, IT services, UK

### Outlook 2025 - 2030

40% of respondents predict the metaverse will help people to maximize their individual potential and inclusive experiences, with 44% expecting metaverse services to become popular by 2030.

Number of samples: 1,800



Percentage of responses with agree or strongly agree

# 3 | Innovation for environment and society

The use of High-Performance Computing (HPC) and AI to solve complex business and social challenges is accelerating. The purpose of using this technology varies between industries. 52% of respondents from financial services are using HPC and AI to optimize financial portfolios. In healthcare, 37% are using the technologies to enable drug discovery or genomic medicine. HPC and AI has also been used for logistics optimization in transportation and retail / wholesale sectors, and the development of environmentally friendly materials and products (such as green and photovoltaic materials) in manufacturing.

## Innovation by using HPC and AI (by industry)

Optimization of financial portfolios	Drug discovery and genomic medicine	Development of environment friendly materials and products	Logistics optimization and environmental load reduction
Finance <b>52%</b>	Healthcare <b>37%</b>	Manufacturing <b>17%</b>	Transport <b>30%</b> Retail / <b>21%</b> wholesale

Number of samples: 1,278 Percentage of responses implementing the above transformation

“ We use AI and machine learning algorithms to improve the efficiency of our supply chain operations. Our intelligent logistics platform uses real-time data on inventory levels, production schedules, and shipping routes to optimize logistics operations and reduce waste. Using AI to optimize logistics improved the supply chain's efficiency and reliability while reducing transportation costs and environmental impact.

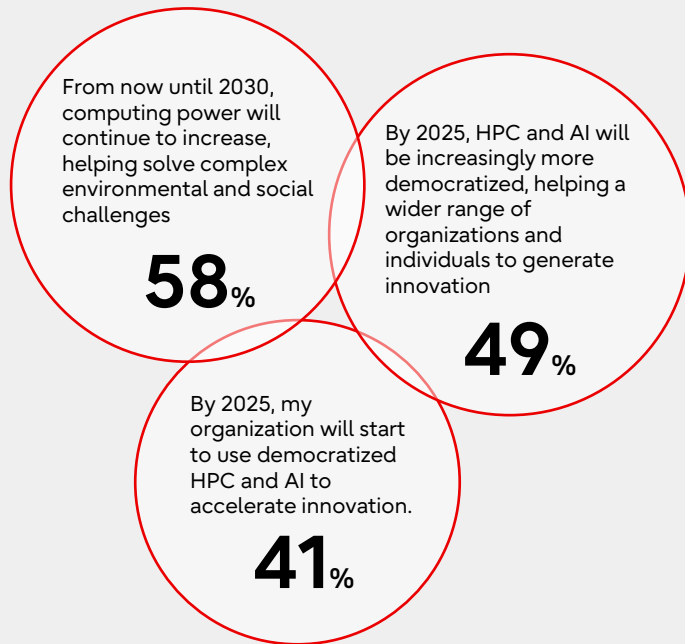
Director of Strategy and Innovation, Manufacturing, China



## Outlook 2025 - 2030

58% of respondents expect computing power will continue to increase, helping solve complex environmental and social challenges until 2030.

Number of samples: 1,800



Percentage of responses with agree or strongly agree

# 4 Resilience of business and society

Advances in digital twin technology, which visualizes and mirrors the physical world in a digital space in real time, are driving innovation in business operations, optimization of supply chains, and safe and secure city planning.

Over half of respondents in transportation are monitoring and managing CO<sub>2</sub> emissions, while 40% are working on real-time visualization of supply chains and logistics to quickly respond to changes. More than half of respondents in retail / wholesale are using data to match demand and supply, along with more than 40% in transportation and manufacturing.

## Initiatives to improve resilience (by industry)

	Finance	Health care	Manufacturing	Public sector	Retail / wholesale	Transport
Monitoring and management of CO <sub>2</sub> emission within our organization / city	17%	38%	46%	43%	33%	54%
Using data to forecast demand and supply, enabling matching and loss reductions	-	-	43%	-	52%	41%
Visualizing real-time operations and value chains, enabling agile response to uncertain and volatile changes	21%	14%	18%	20%	24%	40%

Number of samples: 1,800 Percentage of responses improving resilience

“ We have launched our digital supply chain platform by inculcating it within our business strategy. It provides real-time information and end-to-end visibility to identify potential interruptions and ease crucial decision-making. Through predictive forecasting, this capability improves our procurement efficiency and enables us to minimize disruptions and shipment delays.

Chief Sustainability Officer, Retail / wholesale, Singapore

## Outlook 2025 - 2030

36% of respondents forecast that simulation by digital twins will lead to enhanced agility and resilience by 2025. 49% of respondents predict that business and urban planning, and disaster countermeasures that utilize simulation technology and real-time data will advance by 2030.

Number of samples: 1,800

From now until 2030, the dynamics of businesses and cities will be increasingly visualized with real-time data, enabling more effective responses to uncertain events and disasters

49%

From now until 2030, simulation technologies will advance, enabling smarter planning of more sustainable businesses and cities

49%

By 2025, my organization will start to build the digital twin of business processes to increase agility and resilience through simulation

36%

Percentage of responses with agree or strongly agree

# 5 | Trust across society

The evolution of distributed trust technologies such as Web3 and blockchain will accelerate the shift from a world of zero trust, where nothing is trusted, to a world where everything is connected safely and securely, and where people, data, and things can move freely.

Initiatives such as distribution of carbon credits are underway. 46% of respondents in transportation and 44% of respondents in manufacturing are monitoring and managing CO<sub>2</sub> emissions throughout their value chain and 37% of respondents in the public sector are monitoring and managing CO<sub>2</sub> emissions data within cities. More than 40% of respondents in healthcare, retail / wholesale, manufacturing, and public sectors have improved the traceability of their products and materials. They have also promoted recycling and waste management throughout their supply chains or cities.

## Initiatives to create trust across society (by industry)

	Finance	Health care	Manufacturing	Public sector	Retail / wholesale	Transport
Monitoring and management of CO <sub>2</sub> emissions throughout value chain	18%	23%	44%	-	20%	46%
Monitoring and management of CO <sub>2</sub> emission within city	-	-	-	37%	-	-
Traceability of products and materials, recycling, and waste reduction throughout the value chain or cities	-	46%	43%	44%	46%	33%

Number of samples: 1,800 Percentage of responses creating trust

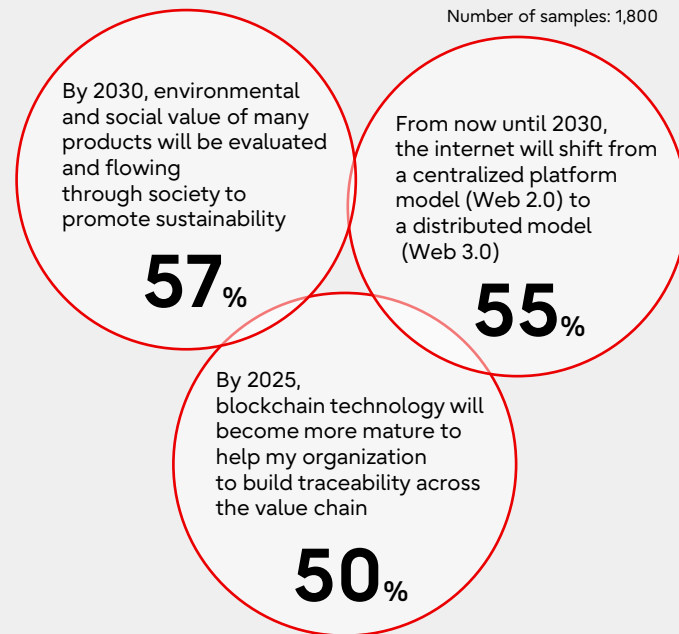
“Blockchain could track energy and carbon credits and provide greater transparency and accountability in sustainability reporting.

Environmental & Social Superintendent, Public sector, China

## Outlook 2025 - 2030

Half of all respondents expect blockchain will help their organization build traceability across their value chain by 2025. Looking further to 2030, 55% of respondents expect a shift to a more distributed model (Web3).

Number of samples: 1,800



Percentage of responses with agree or strongly agree





# Current and future investment in digital technologies

Finally, let's look at business leaders' views on the use of digital technology. According to our research, cyber-security is currently the most used digital technology, followed by AI and IoT. AI is expected to receive the most investment over the next five years followed by cyber-security and analytics. More than 60% of business leaders have been already using AI and cyber-security to drive digital transformation, and these are the top two technologies they will increase investment in over the next five years. This indicates the very high expectations for these two technologies.

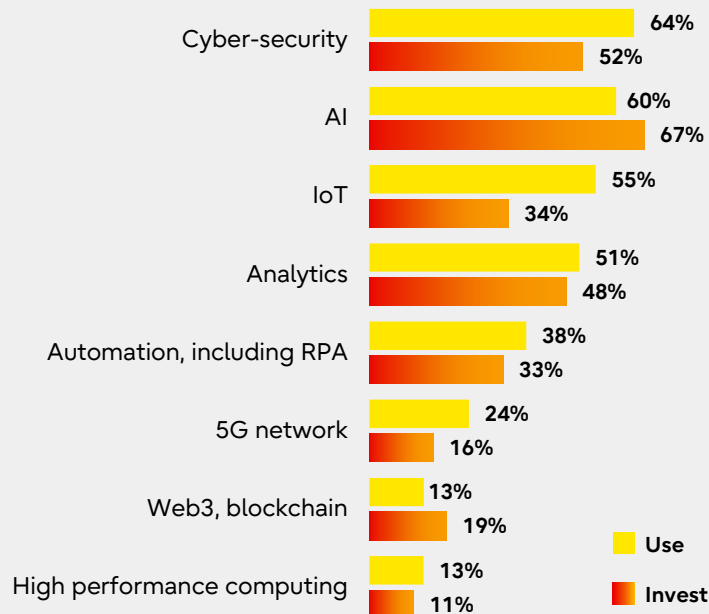
Investment in technologies such as Web3 and blockchain, as a means of improving sustainability, is expected to increase. Organizations need to assess their sustainability transformation strategies and consider possible technology investments from a medium to long term perspective.

“ In the future, technologies will become less expensive and more accurate regarding data; the industry will emphasize transparency of sustainability data and ESG efforts.

SVP - Global Sustainability & ESG Integration, Healthcare, USA

## Technologies which are used now to drive digital transformation and one which you will increase investment in 5 years

Number of samples: 1,800



Up to three technologies being used now and to increase investment over the next five years  
Percentage of responses with agree or strongly agree



# Recommendations

Through the survey, we have analyzed the current status of sustainability transformation, the common characteristics of sustainability leaders, and how digital technology can contribute to successful sustainability transformation. Our recommendations to business leaders to achieve a successful sustainability transformation are:

1

**Driving leadership based on a sustainability-oriented purpose**

Sustainability leaders have set a purpose oriented for sustainability, created a story based on purpose, and are consistently communicating its message to various stakeholders. It is essential for management to drive purpose-driven leadership, rebuild the business portfolio, and closely link sustainability with business strategies.

2

**Fostering empathy with customers and employees**

It is important to tackle sustainability continuously over a long period of time. Sustainability leaders understand the importance of creating empathy with all stakeholders. It is necessary to foster a culture of trust and empathy among customers and employees, by giving people the skills to implement sustainability transformation and by promoting diversity and inclusion.

3

**Integrating sustainability into business**

Sustainability leaders are creating new opportunities by integrating sustainability into business. It is important to regard sustainability as a business that generates financial and non-financial value, rather than CSR. It is necessary to establish a mechanism to manage the relation between sustainability and business performance based on data, and to design processes linked to sustainability performance.

4

**Implementing the twin approach of digital and sustainability**

Digital transformation contributes to successful sustainability transformation. It is important to transform the process of creating products and services using data and digital technology, and to build a foundation for co-creating innovation. Leaders are expected to develop strategies by implementing a twin approach of digital and sustainability, while assessing the investment areas of technology.



# Respondents profile

Number of samples: 1,800



## Country

Australia	Singapore
China	Spain
France	UK
Germany	USA
Japan	

Number of responses per country: 200



## Industry

Public Sector	29%
Manufacturing	15%
Financial services	14%
Healthcare	14%
Transportation	14%
Retail and wholesale	14%

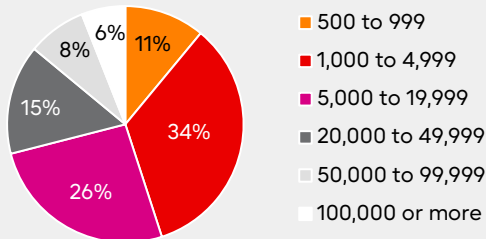


## Revenue

\$100M to <\$200M	3%
\$200M to <\$300M	5%
\$300M to <\$400M	7%
\$400M to <\$500M	6%
\$500M to <\$1B	15%
\$1B to <\$5B	24%
\$5B to <\$10B	15%
\$10B to <\$20B	14%
\$20B or more	11%



## Number of employees



## Function

Chief Executive Officer	8%
Chief Marketing Officer	10%
Chief Information Officer	10%
Chief Financial Officer	10%
Chief Digital Officer	10%
Chief Strategy Officer	10%
Chief Sustainability Officer	10%
Other CxO	2%
SVP, VP	15%
Director	15%

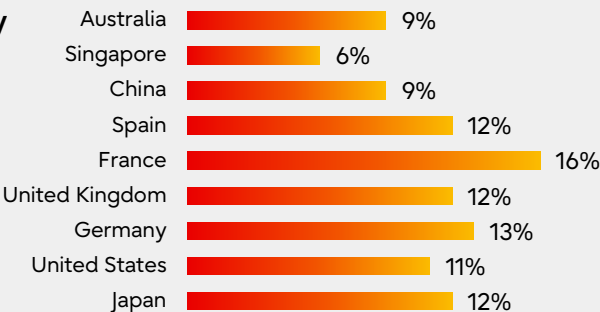


# Sustainability leader profile

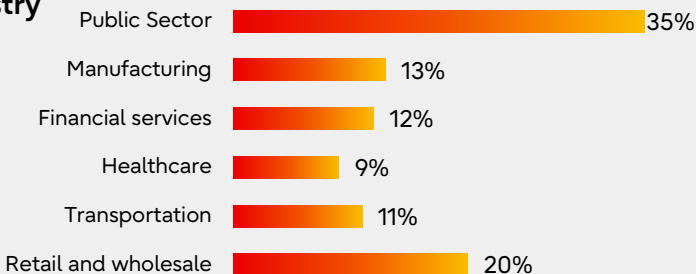
Number of samples: 152



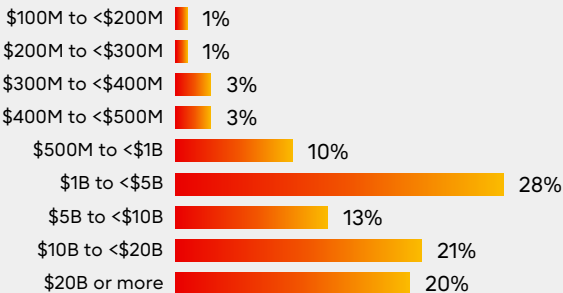
## Country



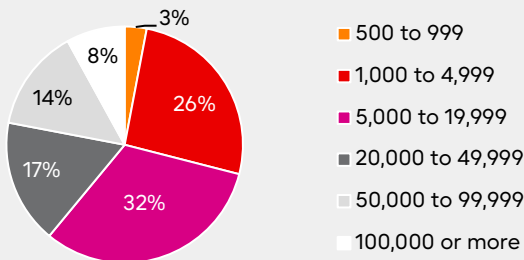
## Industry



## Revenue



## Number of employees



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