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Digital transformation

wolfenstein@xpert.digital
https://xpert.digital
+49 89 89 674 270 (Munich)

Contact Person

Konrad Wolfenstein

Digital transformation

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Table of Contents

Table of Contents

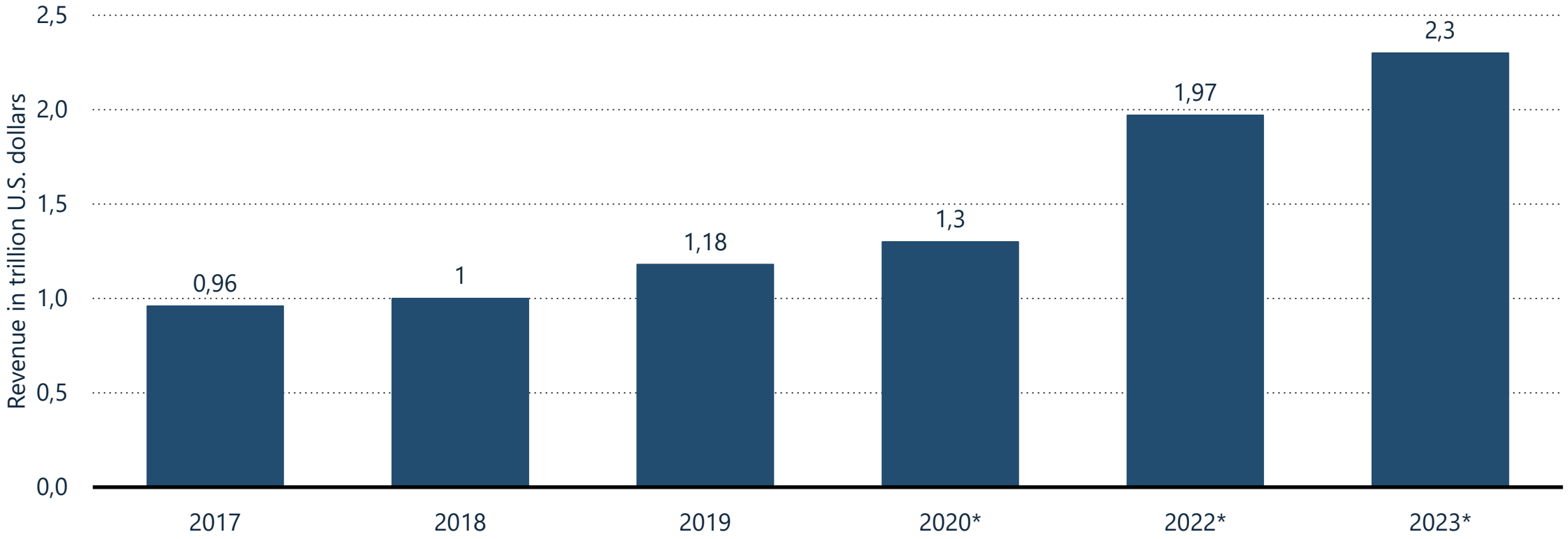
Table of Contents

Digital transformation

Overview

Digital transformation market revenue worldwide from 2017 to 2023 (in trillion U.S. dollars)

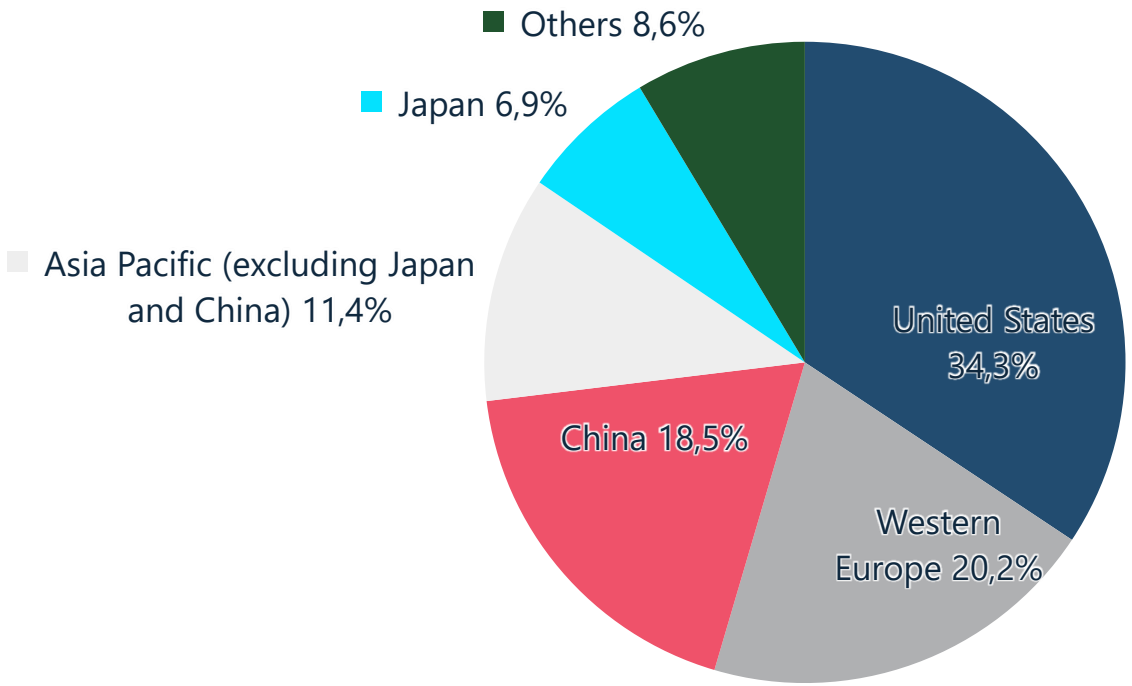
Digital transformation market size worldwide 2017-2023



Note: Worldwide; 2017 to 2019
Further information regarding this statistic can be found on page 60.
Source(s): IDC; Statista estimates

Digital transformation market share worldwide in 2019, by region

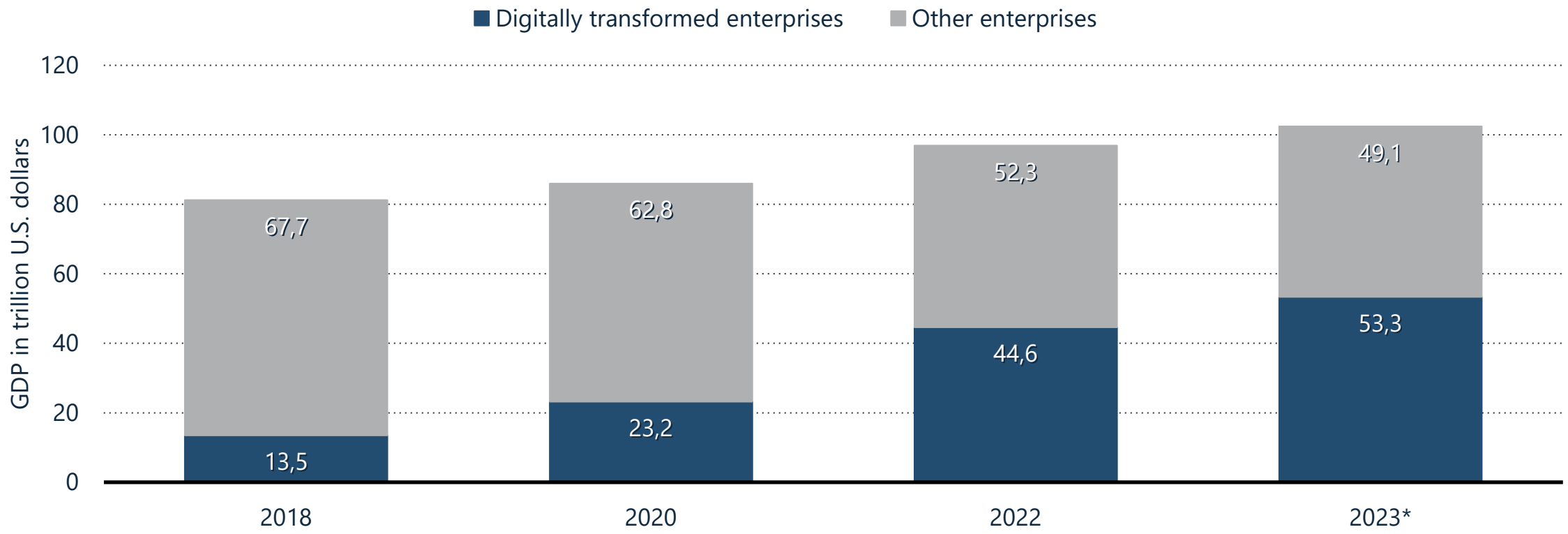
Share of digital transformation market worldwide 2019, by region



Note: Worldwide; 2019
Further information regarding this statistic can be found on page 61.
Source(s): IDC

Nominal GDP driven by digitally transformed and other enterprises worldwide from 2018 to 2023 (in trillion U.S. dollars)

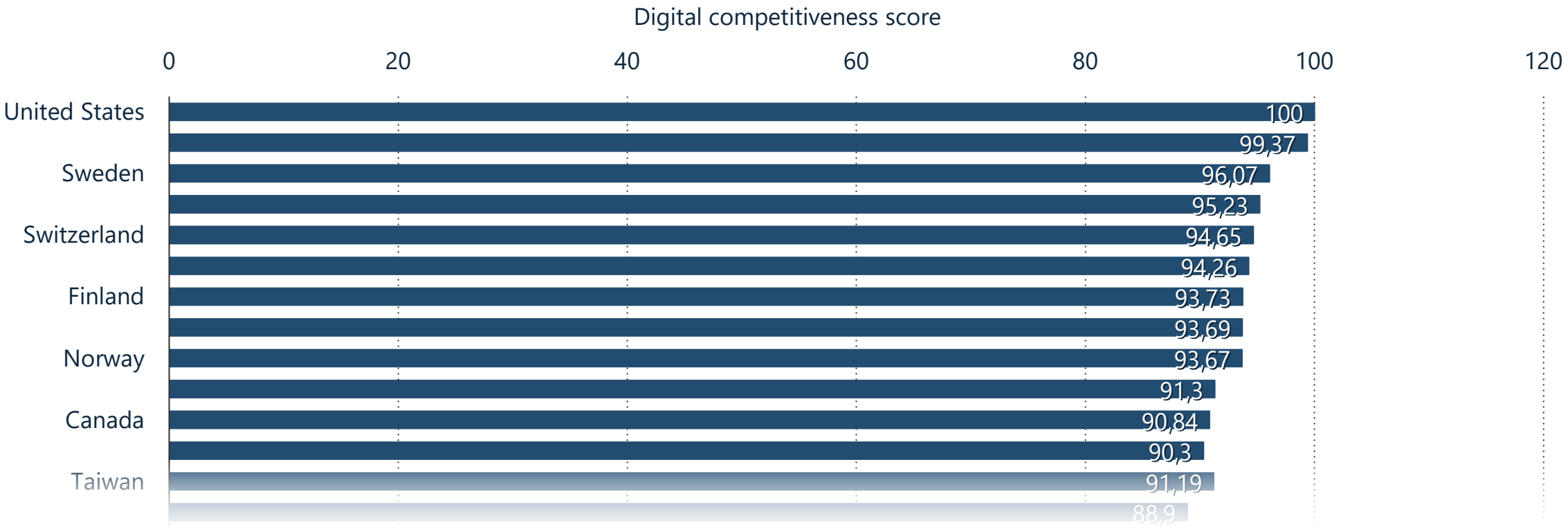
Nominal GDP driven by digitally transformed and other enterprises worldwide 2018-2023



Note: Worldwide; 2018 to 2023
Further information regarding this statistic can be found on page 62.
Source(s): IDC

Country-level digital competitiveness rankings worldwide as of 2019

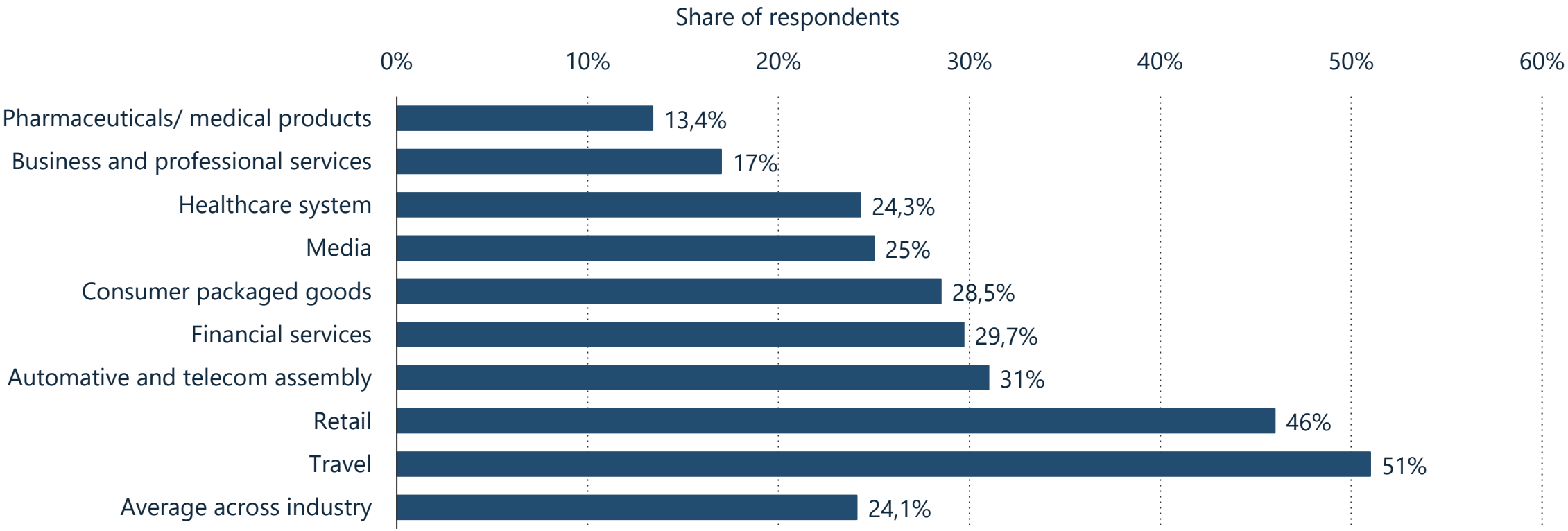
Digital competitiveness rankings by country worldwide 2019



Note: Worldwide; 2019
Further information regarding this statistic can be found on page 63.
Source(s): International Institute for Management Development

Global companies' level of digital maturity as of 2018, by vertical

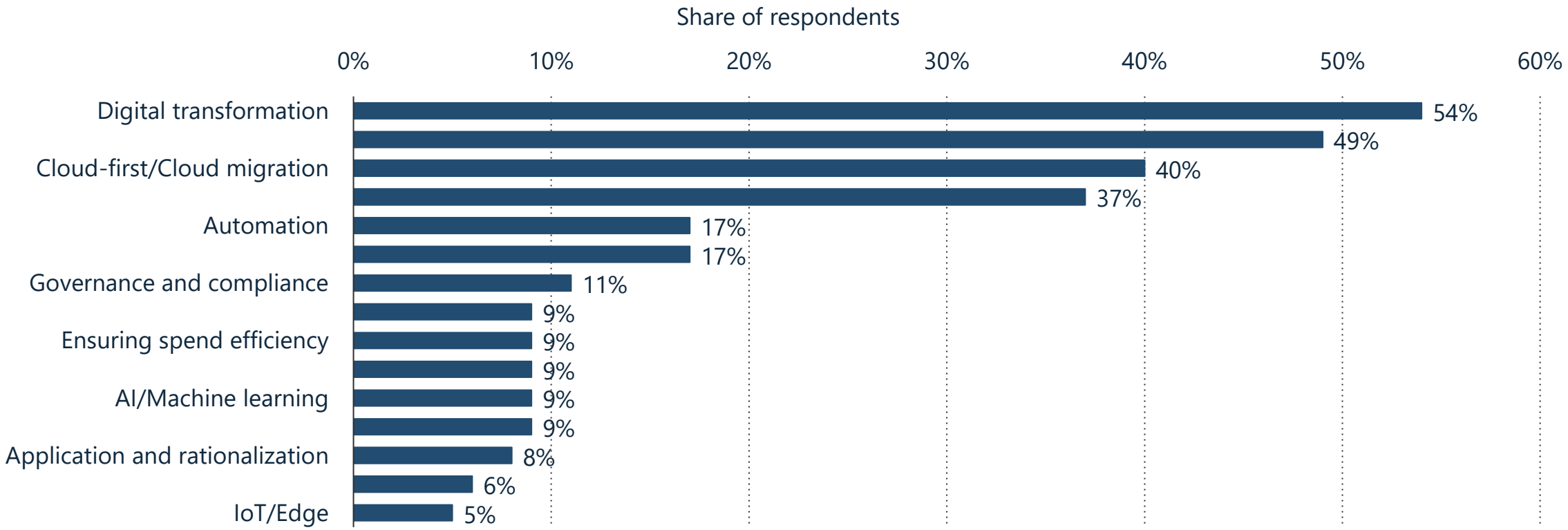
Digital frontier gap worldwide in 2018, by industry



Note: Worldwide; 2018; 1,600; companies
Further information regarding this statistic can be found on page 64.
Source(s): McKinsey

Priorities for IT technology initiatives in companies worldwide as of 2019*

Priorities for IT technology initiatives 2019



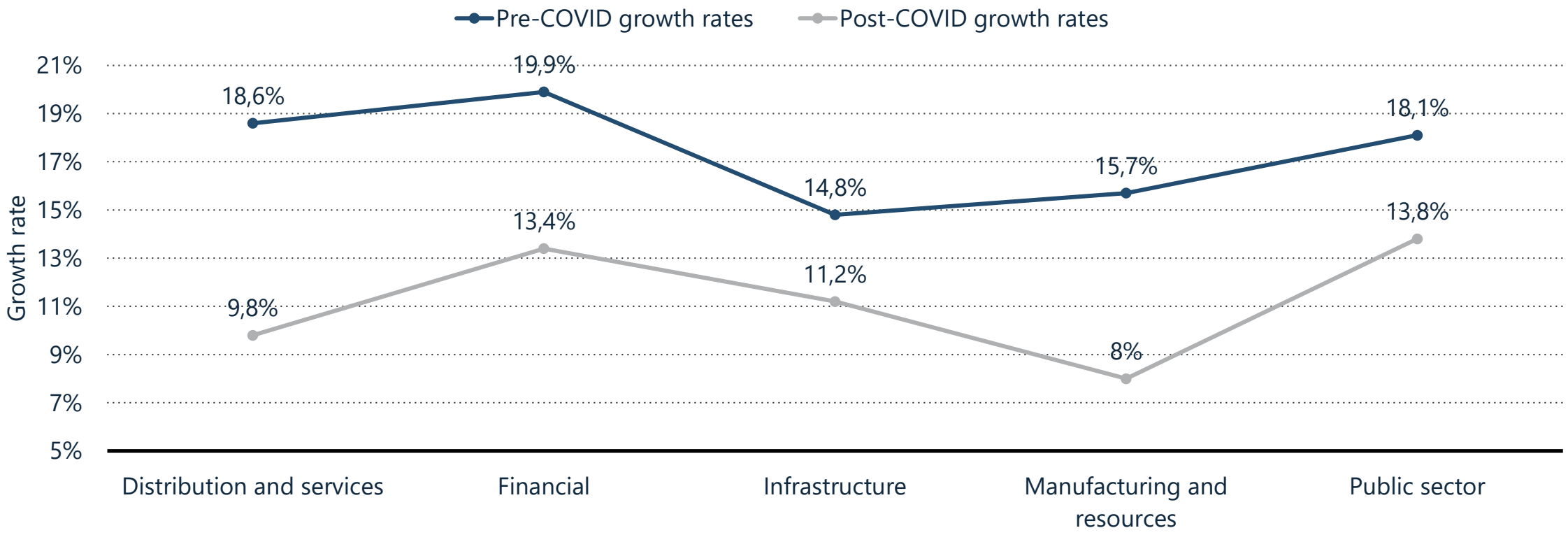
Note: Worldwide; July 2019; 303 Respondents; Executives and high-level managers in IT with visibility into their organizations' overall IT budgets. Organizations with at least 2,000 employees.
Further information regarding this statistic can be found on page 65.
Source(s): Flexera Software

Digital transformation

COVID-19 impact

Digital Transformation spending growth forecast worldwide by sector in 2020, pre and post COVID-19

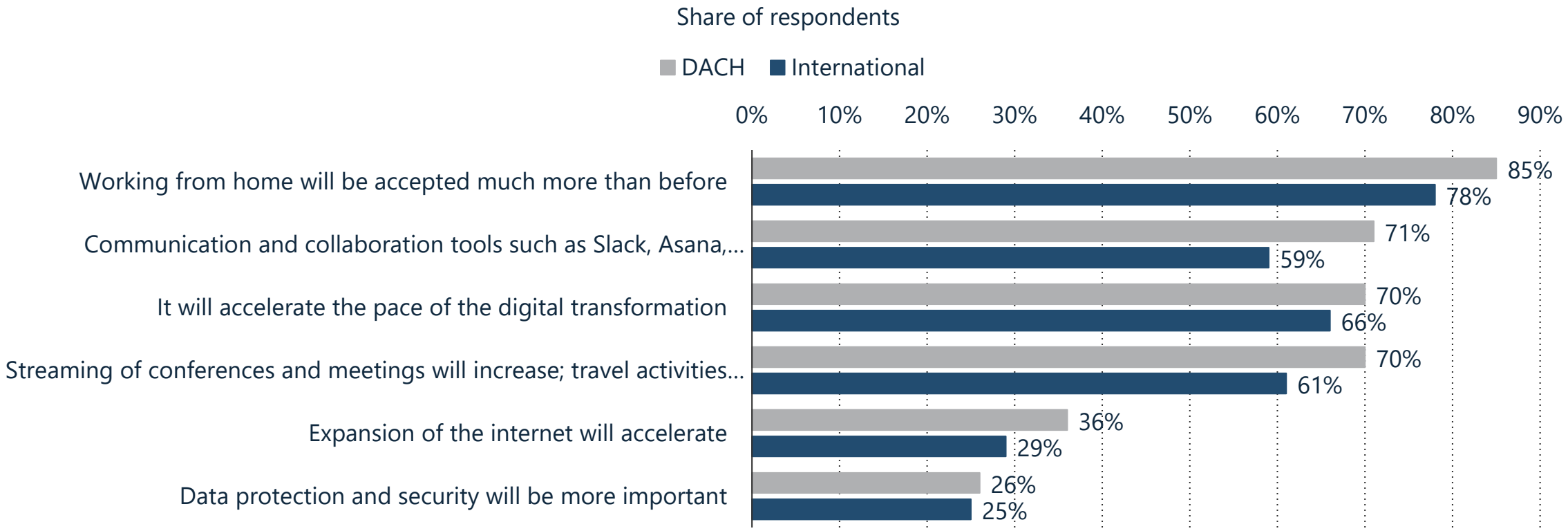
Pre and post COVID-19 digital transformation spending growth worldwide 2020



Note: Worldwide; 2020
Further information regarding this statistic can be found on page 66.
Source(s): IDC

What will business be like after the Corona pandemic? What impact will it have on the digital industry, in your opinion?

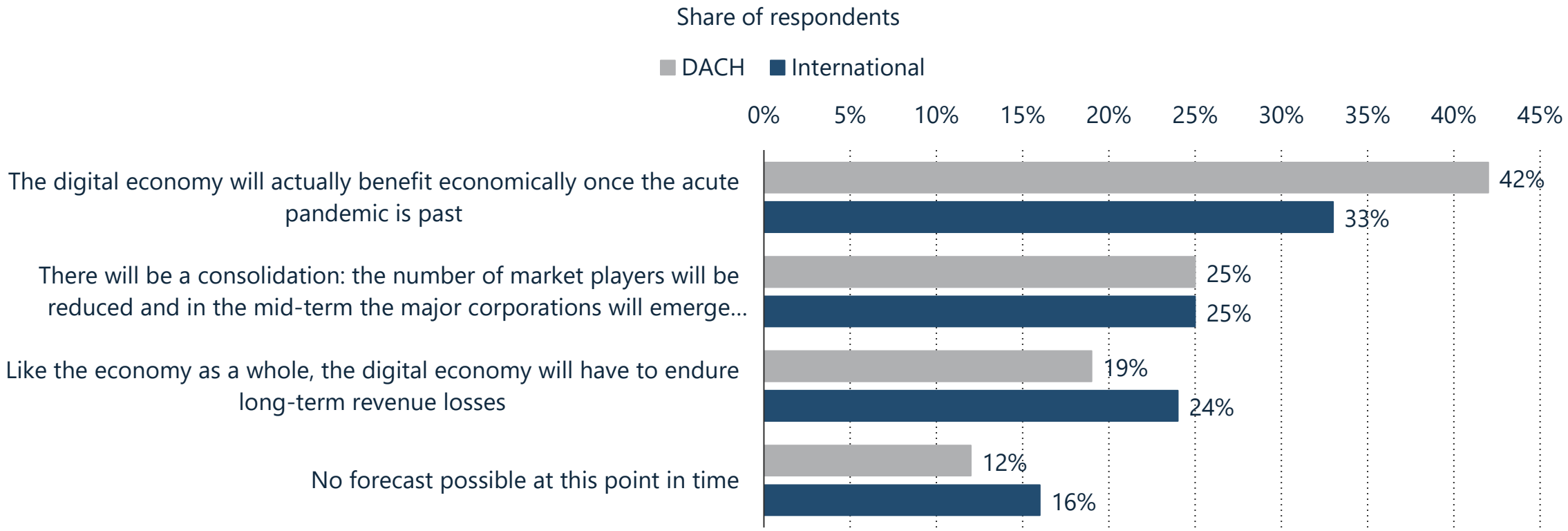
COVID-19 impact on businesses and digital industry worldwide 2020



Note: Worldwide; 2020; DACH (n=527), International (n=305); digital decision-makers
Further information regarding this statistic can be found on page 67.
Source(s): DMEXCO

How will the coronavirus pandemic affect the overall economic situation of the digital economy?

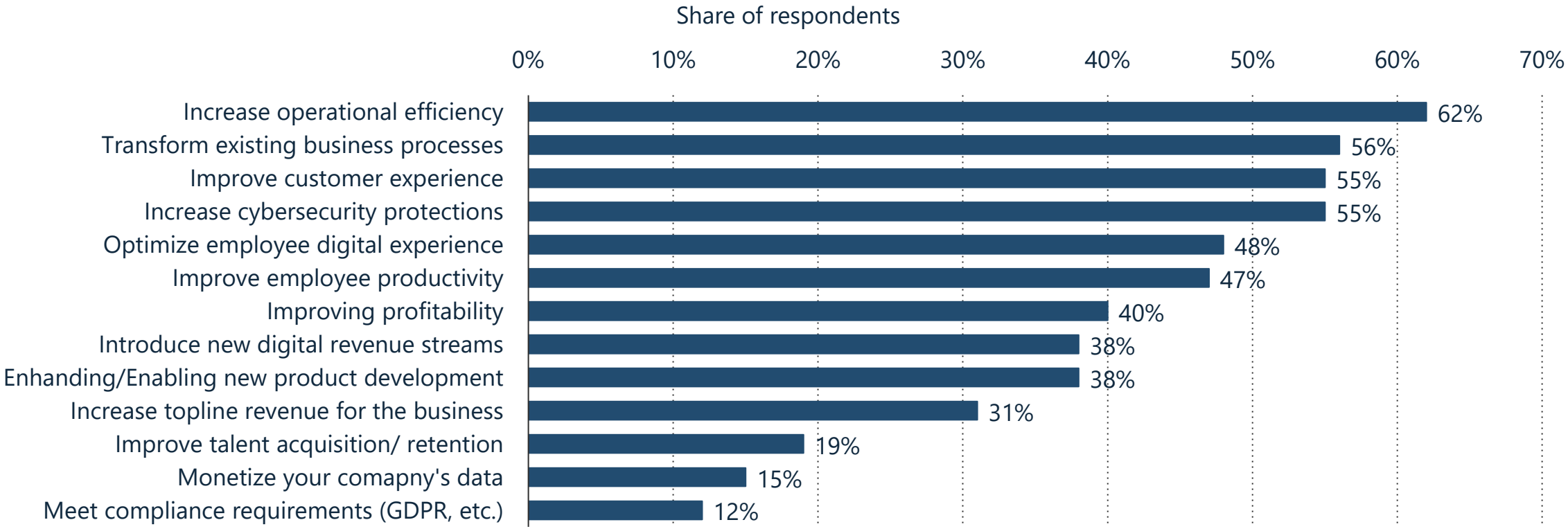
COVID-19 impact on digital economy worldwide 2020



Note: Worldwide; 2020; DACH (n=527), International (n=305); digital decision-makers
Further information regarding this statistic can be found on page 68.
Source(s): DMEXCO

How has the pandemic impacted the way your organization is prioritizing the following business initiatives? (Showing increased priority)

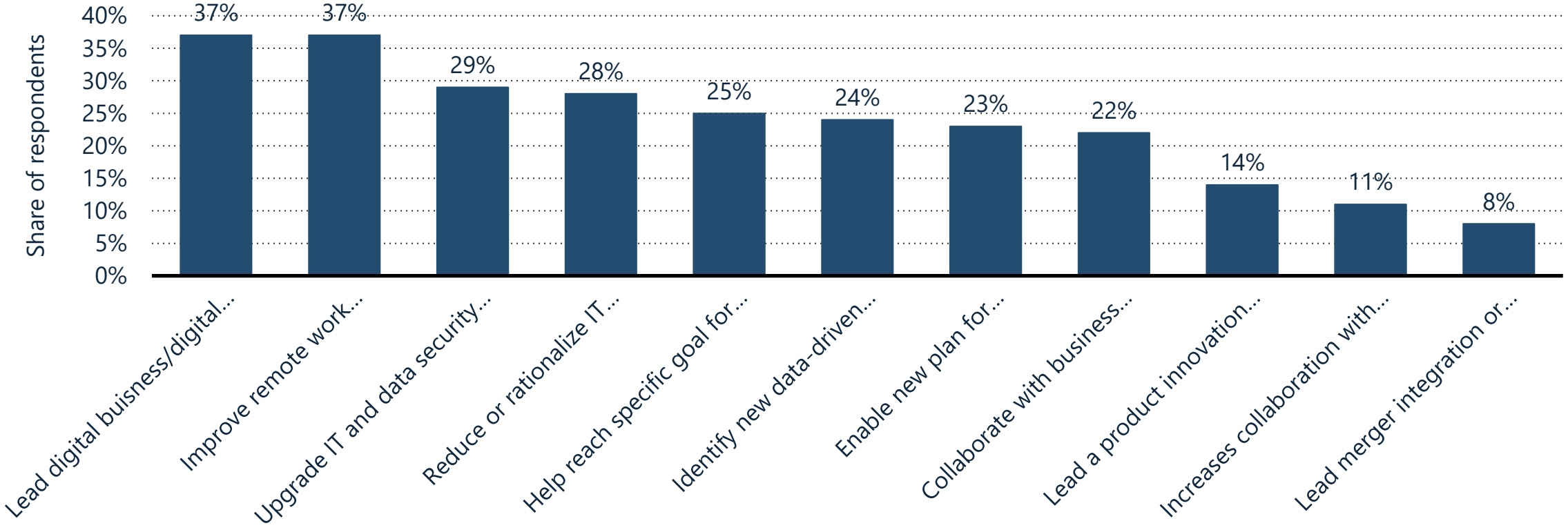
The impact of the COVID-19 pandemic on organizations' business priorities 2020



Note: Worldwide; April 2020; 414 Respondents; CIOs
Further information regarding this statistic can be found on page 69.
Source(s): IDG Research Services

Given the current state of the business what are the CEO's top three priorities for you to help business preserve through the current disruption?

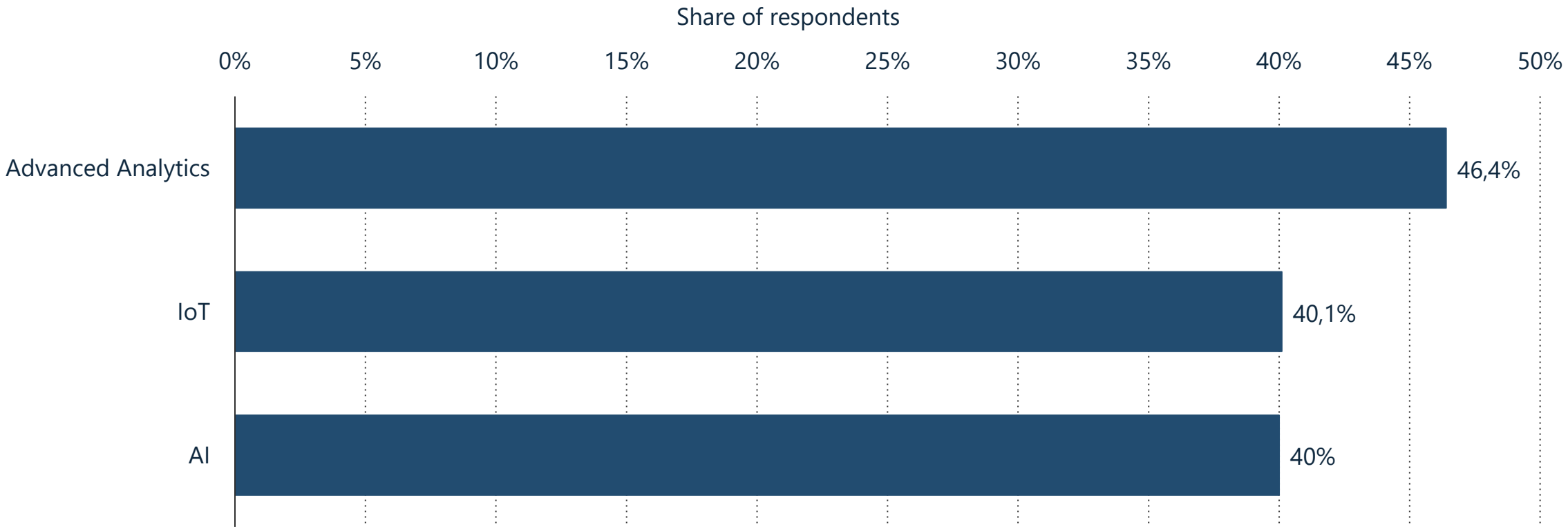
CEOs' top priorities for CIOs to preserve business amid COVID-19 2020



Note: Worldwide; April 2020; 414 Respondents; CIOs
Further information regarding this statistic can be found on page 70.
Source(s): IDG Research Services; CIO

The impact of coronavirus (COVID-19) on increased demand for tech innovation accelerators as of 2020*

Demand for innovation accelerators post-COVID-19 in 2020



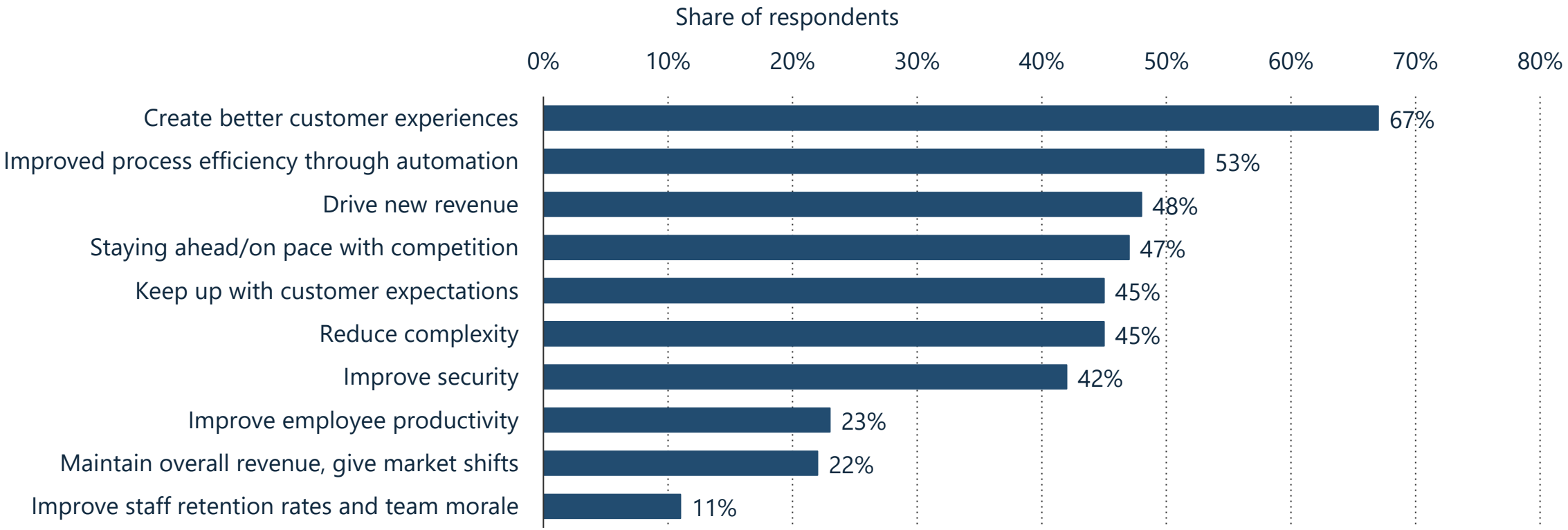
Note: Worldwide; 2020; 908 Respondents
Further information regarding this statistic can be found on page 71.
Source(s): IDC

Digital transformation

Drivers, challenges & success factors

Key objectives of digital business strategy in organizations worldwide as of 2019

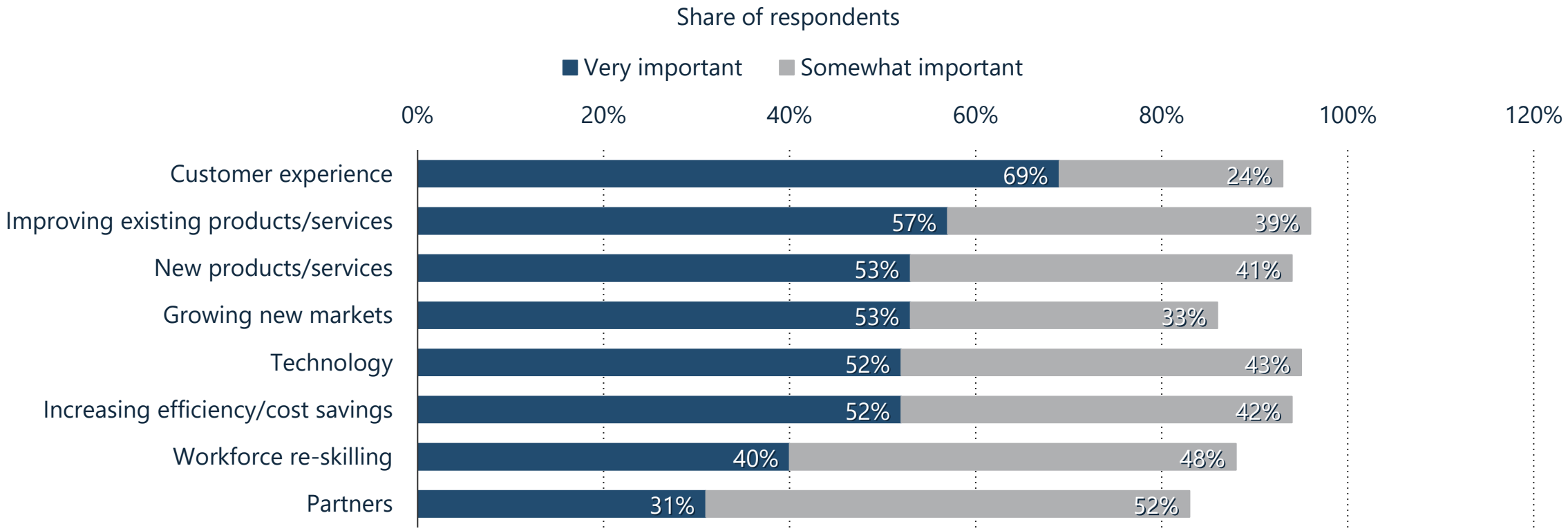
Objectives for digital transformation in organizations 2019



Note: Worldwide; 2019; 702 Respondents; survey respondents are within organizations that have plans to adopt/or already launched a "digital first" approach
Further information regarding this statistic can be found on page 72.
Source(s): IDG Research Services

Priorities driving digital information efforts in companies worldwide as of 2020

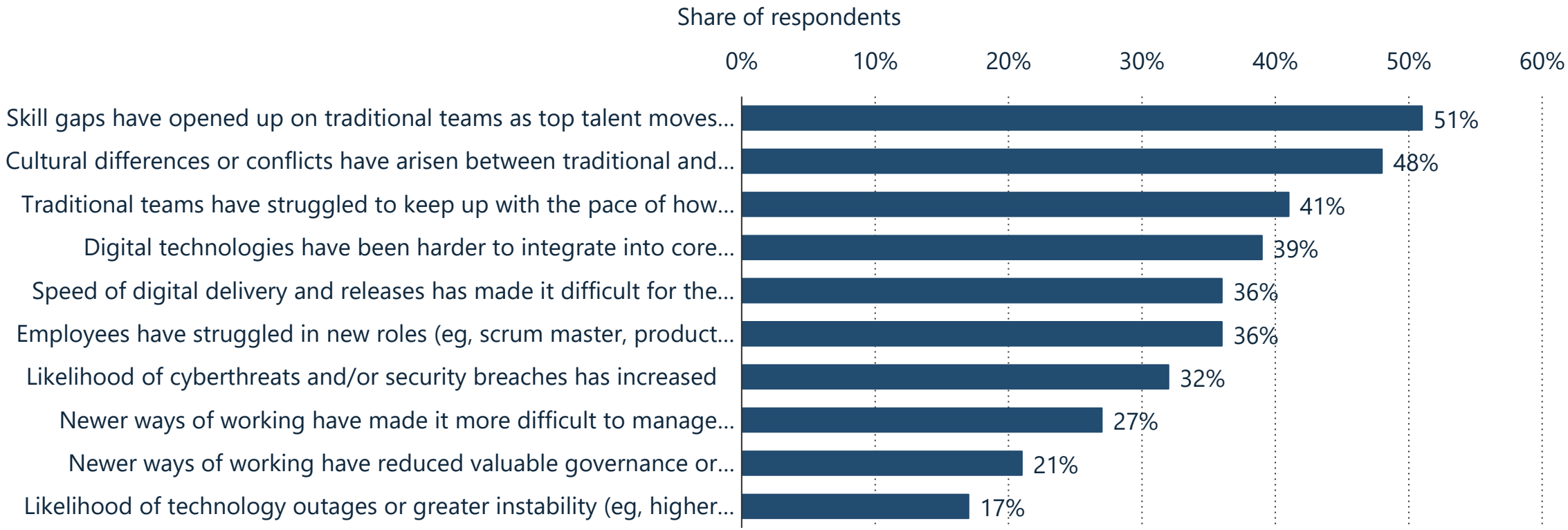
Priorities driving digital transformation efforts in organizations worldwide 2020



Note: Worldwide; 2020; 302 Respondents; Majority of respondents are C-suite executives (CIOs and senior IT executives) from organizations with at least 2,000 employees
Further information regarding this statistic can be found on page 73.
Source(s): Flexera Software

Challenges encountered as a result of digital transformations in global organizations as of 2020

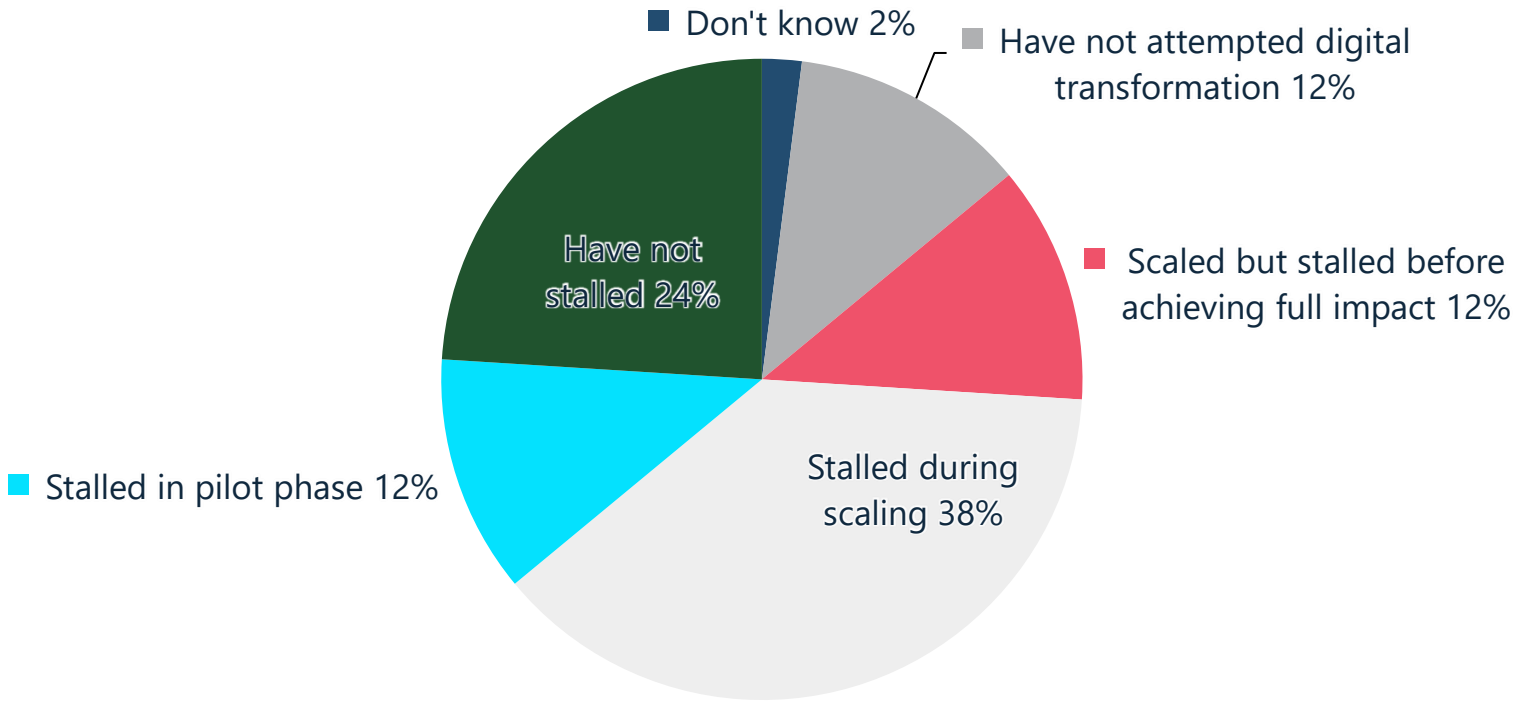
Obstacles encountered in digital transformation worldwide 2020



Note: Worldwide; 2020; 283*
Further information regarding this statistic can be found on page 74.
Source(s): McKinsey

Where companies have stalled in their digital progress

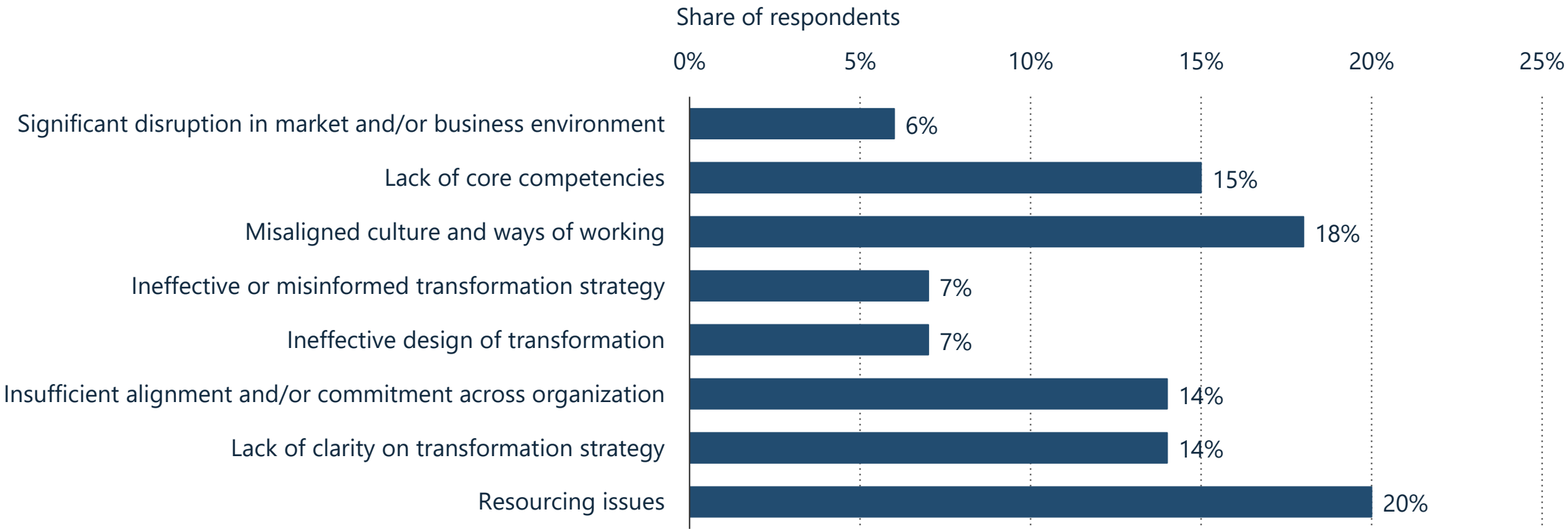
Stalling points of digital transformation initiatives in global companies 2020



Note: Worldwide; 2020; 1,256
Further information regarding this statistic can be found on page 75.
Source(s): McKinsey

Factors that stalled digital transformation initiatives in global companies as of 2020

Primary reasons that stalled momentum for digital transformation worldwide 2020



Note: Worldwide; 2020; 731 Respondents
Further information regarding this statistic can be found on page 76.
Source(s): McKinsey

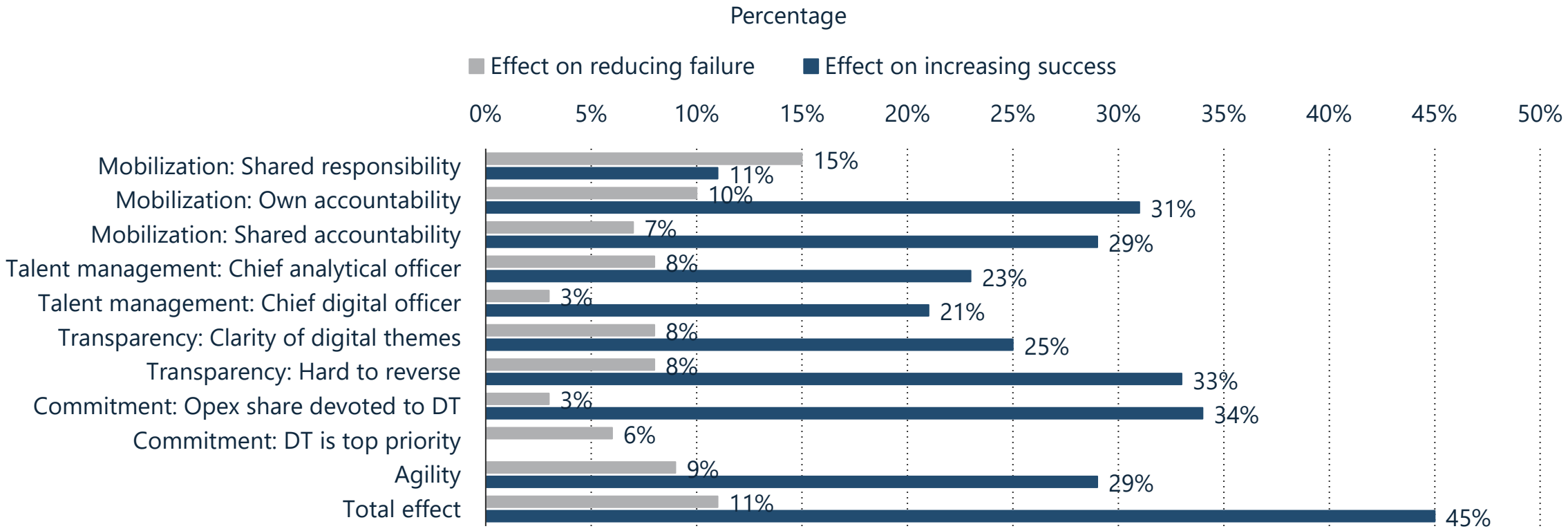
Actions taken in global organizations after digital transformations' loss of momentum or failure to scale, as of 2020

Interventions to jump-start stalled digital transformations worldwide 2020

Note: Worldwide; 2020; 731*
Further information regarding this statistic can be found on page 77.
Source(s): McKinsey

Management factors affecting the odds of digital transformation worldwide as of 2018

Key themes that affect success rate of digital transformation 2018



Note: Worldwide; 2018
Further information regarding this statistic can be found on page 78.
Source(s): McKinsey

Reasons that global organizations have avoided stalls when undertaking digital transformations, as of 2020

Main reasons for avoiding stall during digital transformation 2020

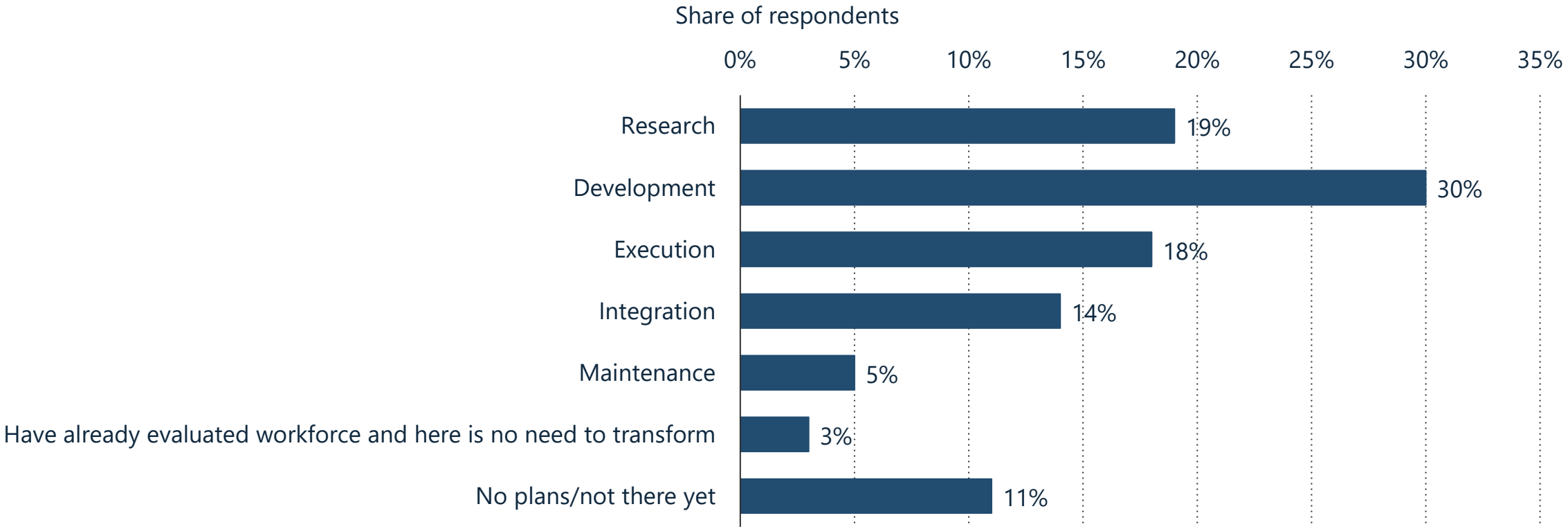
Note: Worldwide; 2020; 302*
Further information regarding this statistic can be found on page 79.
Source(s): McKinsey

Digital transformation

Impact on workforce

How would you describe your organization's progress with respect to workforce transformation?*

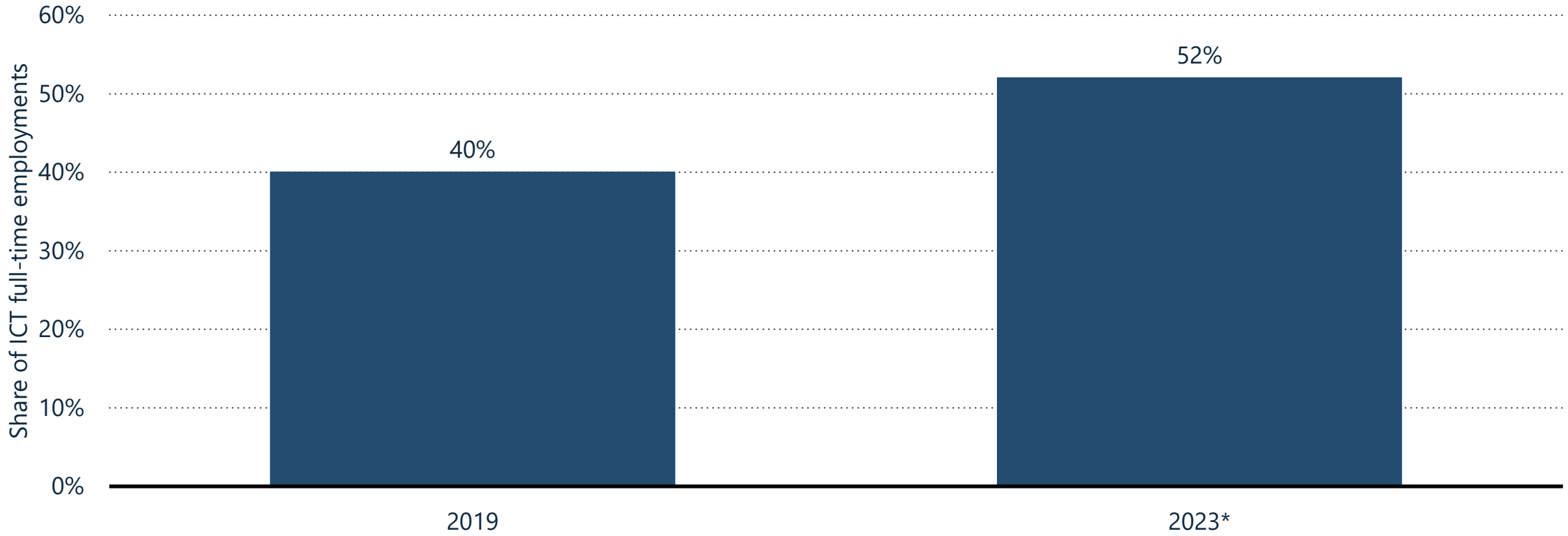
Implemention level of workforce digital transformation in organizations 2019



Note: Worldwide; 2019; 702 Respondents; survey respondents are within organizations that have plans to adopt/or already launched a "digital first" approach
Further information regarding this statistic can be found on page 80.
Source(s): IDG Research Services

Digital transformation (DX) roles' share of information and communication technology (ICT) full-time employments worldwide in 2019 and 2023

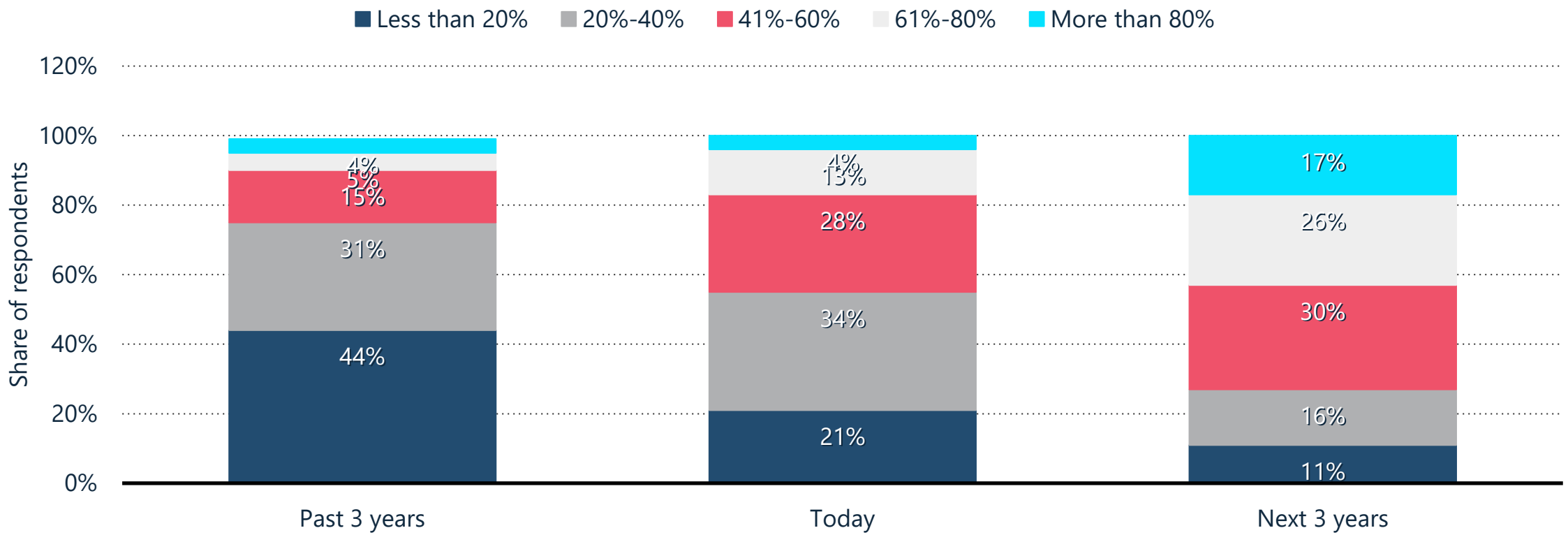
DX roles share of ICT full-time employment worldwide in 2019 and 2023



Note: Worldwide; 2019
Further information regarding this statistic can be found on page 81.
Source(s): IDC

Share of workforce that have moved/will move into new roles due to technological impact in organizations worldwide, as of end 2018

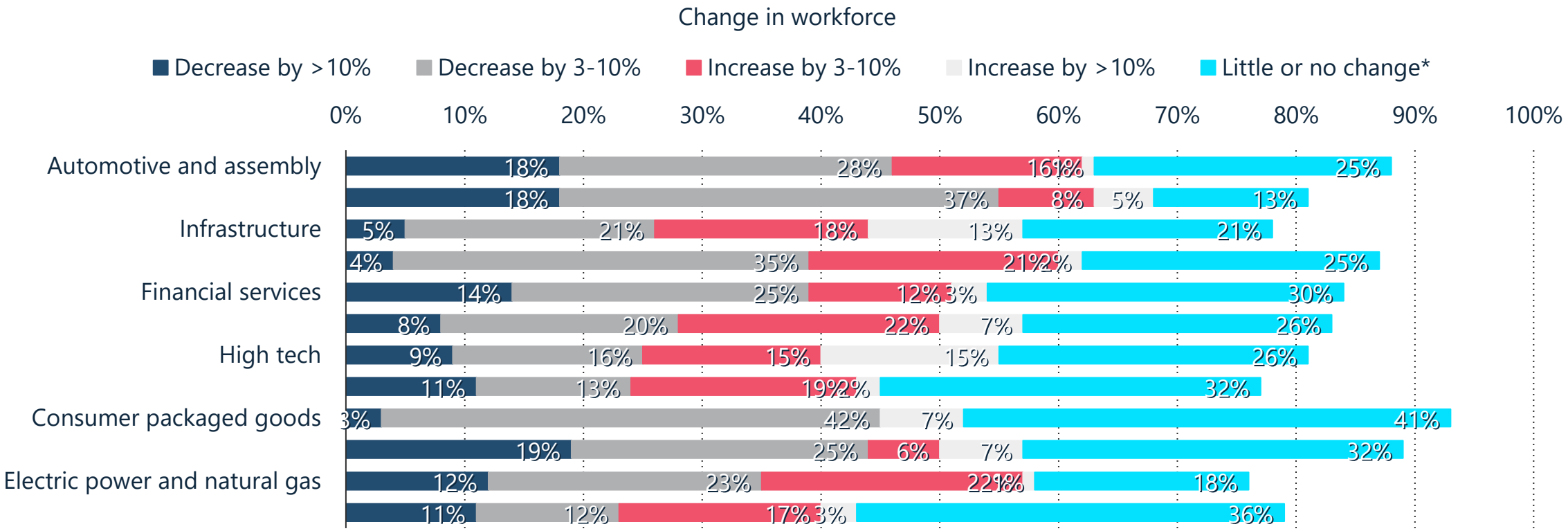
Technology's impact on workforce within organizations worldwide 2018



Note: Worldwide; October through December 2018; 6672 Respondents; Business and IT executives
Further information regarding this statistic can be found on page 82.
Source(s): Accenture

Predicted workforce changes from artificial intelligence (AI) adoption in organizations worldwide from 2020-2023, by industry

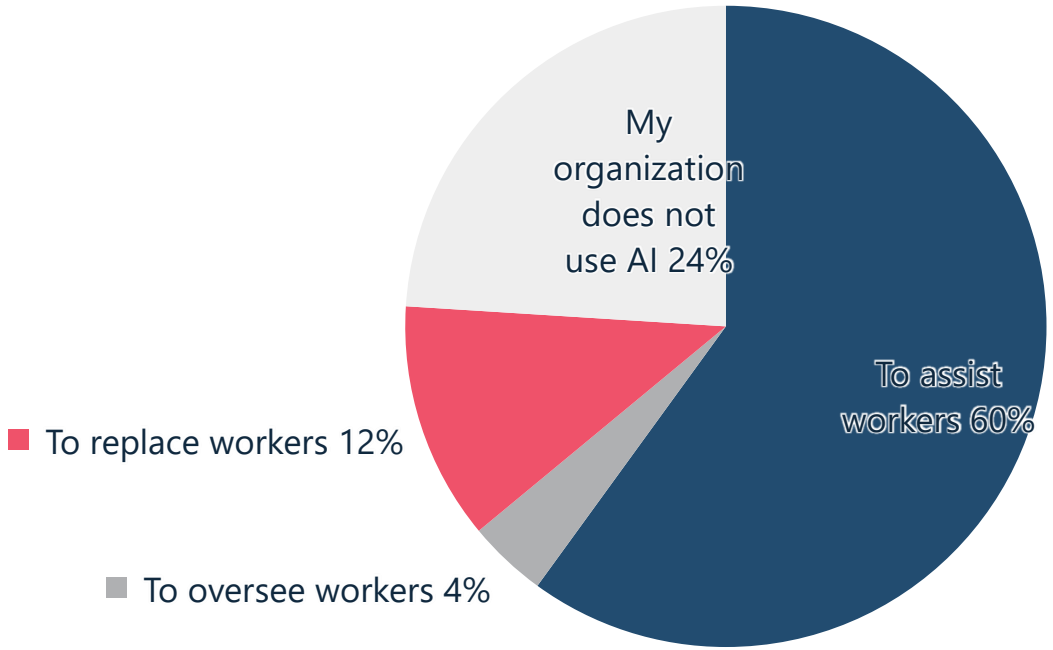
Worldwide workforce changes from adopting AI in companies 2020-2023, by industry



Note: Worldwide; March 26 to April 5, 2019; 1,872
Further information regarding this statistic can be found on page 83.
Source(s): McKinsey

Leading reasons for using AI in their organization according to global business and HR leaders as of 2020

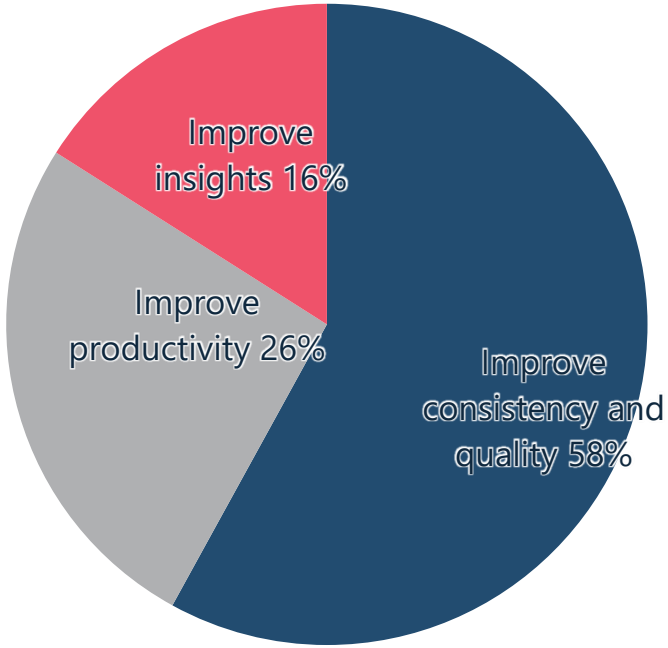
Global business and HR leaders primary reason for using AI in their organization 2020



Note: Worldwide; 2020; 8,949; business and HR leaders
Further information regarding this statistic can be found on page 84.
Source(s): Deloitte

Leading uses of AI to assist workers in their organization according to global business and HR leaders as of 2020

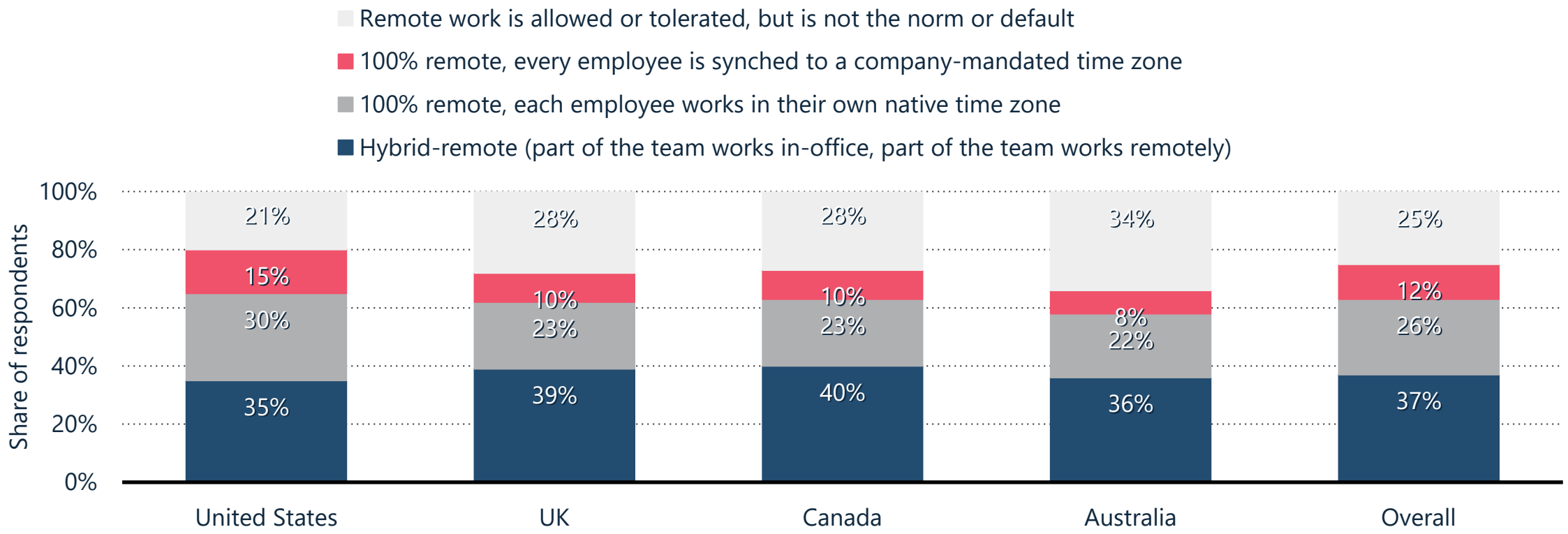
Global business and HR leaders use of AI to assist workers in their organization 2020



Note: Worldwide; 2020; 5,369; business and HR leaders
Further information regarding this statistic can be found on page 85.
Source(s): Deloitte

Company policy on remote work in companies with digital output in 2020, by country

Company policy on remote work with digital output by country 2020



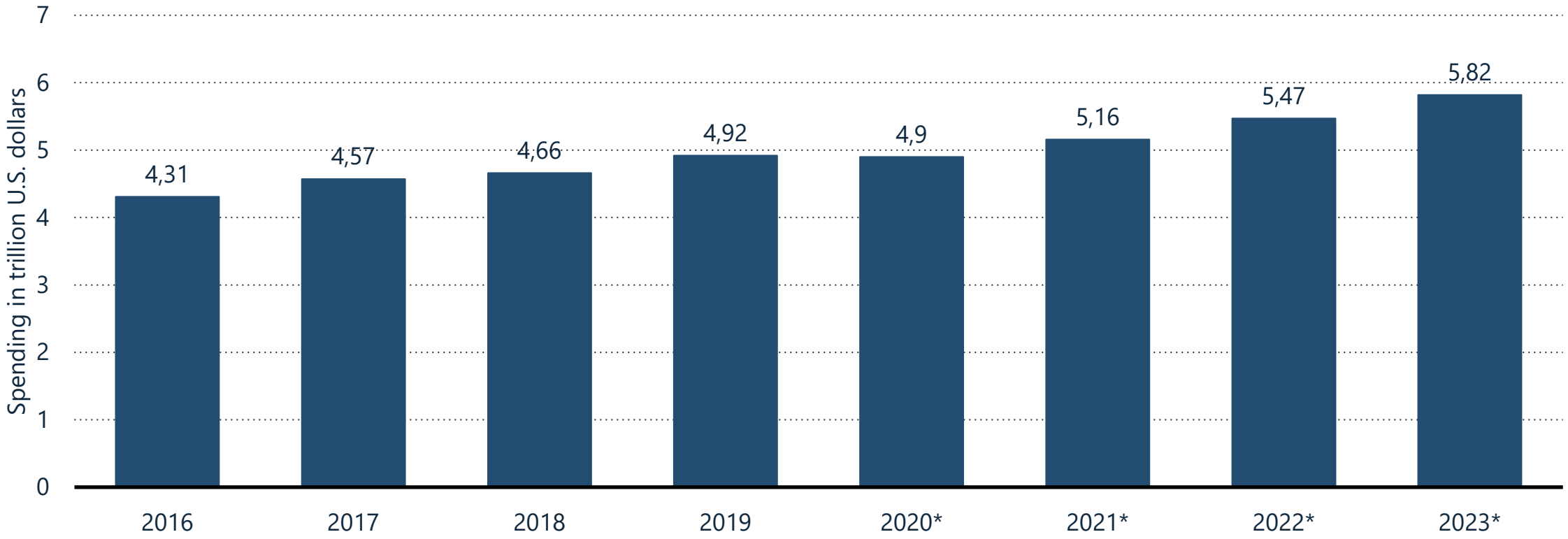
Note: Australia, Canada, United Kingdom, United States; January 30, 2020 to February 10, 2020; 21 years and older; 3000+; Adult professionals who work remotely or have the option to work remotely and are in roles with digital output
Further information regarding this statistic can be found on page 86.
Source(s): GitLab

Digital transformation

ICT spending

Total information communication technology (ICT) market spending worldwide from 2016 to 2023 (in trillion U.S. dollars)

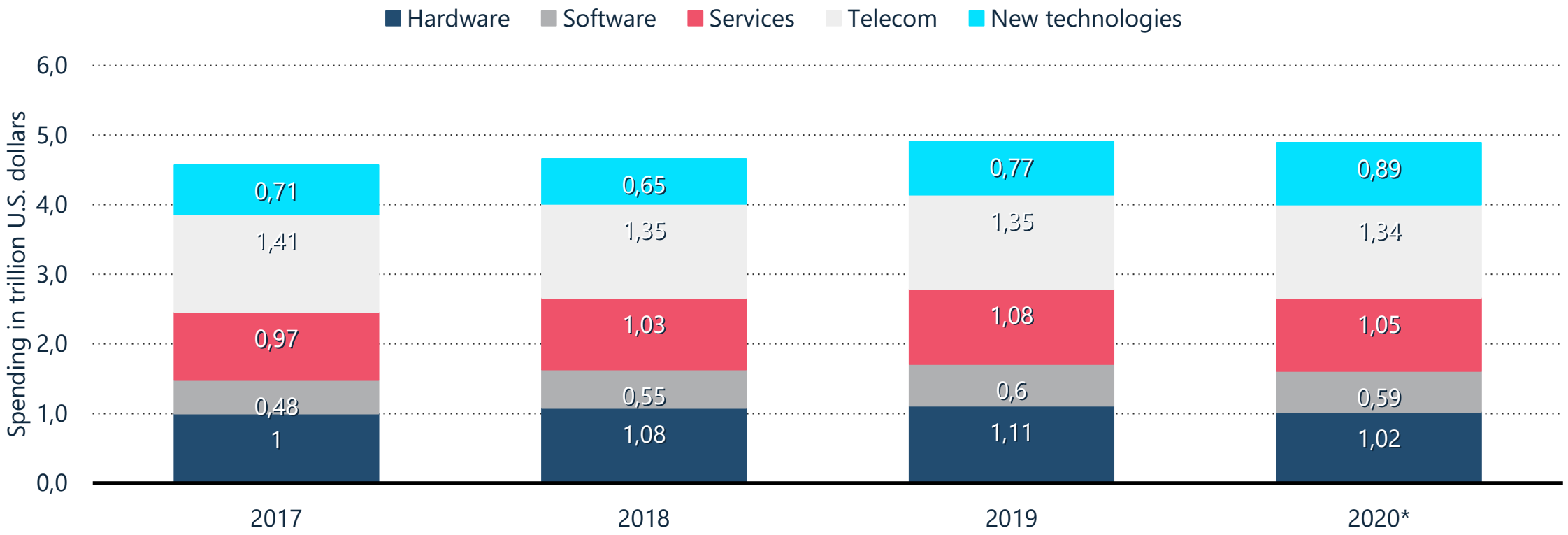
Worldwide ICT spending 2016-2023



Note: Worldwide; 2016 to 2019
Further information regarding this statistic can be found on page 87.
Source(s): IDC

Total information communication technology (ICT) market spending worldwide from 2017 to 2020, by category (in trillion U.S. dollars)

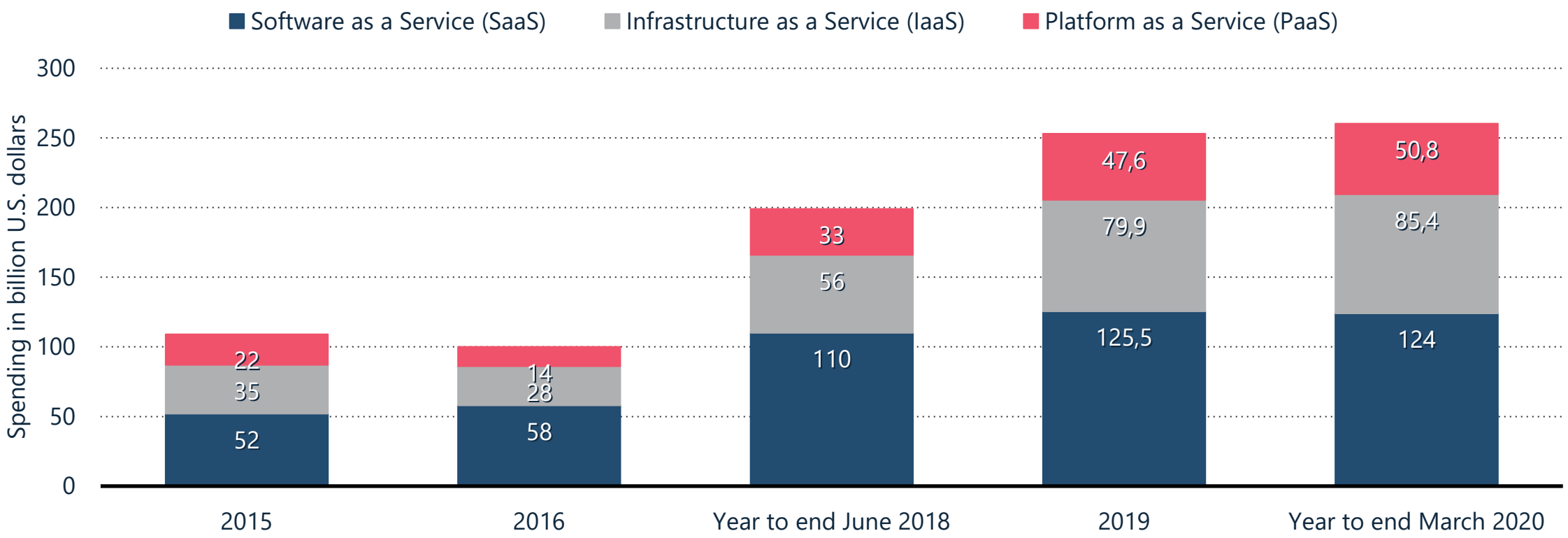
Worldwide ICT spending 2017-2020, by category



Note: Worldwide; 2017 to 2019
Further information regarding this statistic can be found on page 88.
Source(s): IDC

Cloud services market spending by segment worldwide from 2015 to 2020 (in billion U.S. dollars)*

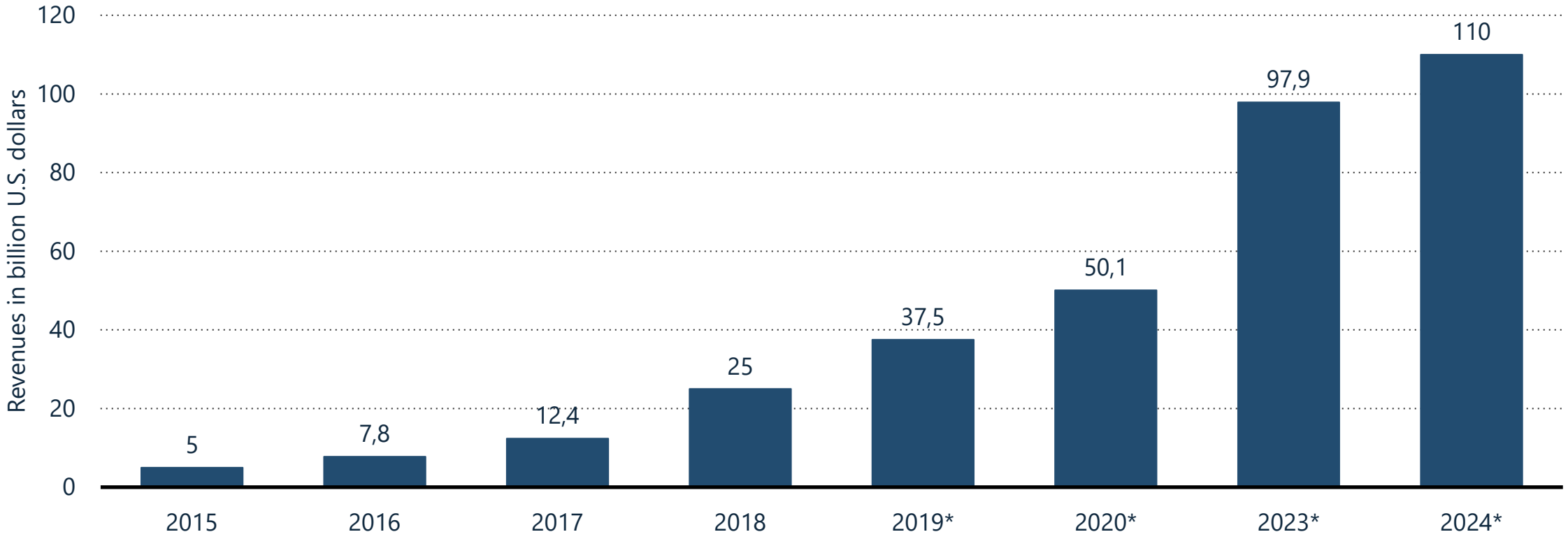
Cloud computing worldwide revenue 2015-2020, by segment



Note: Worldwide; 2015 to 2020
Further information regarding this statistic can be found on page 89.
Source(s): ITCandor

Cognitive and artificial intelligence (AI) systems market revenue worldwide from 2015 to 2024 (in billion U.S. dollars)

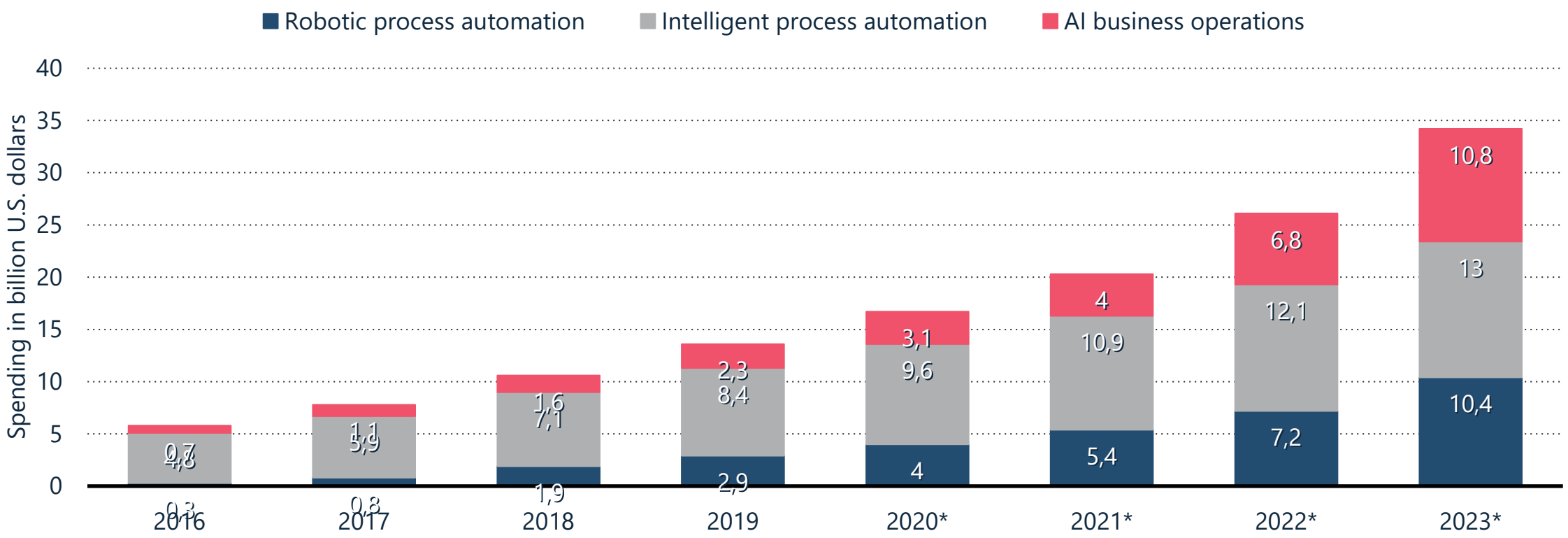
Artificial Intelligence and cognitive systems revenues worldwide 2015-2024



Note: Worldwide; 2016 to 2020
Further information regarding this statistic can be found on page 90.
Source(s): IDC

Robotic/intelligent process automation (RPA/IPA) and artificial intelligence (AI) automation spending worldwide from 2016 to 2023, by segment (in billion U.S. dollars)

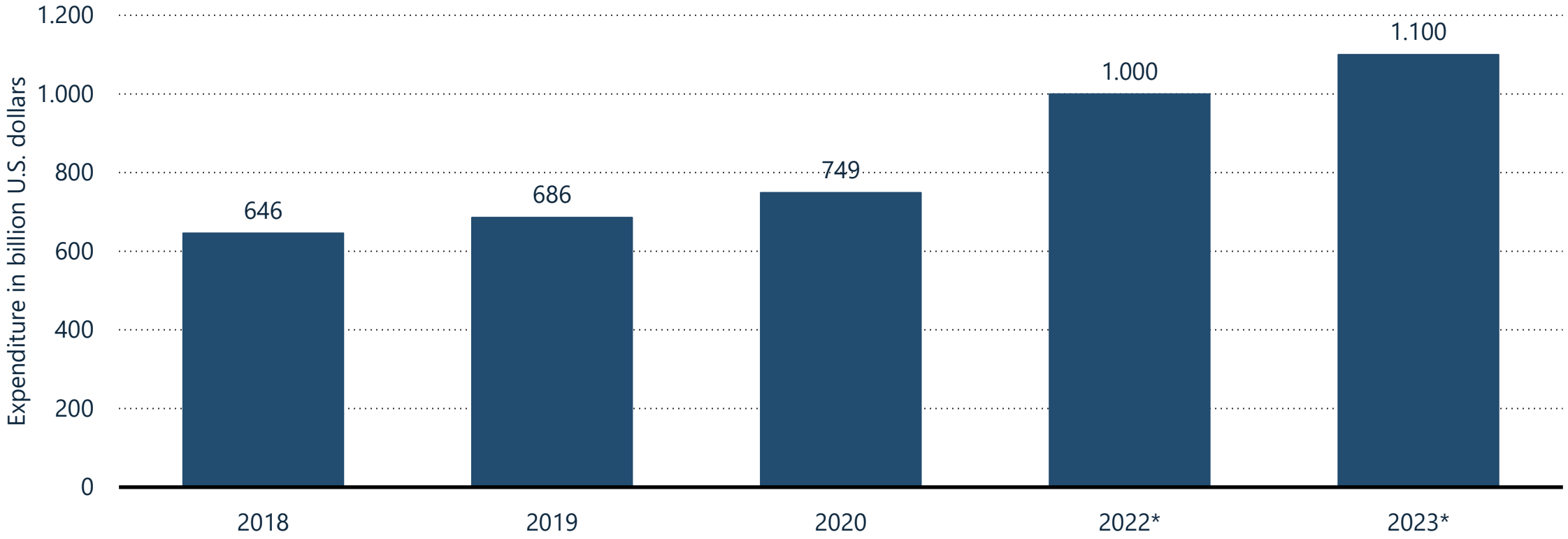
Spending on automation and AI business operations worldwide 2016-2023, by segment



Note: Worldwide; 2017 to 2019
Further information regarding this statistic can be found on page 91.
Source(s): HfS Research

Prognosis of worldwide spending on the Internet of Things (IoT) from 2018 to 2023 (in billion U.S. dollars)

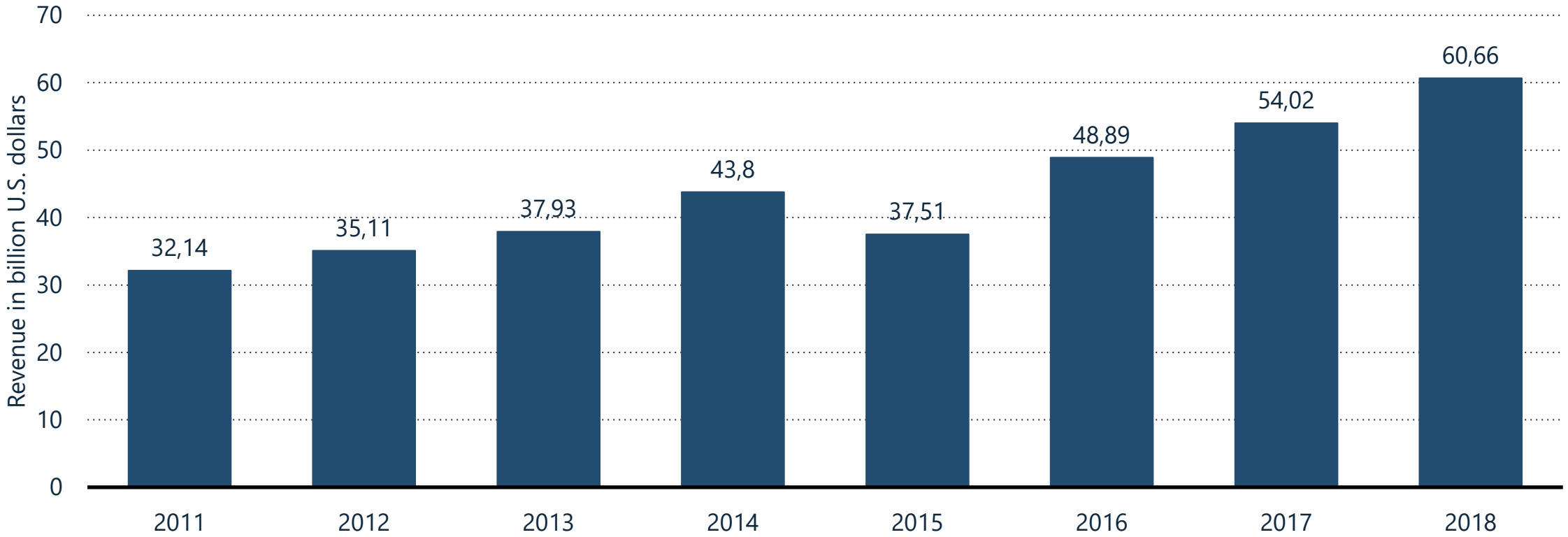
Internet of Things (IoT) spending worldwide 2023



Note: Worldwide; 2018 to 2020
Further information regarding this statistic can be found on page 92.
Source(s): IDC

Big data and analytics software revenue worldwide from 2011 to 2018 (in billion U.S. dollars)*

Big data and analytics software market worldwide 2011-2018



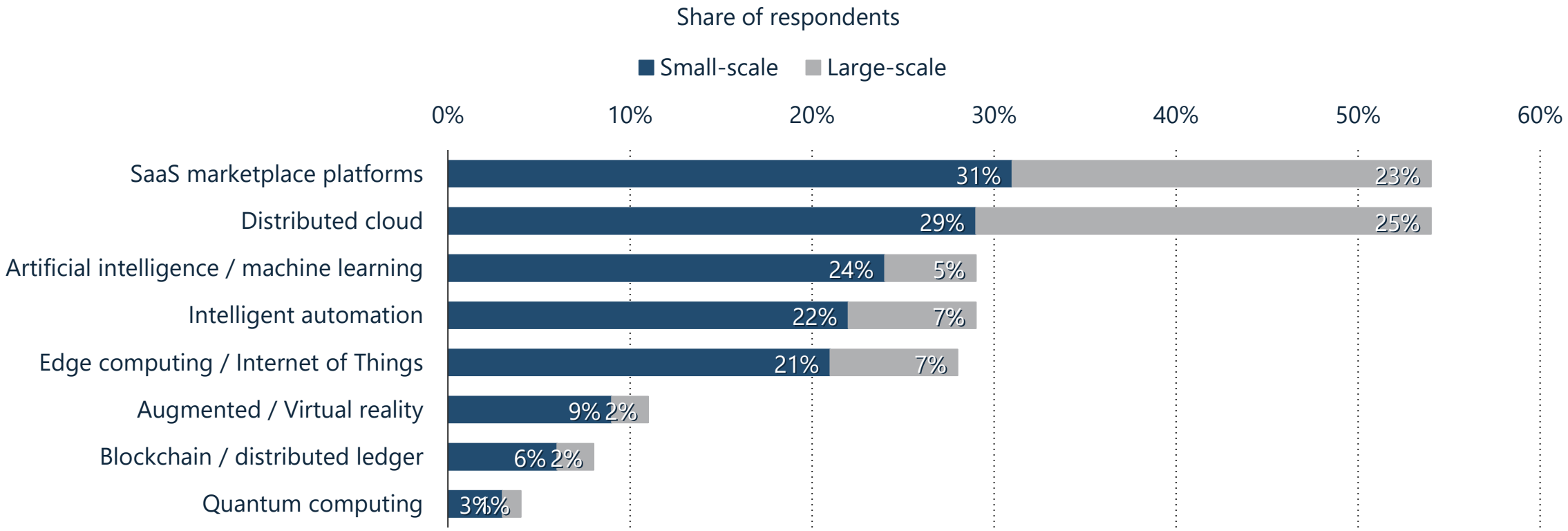
Note: Worldwide; 2011 to 2018
Further information regarding this statistic can be found on page 93.
Source(s): IDC; SAS Institute

Digital transformation

Technology adoption

Adoption rate of emerging technologies in organizations worldwide as of 2020, by scale

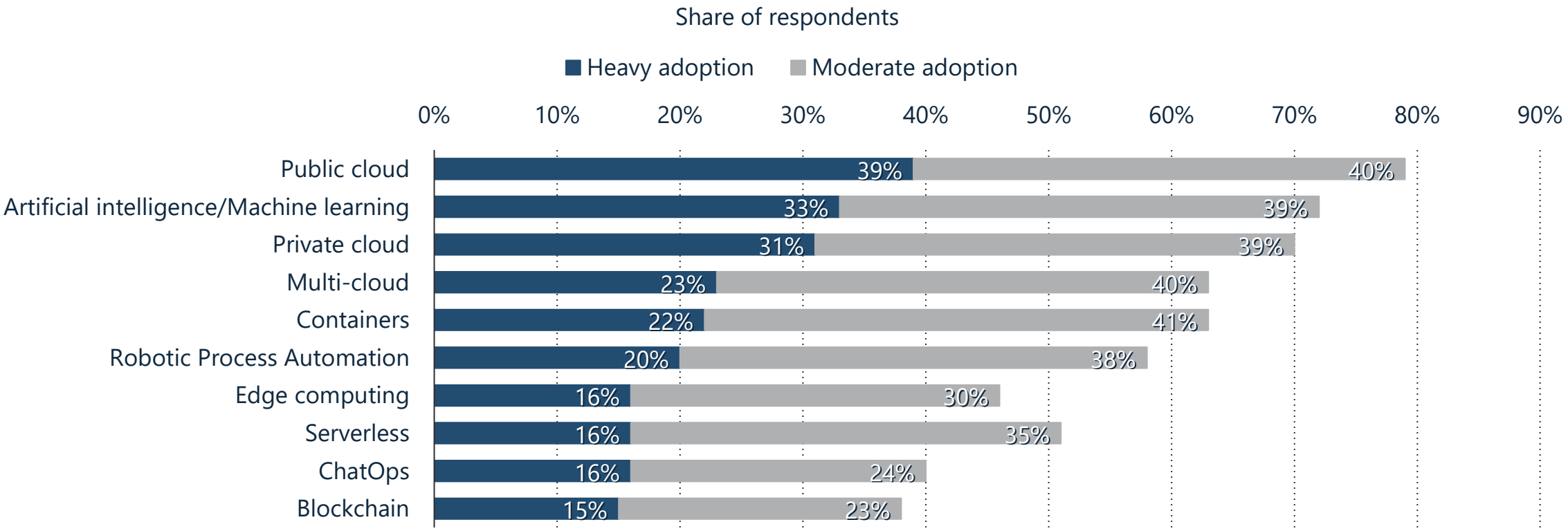
Implementation of emerging technologies in companies worldwide 2020



Note: Worldwide; December 2019 to March 2020 / May to August 2020; 2,791 / 1,428; CIOs and IT leaders across 83 countries
Further information regarding this statistic can be found on page 94.
Source(s): KPMG; Harvey Nash

Planned adoption of technologies in organizations worldwide as of 2020

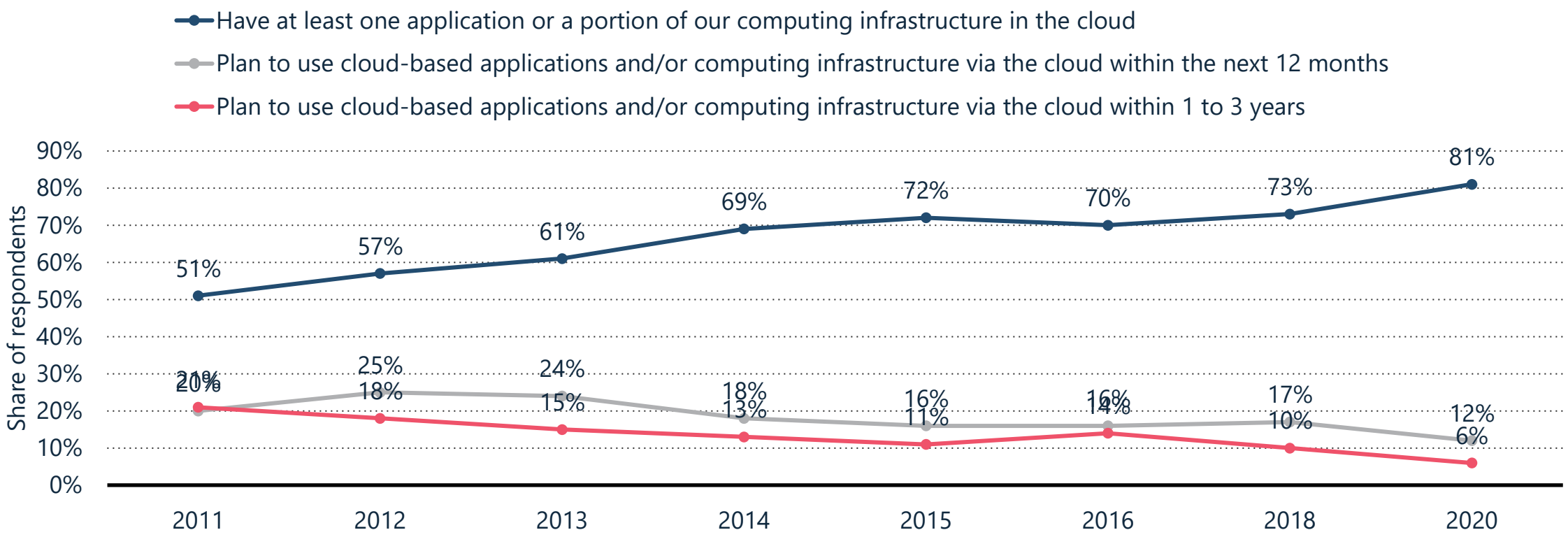
Adoption of technologies in companies worldwide 2020



Note: Worldwide; 2020; 302 Respondents; Majority of respondents are C-suite executives (CIOs and senior IT executives) from organizations with at least 2,000 employees
Further information regarding this statistic can be found on page 95.
Source(s): Flexera Software

What are your organization's plans for utilizing computing infrastructure or applications via the cloud?

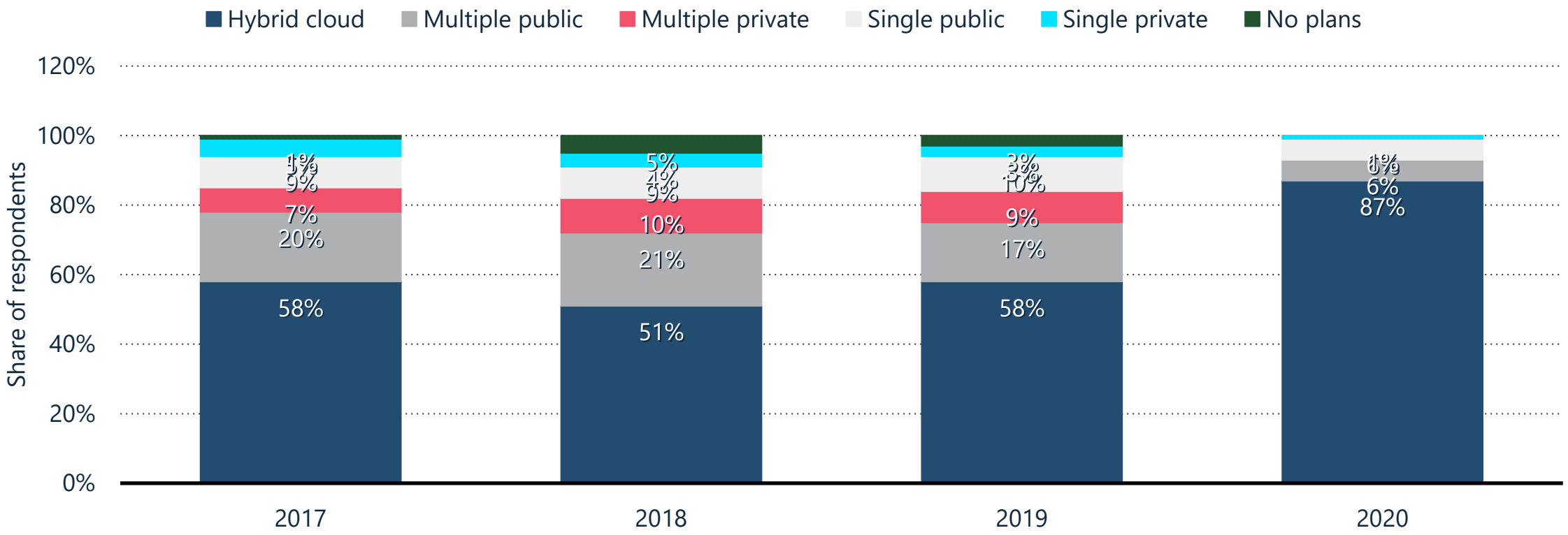
Trends in enterprise utilization of cloud infrastructure and applications 2011-2020



Note: Worldwide; 2020; 551 Respondents; Are involved in the purchase process for cloud computing and their organization has, or plans to have, at least one application, or a portion of their infrastructure, in the cloud. 95 percent of respondents are from the United States.
Further information regarding this statistic can be found on page 96.
Source(s): IDG Research Services

Enterprise cloud strategy worldwide from 2017 to 2020, by cloud type

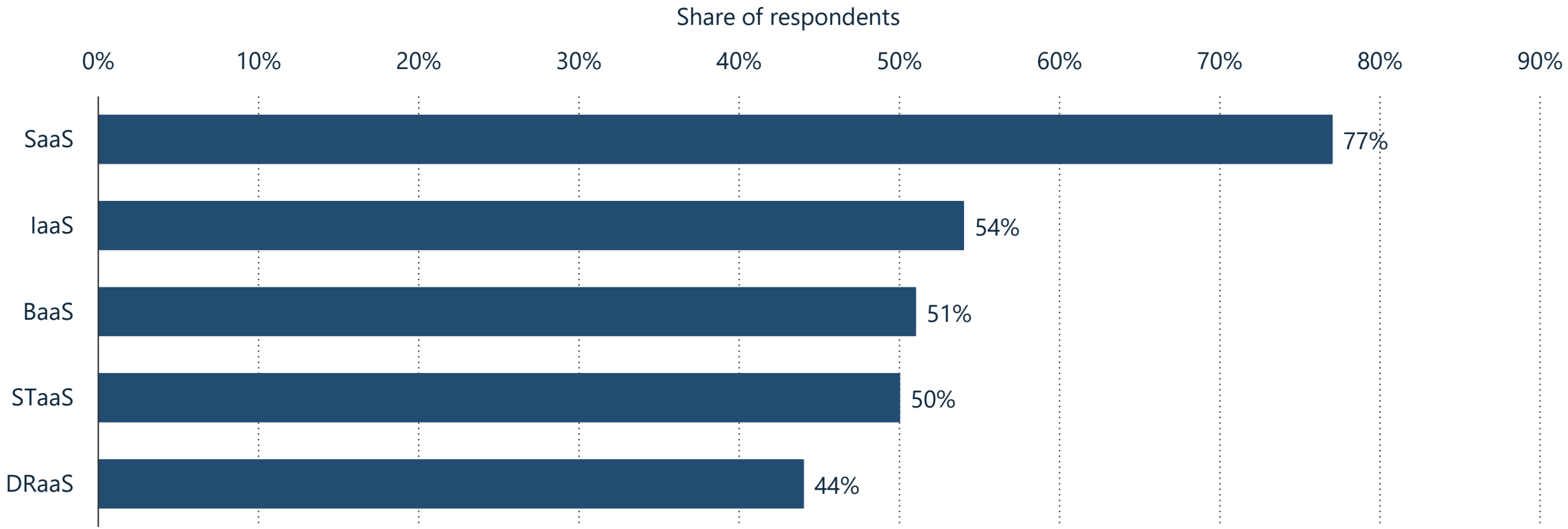
Worldwide enterprise cloud strategy 2017-2020



Note: Worldwide; First quarter 2020; 554 Enterprise (more than 1,000 employees); Technical professionals across a cross-section of organizations
Further information regarding this statistic can be found on page 97.
Source(s): RightScale; Flexera Software

Types of cloud-based services used in organizations worldwide as of 2019

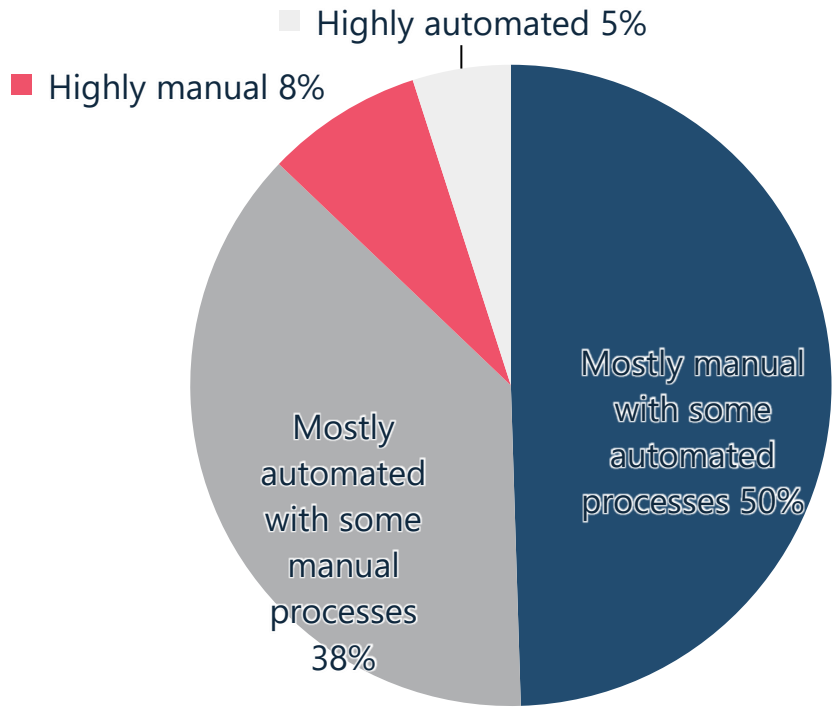
Cloud services used in business worldwide 2019, by deployment type



Note: Worldwide; 2019; 1,575; senior business and IT business makers
Further information regarding this statistic can be found on page 98.
Source(s): Veeam

Level of automation within the IT environment of organizations worldwide as of 2019

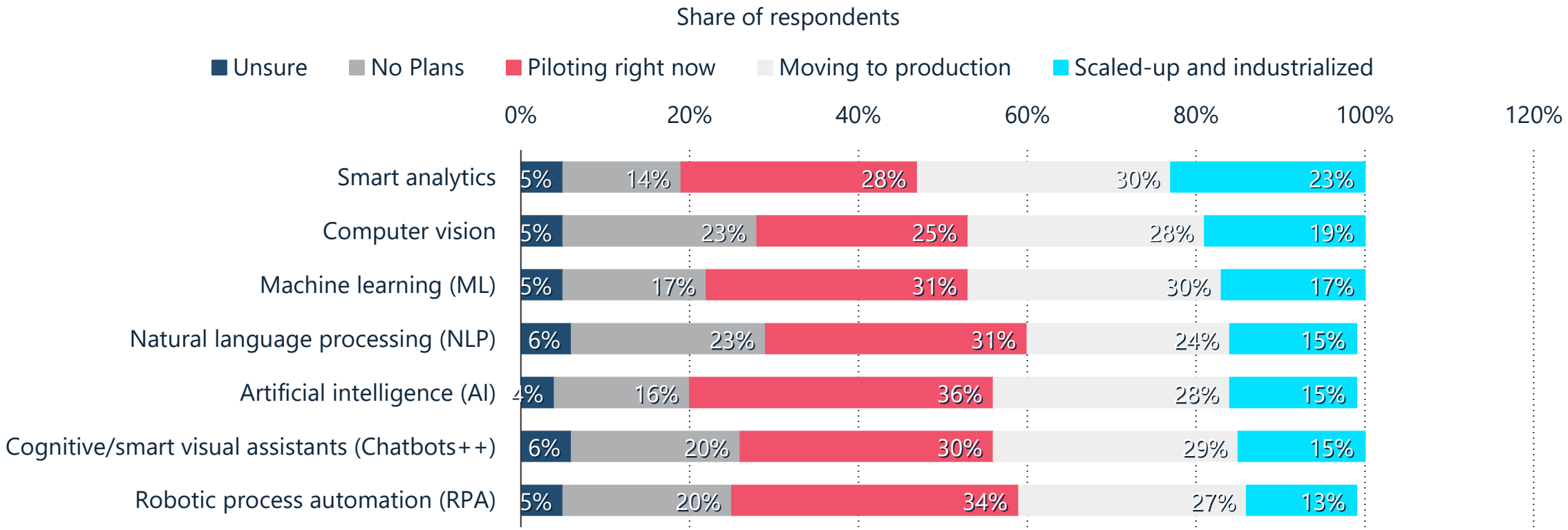
Global level of automation within IT environment 2019



Note: Worldwide; 2019; 881 Respondents
Further information regarding this statistic can be found on page 99.
Source(s): 451 Research

Adoption rate of intelligent automation (IA) technologies in organizations worldwide in 2019*

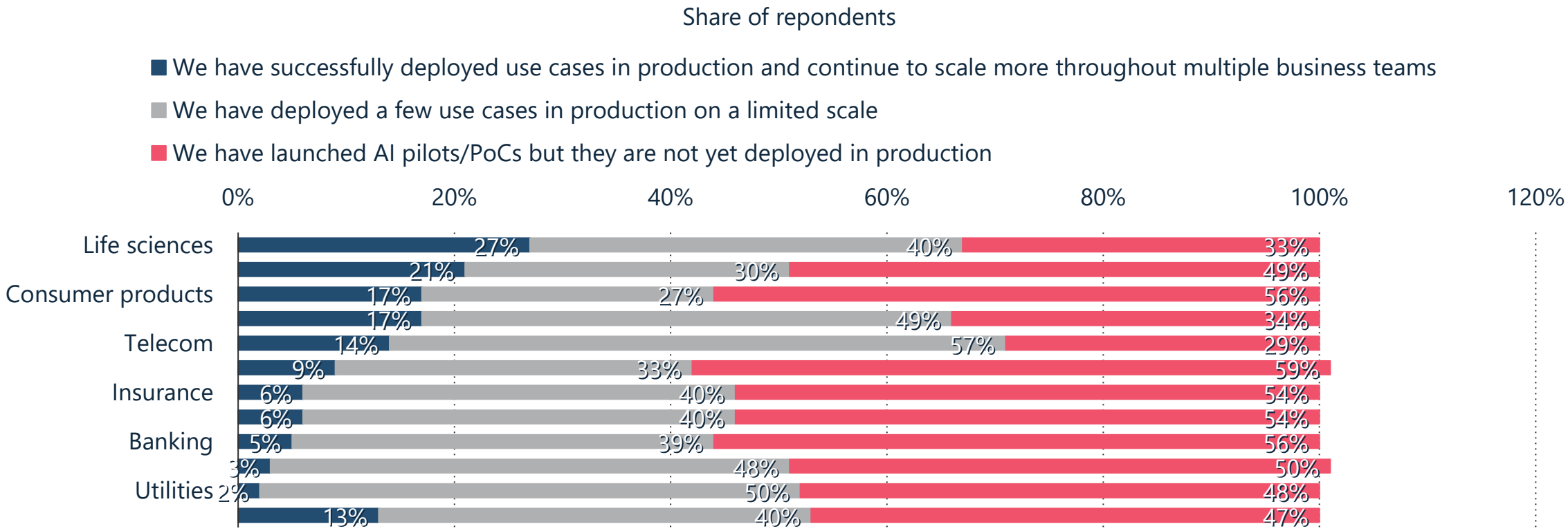
Global adoption of intelligent automation (IA) technologies in organizations 2019



Note: Worldwide; 2019; 590 Respondents; Business leaders including 100 C-level executives
Further information regarding this statistic can be found on page 100.
Source(s): HfS Research

Maturity of artificial intelligence (AI) implementation in organizations worldwide as of 2020, by sector

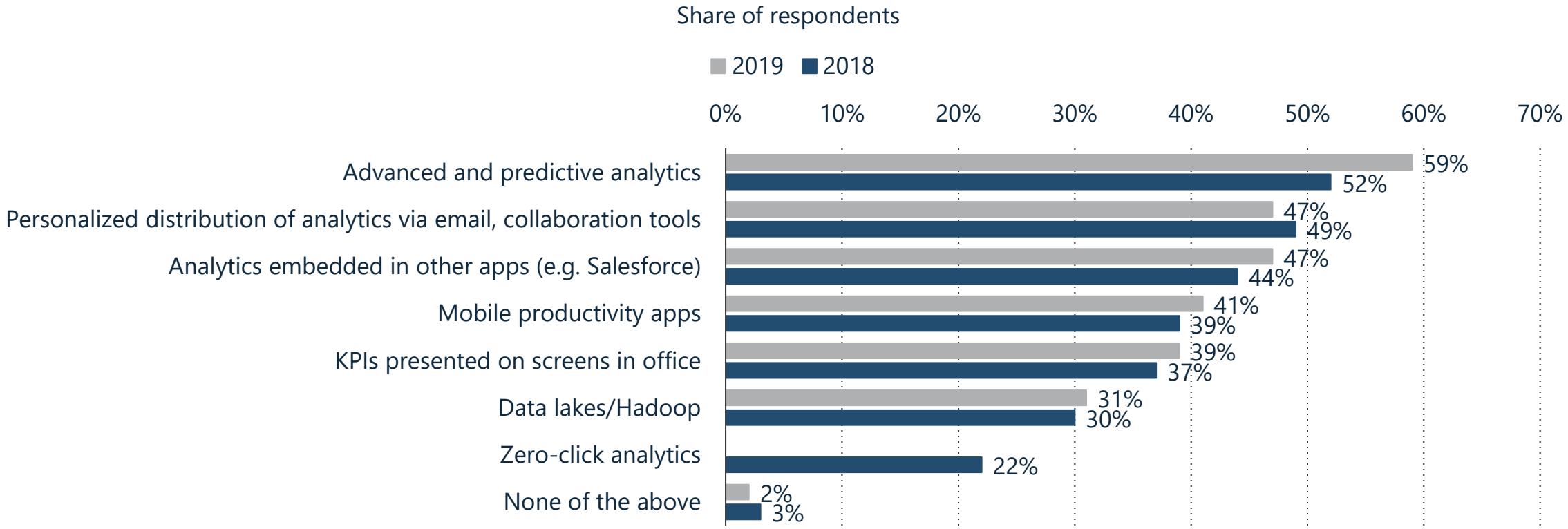
AI implementation maturity among AI implementers 2020, by sector



Note: Worldwide; March to April 2020; 954 Respondents; Organizations implementing AI
Further information regarding this statistic can be found on page 101.
Source(s): Capgemini

Tools being leveraged to provide greater insights and contextual intelligence into company operations worldwide in 2018 and 2019

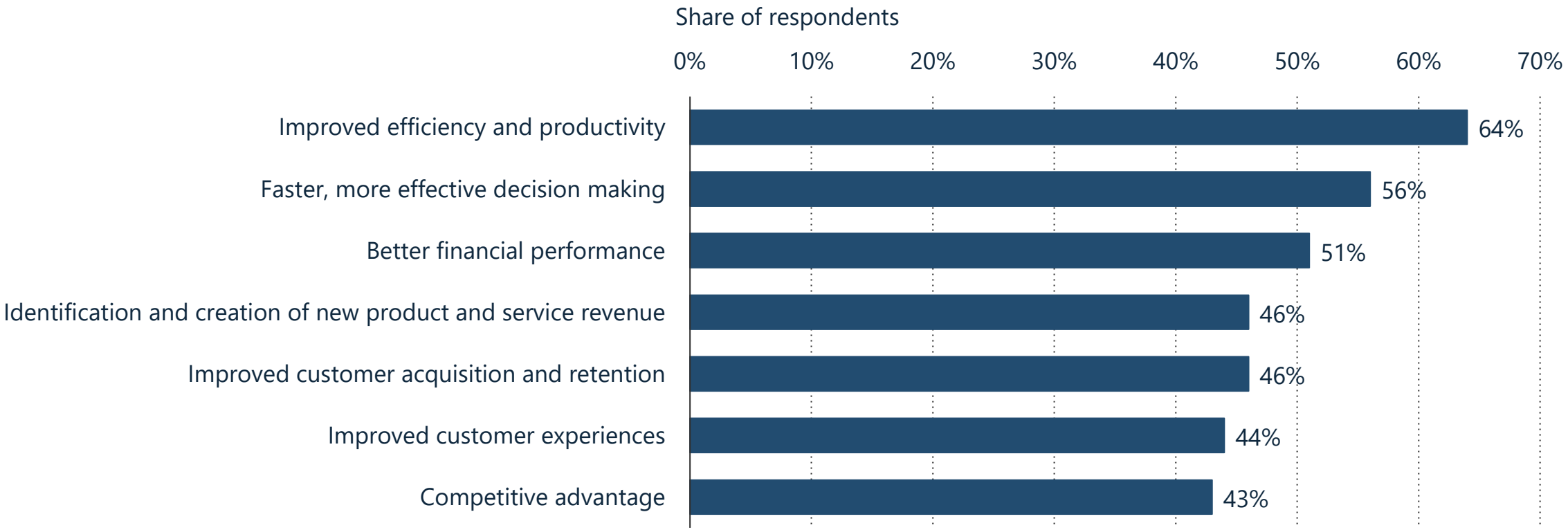
Tools providing insights and contextual intelligence for organizations worldwide 2018



Note: Worldwide; 2018 and 2019; 500 Respondents; business intelligence and analytics professionals
Further information regarding this statistic can be found on page 102.
Source(s): Forbes; MicroStrategy

Top benefits that companies realize through the use of data and analytics worldwide as of 2019

Benefits of effective data and analytics use in organizations worldwide 2019



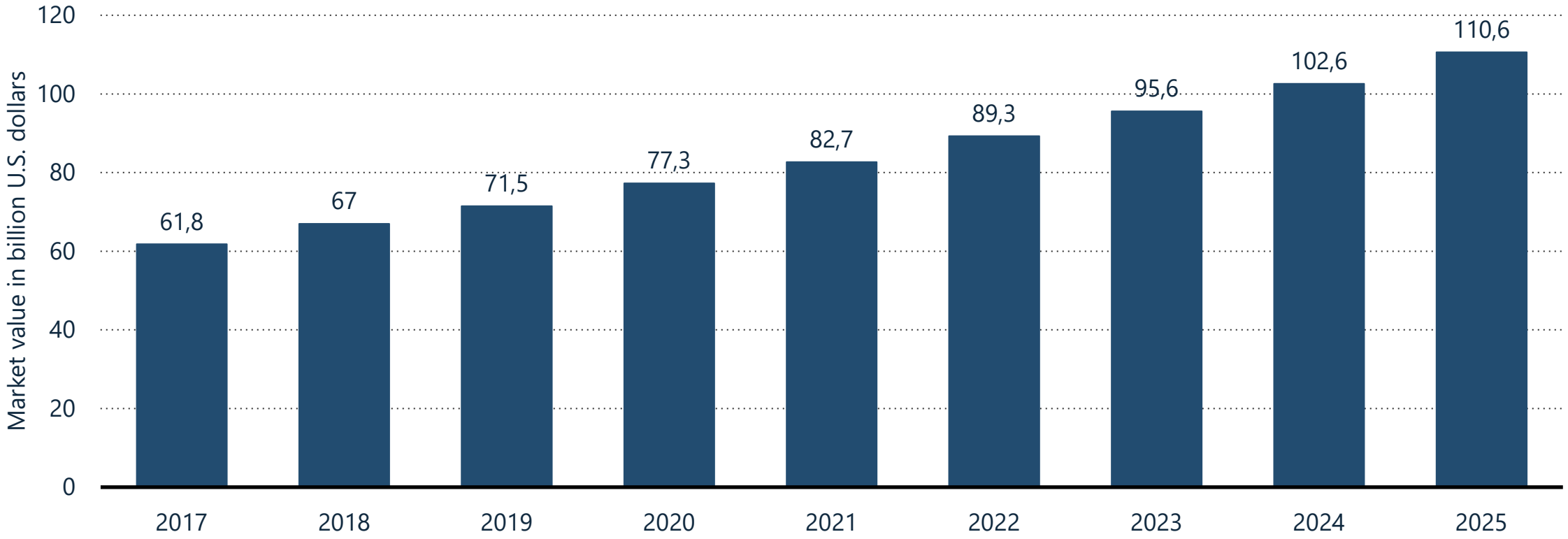
Note: Worldwide; 2019; 500 Respondents; business intelligence and analytics professionals
Further information regarding this statistic can be found on page 103.
Source(s): Forbes; MicroStrategy

Digital transformation

Industrial DX

Industrial Internet of Things market size worldwide from 2017 to 2025* (in billion U.S. dollars)

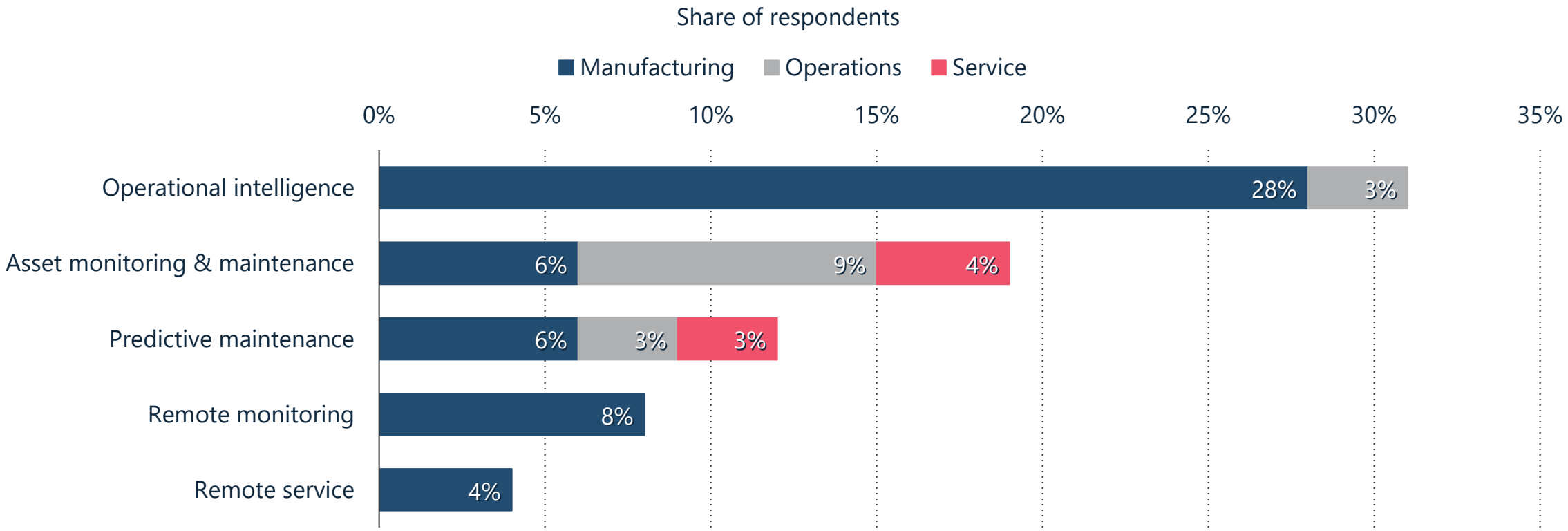
Industrial IoT - market size worldwide 2017-2025



Note: Worldwide; 2017 to 2020
Further information regarding this statistic can be found on page 104.
Source(s): MarketsandMarkets; Statista estimates

Industrial Internet of Things (IIoT) leading use cases worldwide as of 2019*

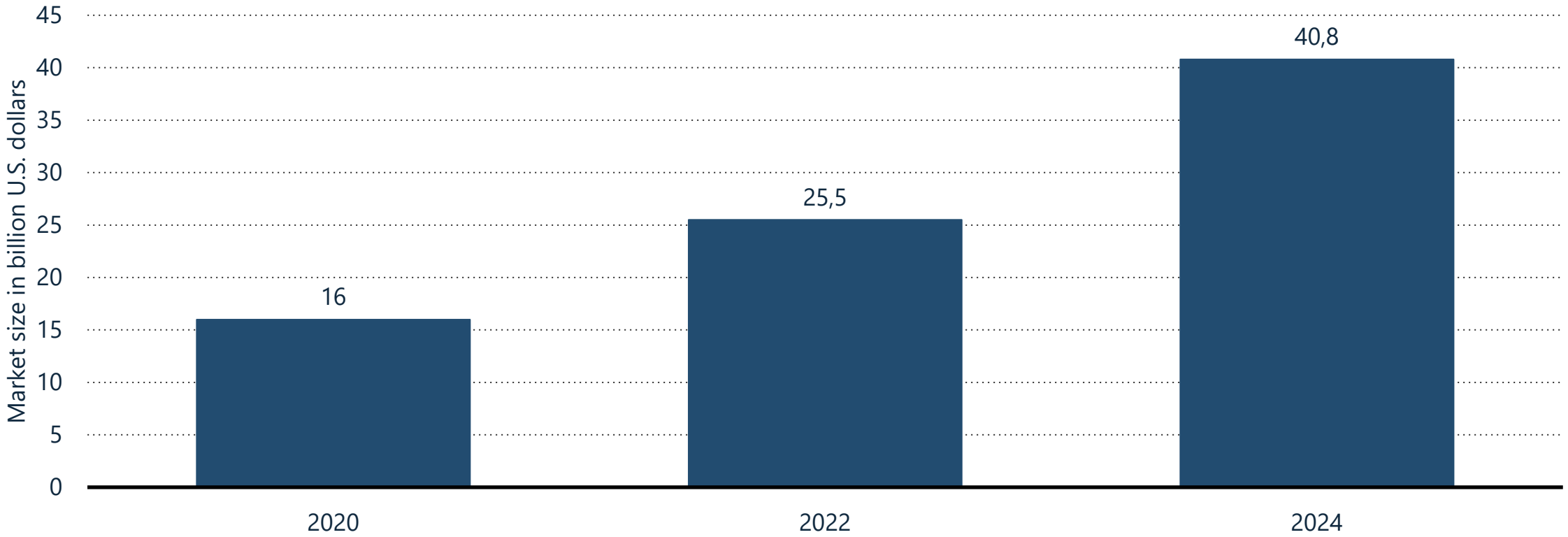
Industrial IoT: leading use cases worldwide 2019



Note: Worldwide; 2019
Further information regarding this statistic can be found on page 105.
Source(s): PTC

Global 3D printing products and services market size from 2020 to 2024 (in billion U.S. dollars)

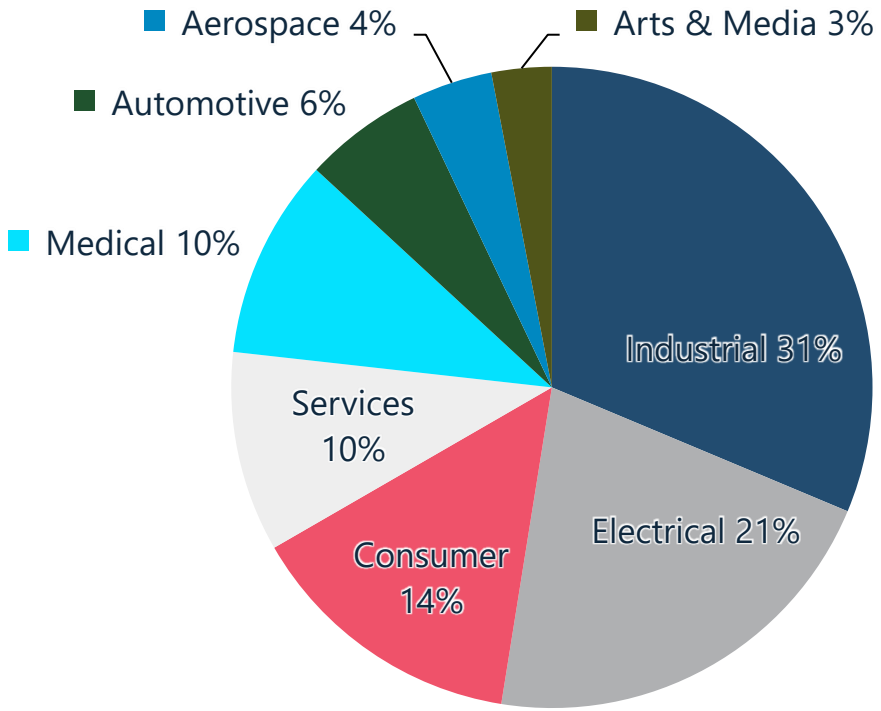
3D printing industry - worldwide market size 2020-2024



Note: Worldwide; as of February 2020
Further information regarding this statistic can be found on page 106.
Source(s): Wohlers Associates

Share of the global online 3D printing demand by industry/application in 2018

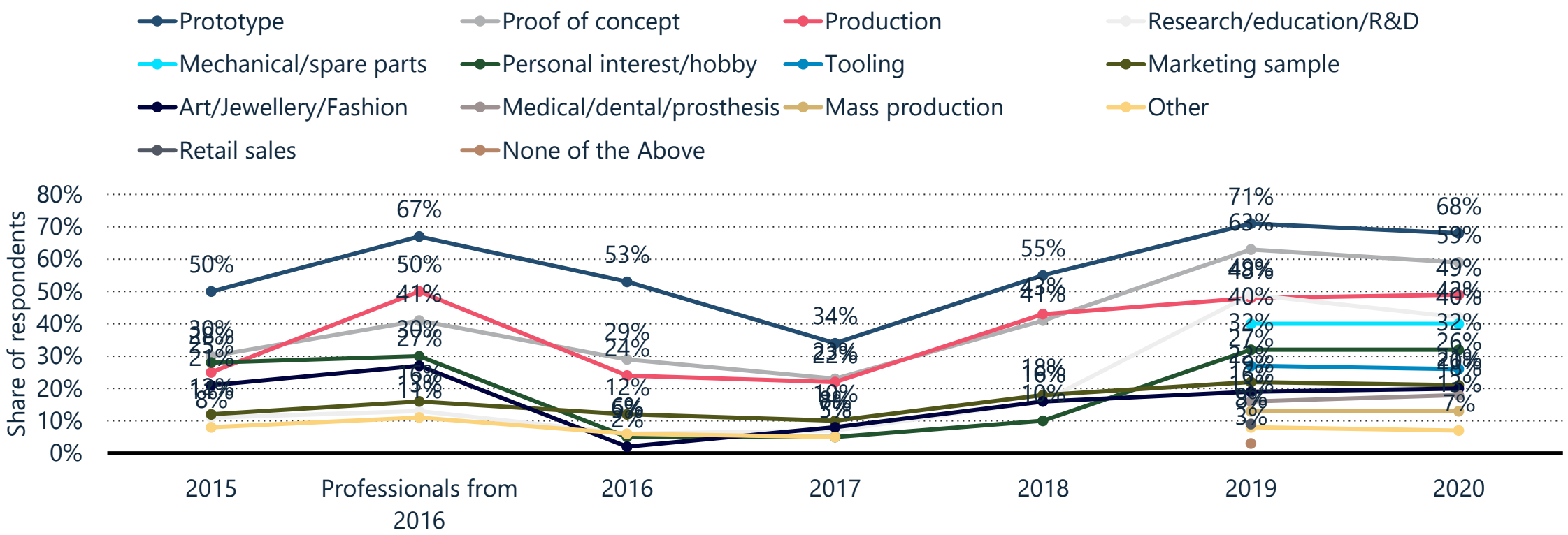
Online 3D printing demand share worldwide by industry/application 2018



Note: Worldwide; 2018
Further information regarding this statistic can be found on page 107.
Source(s): 3D Hubs

Leading uses of 3D printing from 2015 to 2020

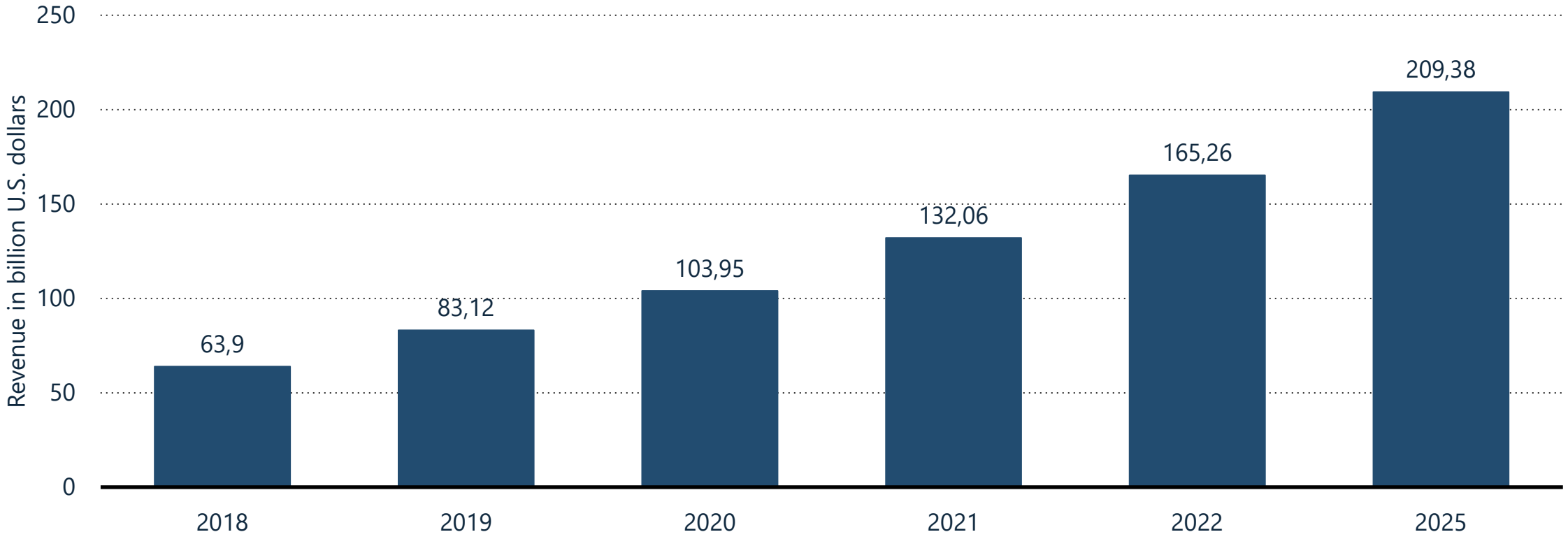
Uses of 3D printing 2015-2020



Note: Worldwide; 2015 to 2020; 18 years and older; 1,600; 3D printing users from 71 countries
Further information regarding this statistic can be found on page 108.
Source(s): Forbes; Sculpteo; Statista estimates

Size of the global market for industrial and non-industrial robots between 2018 and 2025 (in billion U.S. dollars)

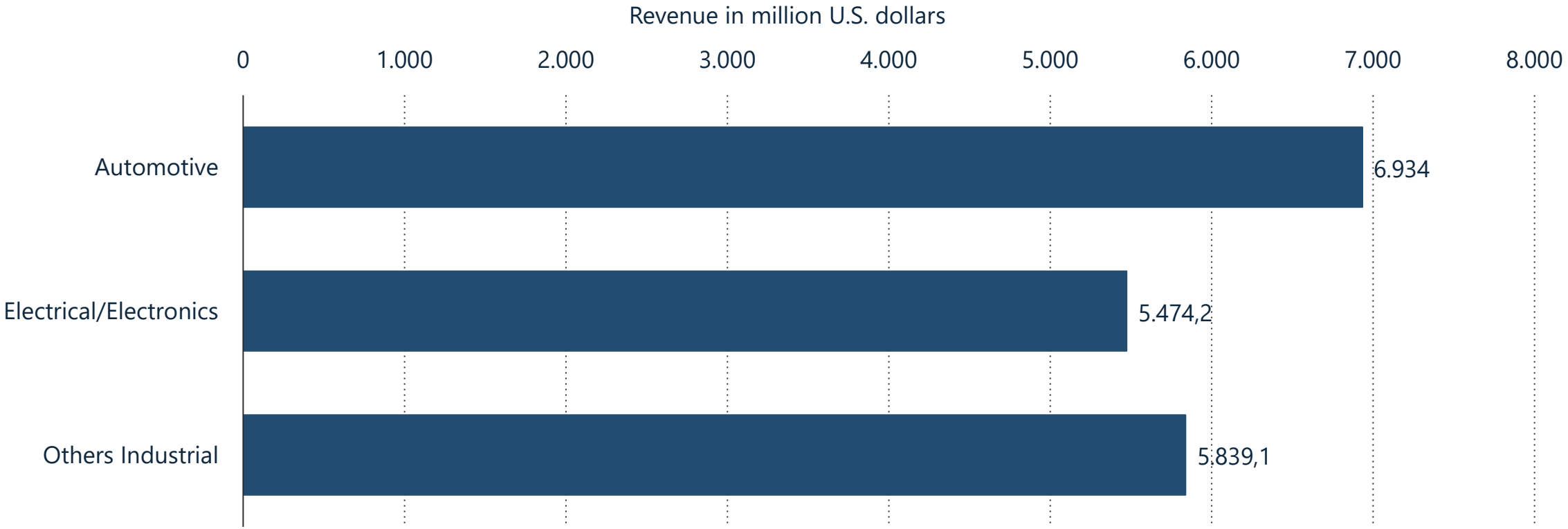
Global robotics market revenue 2018-2025



Note: Worldwide; as of Q3 2019
Further information regarding this statistic can be found on page 109.
Source(s): Tractica

Projected industrial robotics market size worldwide in 2025, by major segment (in million U.S. dollars)

Global industrial robotics market revenue by segment 2025



Note: Worldwide; as of Q3 2019
Further information regarding this statistic can be found on page 110.
Source(s): Tractica

Digital transformation

References

Digital transformation market revenue worldwide from 2017 to 2023 (in trillion U.S. dollars)

Digital transformation market size worldwide 2017-2023

Source and methodology information

Source(s)	IDC; Statista estimates
Conducted by	IDC; Statista estimates
Survey period	2017 to 2019
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	IDC; Statista
Publication date	May 2020
Original source	idc.com
Notes:	**Forecast 2018 figure calculated by Statista based on 2019 spending and annual growth rate provided by the source.*

Description

The graph shows the global digital transformation market revenue from 2017 to 2023. By 2023, the spending on the technologies and services that enable digital transformation worldwide is expected to amount to 2.3 trillion U.S. dollars.

Back to statistic

Digital transformation market share worldwide in 2019, by region

Share of digital transformation market worldwide 2019, by region

Source and methodology information

Source(s)	IDC
Conducted by	IDC
Survey period	2019
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	IDC
Publication date	October 2019
Original source	idc.com
Notes:	*n.a.*

Description

The statistic shows the global digital transformation market share in 2019, sorted by region. It is expected that United States will spend the most on digital transformation, accounting for 34.3 percent of the entire market.

Back to statistic

Nominal GDP driven by digitally transformed and other enterprises worldwide from 2018 to 2023 (in trillion U.S. dollars)

Nominal GDP driven by digitally transformed and other enterprises worldwide 2018-2023

Source and methodology information

Source(s)	IDC
Conducted by	IDC
Survey period	2018 to 2023
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	IDC
Publication date	October 2019
Original source	IDC FutureScape: Worldwide IT Industry 2020 Predictions, page 4
Notes:	**2023 is extrapolated from the model`s 2022 end year.*

Description

While in 2018, digitally transformed enterprises accounted for 13.5 trillion U.S. dollars of the global nominal GDP, in 2023 they are forecast to account for 53.3 trillion U.S. dollars, more than half of the overall nominal GDP. This signals that digital supremacy in the global economy is near. Digital transformation: benefits and necessity Among many other benefits, digital transformation is essential for helping businesses to create better customer experiences as well as improve their process efficiency through automation . Digitally transformed enterprises are equipped to drive new revenue and stay ahead of the competition. The difficult economic situation brought about by the global coronavirus (COVID-19) pandemic, however, has made digital transformation a necessity rather something nice to have - leading DX activities has become CIOs` top task to help business preserve through the COVID disruption. Digital transformation challenges Despite evidence of widespread benefits through digital transformation, its implementation is not without challenges. Businesses worldwide cite skill gaps and cultural differences as major challenges in their pursuit of digital transformation .A lack of clarity on transformation strategy and insufficient alignment across organizational departments are top reasons as to why some businesses stall momentum in their digital transformation efforts .

Back to statistic

Country-level digital competitiveness rankings worldwide as of 2019

Digital competitiveness rankings by country worldwide 2019

Source and methodology information

Source(s)	International Institute for Management Development
Conducted by	International Institute for Management Development
Survey period	2019
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	International Institute for Management Development
Publication date	September 2019
Original source	IMD World Digital Competitivness Ranking 2019, pages 26-27
Notes:	**According to the IMD, World Digital Competitiveness ranking "analyses and ranks countries' ability to adopt and explore digital technologies leading to transformation in government practices, business models and society in general." Digital competitiveness is assessed based on three major criteria: [...]*

Description

As of 2019, the United States ranked as the most digitally competitive country in the world. Digital competitiveness rankings aim to analyze a country's ability to adopt digital technologies and implement these technologies within enterprises and government organizations. Many Scandinavian countries ranked high on the list, with Denmark, Sweden, and Norway all placing in the top ten.

Back to statistic

Global companies' level of digital maturity as of 2018, by vertical

Digital frontier gap worldwide in 2018, by industry

Source and methodology information

Source(s)	McKinsey
Conducted by	McKinsey
Survey period	2018
Region(s)	Worldwide
Number of respondents	1,600
Age group	*n.a.*
Special characteristics	companies
Published by	McKinsey
Publication date	May 2019
Original source	Twenty-five years of digitization: Ten insights into how to play it right, page 2
Notes:	*n.a.*

Description

According to a study conducted by McKinsey Global Institute, the digital maturity across ICT-using sectors was still relatively low by 2018. On average, companies across verticals have reached just over 24 percent of their full digital potential in their ICT sector. The travel industry was the forerunner, having reached 51 percent of the digital frontier.

Back to statistic

Priorities for IT technology initiatives in companies worldwide as of 2019*

Priorities for IT technology initiatives 2019

Source and methodology information

Source(s)	Flexera Software
Conducted by	Flexera Software
Survey period	July 2019
Region(s)	Worldwide
Number of respondents	303
Age group	*n.a.*
Special characteristics	Executives and high-level managers in IT with visibility into their organizations' overall IT budgets. Organizations with at least 2,000 employees.
Published by	Flexera Software
Publication date	October 2019
Original source	Flexera 2020 State of Tech Spend Report, page 11
Notes:	**Multiple answers were possible*

Description

This statistic shows the top priorities for IT technology initiatives in global companies in 2019. Respondents were asked to rank the tech initiatives according to priority. Digital transformation and cybersecurity took the first and second spot with 54 and 49 percent respectively, proving to be the most important initiatives.

Back to statistic

Digital Transformation spending growth forecast worldwide by sector in 2020, pre and post COVID-19

Pre and post COVID-19 digital transformation spending growth worldwide 2020

Source and methodology information

Source(s)	IDC
Conducted by	IDC
Survey period	2020
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	IDC
Publication date	May 2020
Original source	idc.com
Notes:	*n.a.*

Description

Worldwide spending on digital transformation (DX) technologies and services is expected to increase by 10.4 percent in 2020 to 1.3 trillion U.S. dollars, despite the challenges presented by the COVID-19 pandemic. Across different sectors, DX spending will see compromised yet still strong growth, ranging from eight to 13.8 percent. Digital transformation Digital transformation (DX) can be defined as the integration of digital technologies in all areas of a business that lead to improved operational processes as well as more value being delivered to customers. DX enables a more agile and intelligent way of doing business, making use of technologies such as advanced analytics and artificial intelligence (AI). The global digital transformation market has been growing rapidly in recent years and is forecast to be worth 2.3 trillion U.S. dollars by 2023. A global embrace of digital transformation amidst COVID-19 Most digital decision-makers worldwide believe the coronavirus (COVID-19) outbreak will accelerate the pace of digital transformation . Working from home is expected to be much more accepted in companies post COVID-19, as well as the use of communication and collaboration tools. In line with these changes, businesses are also looking to bolster employee digital experience as they seek to increase operational efficiency and transform existing business processes . The pandemic has resulted in businesses worldwide embracing digital transformation technologies and services, although some still predict that the digital economy may likely endure a long-term revenue loss like the overall economy .

Back to statistic

What will business be like after the Corona pandemic? What impact will it have on the digital industry, in your opinion?

COVID-19 impact on businesses and digital industry worldwide 2020

Source and methodology information

Source(s)	DMEXCO
Conducted by	DMEXCO
Survey period	2020
Region(s)	Worldwide
Number of respondents	DACH (n=527), International (n=305)
Age group	*n.a.*
Special characteristics	digital decision-makers
Published by	DMEXCO
Publication date	April 2020
Original source	dmexco.com
Notes:	*n.a.*

Description

Most surveyed international digital decision-makers are of the opinion that the COVID-19 outbreak will accelerate the pace of digital transformation. The majority of respondents also agree with the statements that remote working and the use of collaboration tools will be more common as a result of the outbreak.

Back to statistic

How will the coronavirus pandemic affect the overall economic situation of the digital economy?

COVID-19 impact on digital economy worldwide 2020

Source and methodology information

Source(s)	DMEXCO
Conducted by	DMEXCO
Survey period	2020
Region(s)	Worldwide
Number of respondents	DACH (n=527), International (n=305)
Age group	*n.a.*
Special characteristics	digital decision-makers
Published by	DMEXCO
Publication date	April 2020
Original source	dmexco.com
Notes:	*n.a.*

Description

Opinions about coronavirus' impact on the digital economy are mixed: 33 percent of surveyed international digital decision makers believed that the digital economy will benefit after the pandemic, whereas 24 percent thought that the digital economy will have to endure long-term revenue loss like the overall economy.

Back to statistic

How has the pandemic impacted the way your organization is prioritizing the following business initiatives? (Showing increased priority)

The impact of the COVID-19 pandemic on organizations' business priorities 2020

Source and methodology information

Source(s)	IDG Research Services
Conducted by	CIO
Survey period	April 2020
Region(s)	Worldwide
Number of respondents	414
Age group	*n.a.*
Special characteristics	CIOs
Published by	IDG Research Services
Publication date	April 2020
Original source	CIO COVID-19 Impact Study, page 6
Notes:	*n.a.*

Description

Increasing operations efficiency, transforming existing business processes, and optimizing employee digital experience are the most important business initiatives amid the coronavirus (COVID-19) pandemic in 2020, with 62, 56 and 52 percent of CIO respondents reporting increased priority for these three business initiatives.

Back to statistic

Given the current state of the business what are the CEO's top three priorities for you to help business preserve through the current disruption?

CEOs' top priorities for CIOs to preserve business amid COVID-19 2020

Source and methodology information

Source(s)	IDG Research Services; CIO
Conducted by	CIO
Survey period	April 2020
Region(s)	Worldwide
Number of respondents	414
Age group	*n.a.*
Special characteristics	CIOs
Published by	IDG Research Services
Publication date	April 2020
Original source	CIO COVID-19 Impact Study, page 5
Notes:	*n.a.*

Description

According to a CIO survey, when asked about the top three priorities to help their businesses preserve amid the COVID-19 pandemic, 37 percent of the CIO respondents put digital transformation activities and remote work experiences on top of their list. As the pandemic prompted widespread practice of social distancing, remote working becomes the new reality of many businesses.

Back to statistic

The impact of coronavirus (COVID-19) on increased demand for tech innovation accelerators as of 2020*

Demand for innovation accelerators post-COVID-19 in 2020

Source and methodology information

Source(s)	IDC
Conducted by	IDC
Survey period	2020
Region(s)	Worldwide
Number of respondents	908
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	IDC
Publication date	May 2020
Original source	idc.com
Notes:	**Share of respondents who selected "Significantly or moderately increased demand"*

Description

This statistic shows the impact of COVID-19 on demand for innovation accelerators like AI. According to the survey, 46.4 percent of respondents claimed that their organizations' demand for advanced analytics increased significantly or moderately.

Back to statistic

Key objectives of digital business strategy in organizations worldwide as of 2019

Objectives for digital transformation in organizations 2019

Source and methodology information

Source(s)	IDG Research Services
Conducted by	IDG Research Services
Survey period	2019
Region(s)	Worldwide
Number of respondents	702
Age group	*n.a.*
Special characteristics	survey respondents are within organizations that have plans to adopt/or already launched a "digital first" approach
Published by	IDG Research Services
Publication date	May 2019
Original source	2019 Digital Business Research, page 4
Notes:	*n.a.*

Description

The graph shows the key objectives of digital transformation in organizations worldwide as of 2019. During the survey period, creating better customer experience was a key objective for an organization's digital business strategy according to 67 percent of respondents.

Back to statistic

Priorities driving digital information efforts in companies worldwide as of 2020

Priorities driving digital transformation efforts in organizations worldwide 2020

Source and methodology information

Source(s)	Flexera Software
Conducted by	Flexera Software
Survey period	2020
Region(s)	Worldwide
Number of respondents	302
Age group	*n.a.*
Special characteristics	Majority of respondents are C-suite executives (CIOs and senior IT executives) from organizations with at least 2,000 employees
Published by	Flexera Software
Publication date	March 2020
Original source	Flexera 2020 CIO Priorities Report, page 8
Notes:	*n.a.*

Description

According to a 2020 global CIO survey, 69 percent of respondents cited improving customer experience as a very important factor in driving their digital transformation efforts. Improving existing and new products/services are also behind the efforts pushing for companies' digital transformation.

Back to statistic

Challenges encountered as a result of digital transformations in global organizations as of 2020

Obstacles encountered in digital transformation worldwide 2020

Source and methodology information

Source(s)	McKinsey
Conducted by	McKinsey
Survey period	2020
Region(s)	Worldwide
Number of respondents	283*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	McKinsey
Publication date	February 2020
Original source	mckinsey.com
Notes:	**Question was asked only of respondents who said their organizations had pursued digitization in past two years.*

Description

Skills gaps and cultural differences as a result of digital transformation are cited as leading challenges for organizations that have pursued digitalization in the past two years, as of 2020. Organizations need to make extra adjustments in order to face the changes brought about by the implementation of digital initiatives.

Back to statistic

Where companies have stalled in their digital progress

Stalling points of digital transformation initiatives in global companies 2020

Source and methodology information

Source(s)	McKinsey
Conducted by	McKinsey
Survey period	2020
Region(s)	Worldwide
Number of respondents	1,256
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	McKinsey
Publication date	March 2020
Original source	mckinsey.com
Notes:	*n.a.*

Description

Digital transformation is not exactly smooth for most companies: a total of 62 percent of respondents stated that their organizations' digital transformation initiatives have lost momentum at some point during the process. Most of the respondents - 38 percent - claimed that the digital progress in their companies have stalled during scaling.

Back to statistic

Factors that stalled digital transformation initiatives in global companies as of 2020

Primary reasons that stalled momentum for digital transformation worldwide 2020

Source and methodology information

Source(s)	McKinsey
Conducted by	McKinsey
Survey period	2020
Region(s)	Worldwide
Number of respondents	731
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	McKinsey
Publication date	March 2020
Original source	mckinsey.com
Notes:	*Figures do not sum to 100% because of rounding.*

Description

A number of reasons could lead to the lost of momentum of digital transformation initiatives in global companies, as of 2020. Most of these factors, such as a lack of clarity on transformation strategy, are within companies' near- to medium-term control. Some other factors like significant distruption in market and/or business environment are beyond organizations' control.

Back to statistic

Actions taken in global organizations after digital transformations' loss of momentum or failure to scale, as of 2020

Interventions to jump-start stalled digital transformations worldwide 2020

Source and methodology information

Source(s)	McKinsey
Conducted by	McKinsey
Survey period	2020
Region(s)	Worldwide
Number of respondents	731*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	McKinsey
Publication date	March 2020
Original source	mckinsey.com
Notes:	**Question was asked only of respondents who said their companies pursued a digital transformation or major digital investment that has lost momentum or failed to scale in past 3 years and who cited a reason for loss of momentum or failure to scale.*

Description

Certain interventions are more often adopted than others at jump-starting stalled digital transformations: hiring new transformation leaders is an action taken by 30 percent of respondents, when acquiring another company by only six percent.

Back to statistic

Management factors affecting the odds of digital transformation worldwide as of 2018

Key themes that affect success rate of digital transformation 2018

Source and methodology information

Source(s)	McKinsey
Conducted by	McKinsey
Survey period	2018
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	McKinsey
Publication date	May 2019
Original source	Twenty-five years of digitization: Ten insights into how to play it right, page 8
Notes:	*n.a.*

Description

According to a study conducted by McKinsey Global Institute, five key management themes are jointly critical to the success of digital transformation: mobilization, talent management, transparency, commitment and agility. The combination of all five aspects would increase companies' success rate of digital transformation initiatives by 45 percent and reduce failure by 11 percent.

Back to statistic

Reasons that global organizations have avoided stalls when undertaking digital transformations, as of 2020

Main reasons for avoiding stall during digital transformation 2020

Source and methodology information

Source(s)	McKinsey
Conducted by	McKinsey
Survey period	2020
Region(s)	Worldwide
Number of respondents	302*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	McKinsey
Publication date	March 2020
Original source	mckinsey.com
Notes:	**Question asked only of respondents who said their organizations' digital transformations or major digital investments did not stall or fail to scale. **For example, the market outperformed in an area where the organization had placed its bets, or there was a significant economic upturn.*

Description

The most important reasons behind the smooth implementation of digital transformation initiatives include strong commitment to the transformation and clarity on the transformation`s strategy, with 24 and 19 percent of survey respondents reporting them as the success factors.

Back to statistic

How would you describe your organization's progress with respect to workforce transformation?*

Implemention level of workforce digital transformation in organizations 2019

Source and methodology information

Source(s)	IDG Research Services
Conducted by	IDG Research Services
Survey period	2019
Region(s)	Worldwide
Number of respondents	702
Age group	*n.a.*
Special characteristics	survey respondents are within organizations that have plans to adopt/or already launched a "digital first" approach
Published by	IDG Research Services
Publication date	May 2019
Original source	2019 Digital Business Research, page 8
Notes:	**Workforce transformation is defined by the source as: "A strategy to change internal processes, departmental structures, incentives, skills, culture and/or behaviors."*

Description

Thirty percent of surveyed global IT executives reported the successful digital transformation of their workforce in the development department as of 2019. Overall, 37 percent of respondents reported that their organization has implemented a workforce transformation.

Back to statistic

Digital transformation (DX) roles' share of information and communication technology (ICT) full-time employments worldwide in 2019 and 2023

DX roles share of ICT full-time employment worldwide in 2019 and 2023

Source and methodology information

Source(s)	IDC
Conducted by	IDC
Survey period	2019
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	IDC
Publication date	December 2019
Original source	idc.com
Notes:	**Forecast*

Description

Digital transformation (DX) roles made up for 40 percent of overall ICT full-time employment worldwide in 2019. This figure is projected to increase to 52 percent by 2023. The responsibilities of DX-related job roles include the extraction and development of the value and utility of information in organizations, among others. The worldwide full-time employment in the ICT sector is projected to reach 62 million in 2023.

Back to statistic

Share of workforce that have moved/will move into new roles due to technological impact in organizations worldwide, as of end 2018

Technology's impact on workforce within organizations worldwide 2018

Source and methodology information

Source(s)	Accenture
Conducted by	Accenture
Survey period	October through December 2018
Region(s)	Worldwide
Number of respondents	6672
Age group	*n.a.*
Special characteristics	Business and IT executives
Published by	Accenture
Publication date	February 2019
Original source	Accenture Technology Vision 2019, page 53
Notes:	*n.a.*

Description

As of the end of 2018, 17 percent of the surveyed business and IT executives reported that more than 60 percent of their workforce had moved into new roles due to the impact of technology. In three years, however, respondents expect that a higher percentage of workforce will be impacted by technology.

Back to statistic

Predicted workforce changes from artificial intelligence (AI) adoption in organizations worldwide from 2020-2023, by industry

Worldwide workforce changes from adopting AI in companies 2020-2023, by industry

Source and methodology information

Source(s)	McKinsey
Conducted by	McKinsey
Survey period	March 26 to April 5, 2019
Region(s)	Worldwide
Number of respondents	1,872
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	McKinsey
Publication date	November 2019
Original source	Global AI Survey: AI proves its worth, but few scale impact, page 10
Notes:	**Little or no change refers to a decrease or increase in the workforce of less than or equal to 2%.*

Description

Automotive and assembly, and telecom industries worldwide are predicted to undergo the biggest workforce cuts in the next three years due to the adoption of artificial intelligence (AI) technologies, according to a global AI survey. While infrastructure, professional services and high tech industries are more inclined to increase their workforce sizes with the adoption of AI technologies during the same time period.

Back to statistic

Leading reasons for using AI in their organization according to global business and HR leaders as of 2020

Global business and HR leaders primary reason for using AI in their organization 2020

Source and methodology information

Source(s)	Deloitte
Conducted by	Deloitte
Survey period	2020
Region(s)	Worldwide
Number of respondents	8,949
Age group	*n.a.*
Special characteristics	business and HR leaders
Published by	Deloitte
Publication date	May 2020
Original source	2020 Deloitte Global Human Capital Trends, page 56
Notes:	*Question: What is the primary reason your organization uses AI? No exact survey date, year stated only.*

Description

As of a 2020 report, 60 percent of business and HR leaders surveyed worldwide claimed that the primary reason for the use of artificial intelligence (AI) in their organization was to assist workers, with a further 12 percent stating that AI is used to replace workers. Of those surveyed, 24 percent stated that their organizations did not use AI.

Back to statistic

Leading uses of AI to assist workers in their organization according to global business and HR leaders as of 2020

Global business and HR leaders use of AI to assist workers in their organization 2020

Source and methodology information

Source(s)	Deloitte
Conducted by	Deloitte
Survey period	2020
Region(s)	Worldwide
Number of respondents	5,369
Age group	*n.a.*
Special characteristics	business and HR leaders
Published by	Deloitte
Publication date	May 2020
Original source	2020 Deloitte Global Human Capital Trends, page 57
Notes:	*Question: How is AI used to assist workers in your organization? Figures represent the percentage of respondents who ranked each activity as the most prevalent of the three. Only respondents who reported that their organizations used AI primarily to assist workers (60 percent of 8,949) answered this [...]*

Description

As of a 2020 report, of the business and HR leaders surveyed worldwide who use artificial intelligence (AI) to assist workers in their organization, 58 percent of these claimed that the main use of AI in this context was to improve consistency and quality. A further 26 percent stated that AI is used to assist workers through improving productivity, with the remaining 16 percent using AI technology to improve insights.

Back to statistic

Company policy on remote work in companies with digital output in 2020, by country

Company policy on remote work with digital output by country 2020

Source and methodology information

Source(s)	GitLab
Conducted by	Savanta
Survey period	January 30, 2020 to February 10, 2020
Region(s)	Australia, Canada, United Kingdom, United States
Number of respondents	3000+
Age group	21 years and older
Special characteristics	Adult professionals who work remotely or have the option to work remotely and are in roles with digital output
Published by	GitLab
Publication date	March 2020
Original source	The Remote Work Report 2020, page 8
Notes:	*n.a.*

Description

This statistic shows the company policy on remote work in companies with digital output by country in 2020. According to the survey, 37 percent of U.S. respondents work in hybrid-remote company where part of the team works in an office, the other part works remotely.

Back to statistic

Total information communication technology (ICT) market spending worldwide from 2016 to 2023 (in trillion U.S. dollars)

Worldwide ICT spending 2016-2023

Source and methodology information

Source(s)	IDC
Conducted by	IDC
Survey period	2016 to 2019
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	IDC
Publication date	July 2020
Original source	idc.com
Notes:	**Forecast Released date is date of data access.*

Description

This statistic shows the total ICT spending worldwide from 2016 to 2023. Global ICT spending reached about 4.92 trillion U.S. dollars in 2019 and is expected to grow to 5.82 trillion U.S. dollars by 2023.

Back to statistic

Total information communication technology (ICT) market spending worldwide from 2017 to 2020, by category (in trillion U.S. dollars)

Worldwide ICT spending 2017-2020, by category

Source and methodology information

Source(s)	IDC
Conducted by	IDC
Survey period	2017 to 2019
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	IDC
Publication date	July 2020
Original source	idc.com
Notes:	**Forecast Released date is date of data access.*

Description

This statistic shows the ICT spending worldwide from 2017 to 2020, by segment. ICT spending for telecommunications reached about 1.35 trillion U.S. dollars in 2019, and is forecast to amount to 1.34 trillion in 2020 - a slight decline due to the COVID-19 pandemic.

Back to statistic

Cloud services market spending by segment worldwide from 2015 to 2020 (in billion U.S. dollars)*

Cloud computing worldwide revenue 2015-2020, by segment

Source and methodology information

Source(s)	ITCandor
Conducted by	ITCandor
Survey period	2015 to 2020
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	ITCandor
Publication date	June 2020
Original source	itcandor.com
Notes:	**The source did not publish data for every year*

Description

In 2019, Software as a Service (SaaS) represented the largest segment of the global cloud computing market, responsible for 125.5 billion U.S. dollars in revenues. Overall, the global cloud computing services market spendings amounte to 253 billion U.S. dollars.

Back to statistic

Cognitive and artificial intelligence (AI) systems market revenue worldwide from 2015 to 2024 (in billion U.S. dollars)

Artificial Intelligence and cognitive systems revenues worldwide 2015-2024

Source and methodology information

Source(s)	IDC
Conducted by	IDC
Survey period	2016 to 2020
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	IDC
Publication date	August 2020
Original source	idc.com
Notes:	*The leading use cases of cognitive and AI systems include quality management investigation and recommendation systems; diagnosis and treatment systems; automated customer service agents; automated threat intelligence and prevention systems; and fraud analysis and investigation.*

Description

The statistic shows revenues from the cognitive and artificial intelligence (AI) systems market worldwide, from 2016 to 2024. In 2020, revenues from the cognitive and AI systems market were expected to reach 50.1 billion U.S. dollars.

Back to statistic

Robotic/intelligent process automation (RPA/IPA) and artificial intelligence (AI) automation spending worldwide from 2016 to 2023, by segment (in billion U.S. dollars)

Spending on automation and AI business operations worldwide 2016-2023, by segment

Source and methodology information

Source(s)	HfS Research
Conducted by	HfS Research
Survey period	2017 to 2019
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	HfS Research
Publication date	January 2020
Original source	horsesforsources.com
Notes:	** forecast The source defines the three categories as follows: " RPA Definition : RPA describes a software development toolkit that allows non-engineers to quickly create software robots (known commonly as "bots") to automate rules-driven business processes... Intelligent Process Automation Definiti [...]*

Description

This statistic shows the global spending on automation and artificial intelligence (AI) business operations from 2016 to 2021. It is estimated that, in 2020, 9.6 billion U.S. dollars will be spent on intelligent process automation. In this context, artificial intelligence is autonomous decision-making by a system or systems designed to simulate human thought processes. The process involves self-learning systems improved through data mining, pattern recognition, and natural language processing.

Back to statistic

Prognosis of worldwide spending on the Internet of Things (IoT) from 2018 to 2023 (in billion U.S. dollars)

Internet of Things (IoT) spending worldwide 2023

Source and methodology information

Source(s)	IDC
Conducted by	IDC
Survey period	2018 to 2020
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	IDC
Publication date	June 2020
Original source	idc.com
Notes:	** Forecast. For 2022 the source states the following "Worldwide IoT spending is forecast to pass the $1 trillion mark in 2022". Data for 2019 was calculated by Statista based on the growth rate provided by the source.*

Description

The global spending on the Internet of Things (IoT) is forecast to reach 1.1 trillion U.S. dollars in 2022. New technologies such as 5G is expected to drive the market growth in the coming years.

Back to statistic

Big data and analytics software revenue worldwide from 2011 to 2018 (in billion U.S. dollars)*

Big data and analytics software market worldwide 2011-2018

Source and methodology information

Source(s)	IDC; SAS Institute
Conducted by	IDC
Survey period	2011 to 2018
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	SAS Institute
Publication date	October 2019
Original source	Worldwide Big Data and Analytics Software 2018 Market Shares, page 3
Notes:	**The market was named as the business analytics software market prior to the 2016 report. The addition of continuous analytics software, cognitive/AI software platforms, and search systems market segments led to the change in the market name.*

Description

This statistic shows big data and analytics software revenue worldwide from 2011 to 2018. In 2018, the worldwide revenue from business analytics software amounted to 60.66 billion U.S. dollars.

Back to statistic

Adoption rate of emerging technologies in organizations worldwide as of 2020, by scale

Implementation of emerging technologies in companies worldwide 2020

Source and methodology information

Source(s)	KPMG; Harvey Nash
Conducted by	KPMG; Harvey Nash
Survey period	December 2019 to March 2020 / May to August 2020
Region(s)	Worldwide
Number of respondents	2,791 / 1,428
Age group	*n.a.*
Special characteristics	CIOs and IT leaders across 83 countries
Published by	KPMG; Harvey Nash
Publication date	September 2020
Original source	Harvey Nash/KPMG CIO Survey 2020, page 14
Notes:	*n.a.*

Description

As of 2020, 25 percent of surveyed organizations worldwide reported the adoption of distributed cloud technology on a large scale, with 29 percent using distributed cloud solutions on a small scale. What is cloud computing? Cloud computing refers to the use of networks of remote servers accessed over the internet to store, manage, and process data. It offers customers access to a wide range of technologies while lowering costs and reducing the need for technical expertise. The cloud service market is divided into three primary service models encompassing infrastructure, platforms, and software. Customers are able to choose between private, public, or hybrid cloud deployment depending on their business needs and security concerns. SaaS: the most widely adopted cloud solutions In line with increases in companies` adoption of cloud computing technologies, the worldwide revenue generated from these technologies has increased rapidly in recent years. Software as a Service (SaaS) is the largest segment of the global cloud computing market with revenues of over 100 billion U.S. dollars as of 2019. It is the most widely adopted cloud technology , being now deployed by the majority of organizations globally. Popular applications of SaaS include customer relationship management and enterprise resource planning software.

Back to statistic

Planned adoption of technologies in organizations worldwide as of 2020

Adoption of technologies in companies worldwide 2020

Source and methodology information

Source(s)	Flexera Software
Conducted by	Flexera Software
Survey period	2020
Region(s)	Worldwide
Number of respondents	302
Age group	*n.a.*
Special characteristics	Majority of respondents are C-suite executives (CIOs and senior IT executives) from organizations with at least 2,000 employees
Published by	Flexera Software
Publication date	March 2020
Original source	Flexera 2020 CIO Priorities Report, page 10
Notes:	*n.a.*

Description

According to a global CIO survey, public cloud adoption is a major technological initiative for many companies in 2020, with 79 percent of surveyed organizations planning to make heavy to moderate adoption of the cloud technology. AI/machine learning and other cloud technologies are also on top of the list.

Back to statistic

What are your organization's plans for utilizing computing infrastructure or applications via the cloud?

Trends in enterprise utilization of cloud infrastructure and applications 2011-2020

Source and methodology information

Source(s)	IDG Research Services
Conducted by	IDG Research Services
Survey period	2020
Region(s)	Worldwide
Number of respondents	551
Age group	*n.a.*
Special characteristics	Are involved in the purchase process for cloud computing and their organization has, or plans to have, at least one application, or a portion of their infrastructure, in the cloud. 95 percent of respondents are from the United States.
Published by	IDG Research Services
Publication date	June 2020
Original source	idg.com
Notes:	*The source does not provide any information regarding missing percentage points to 100 percent.*

Description

This statistic shows the breakdown of current or future cloud application and infrastructure utilization among technology decision-makers from 2011 to 2020. In 2020, 81 percent of technology decision-makers indicated that their company already made use of at least one cloud application or relied on some cloud infrastructure.

Back to statistic

Enterprise cloud strategy worldwide from 2017 to 2020, by cloud type

Worldwide enterprise cloud strategy 2017-2020

Source and methodology information

Source(s)	RightScale; Flexera Software
Conducted by	RightScale; Flexera Software
Survey period	First quarter 2020
Region(s)	Worldwide
Number of respondents	554 Enterprise (more than 1,000 employees)
Age group	*n.a.*
Special characteristics	Technical professionals across a cross-section of organizations
Published by	RightScale; Flexera Software
Publication date	April 2020
Original source	2020 State of the Cloud Report, page 15
Notes:	*n.a.*

Description

This statistic shows enterprises' cloud computing strategy from 2017 to 2020. As of the first quarter of 2020, 87 percent of the enterprise respondents indicated that they have deployed hybrid cloud in their organizations.

Back to statistic

Types of cloud-based services used in organizations worldwide as of 2019

Cloud services used in business worldwide 2019, by deployment type

Source and methodology information

Source(s)	Veeam
Conducted by	Veeam
Survey period	2019
Region(s)	Worldwide
Number of respondents	1,575
Age group	*n.a.*
Special characteristics	senior business and IT business makers
Published by	Veeam
Publication date	June 2019
Original source	Cloud Data Management Report 2019, page 6
Notes:	*n.a.*

Description

The statistic shows the type of cloud-based services used in organizations worldwide as of 2019, by deployment type. During the survey period, 77 percent of respondents stated that SaaS was deployed in their organizations.

Back to statistic

Level of automation within the IT environment of organizations worldwide as of 2019

Global level of automation within IT environment 2019

Source and methodology information

Source(s)	451 Research
Conducted by	451 Research
Survey period	2019
Region(s)	Worldwide
Number of respondents	881
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	451 Research
Publication date	July 2019
Original source	451research.com
Notes:	*The question was phrased by the source as follows: "How would you describe the current level of automation in your organization's IT environment?"*

Description

Around five percent of respondents described the IT environment in their organizations as "highly automated", while another 38 percent described theirs as "mostly automated with some manual processes". Nevertheless, the IT environment in most organizations remains more manual than automated.

Back to statistic

Adoption rate of intelligent automation (IA) technologies in organizations worldwide in 2019*

Global adoption of intelligent automation (IA) technologies in organizations 2019

Source and methodology information

Source(s)	HfS Research
Conducted by	HfS Research ; KPMG
Survey period	2019
Region(s)	Worldwide
Number of respondents	590
Age group	*n.a.*
Special characteristics	Business leaders including 100 C-level executives
Published by	HfS Research
Publication date	April 2020
Original source	hfsresearch.com
Notes:	**The original question was phrased as follows: "What is the current state of adoption of the following intelligent automation (IA) technologies in your organization?"*

Description

Most organizations worldwide are moving towards using and scaling up intelligent automation (IA) technologies. 23 percent of respondents are scaling up and industrializing smart analytics.

Back to statistic

Maturity of artificial intelligence (AI) implementation in organizations worldwide as of 2020, by sector

AI implementation maturity among AI implementers 2020, by sector

Source and methodology information

Source(s)	Capgemini
Conducted by	Capgemini
Survey period	March to April 2020
Region(s)	Worldwide
Number of respondents	954
Age group	*n.a.*
Special characteristics	Organizations implementing AI
Published by	Capgemini
Publication date	July 2020
Original source	The AI-powered enterprise: Unlocking the potential of AI at scale, page 6
Notes:	*n.a.*

Description

The statistic shows the different stages of artificial intelligence (AI) adoption among organizations that had already implemented AI, as of 2020, by sector. As of that time, the life sciences sector displays the greatest share of companies that have adopted AI at scale, with 67 percent of the life sciences organizations having adopted AI at scale.

Back to statistic

Tools being leveraged to provide greater insights and contextual intelligence into company operations worldwide in 2018 and 2019

Tools providing insights and contextual intelligence for organizations worldwide 2018

Source and methodology information

Source(s)	Forbes; MicroStrategy
Conducted by	MicroStrategy
Survey period	2018 and 2019
Region(s)	Worldwide
Number of respondents	500
Age group	*n.a.*
Special characteristics	business intelligence and analytics professionals
Published by	Forbes; MicroStrategy
Publication date	October 2019
Original source	forbes.com
Notes:	*n.a.*

Description

This statistic shows the tools that companies are leveraging to provide greater insights and contextual intelligence into their operations worldwide in 2018 and 2019. As of 2019, around 59 percent of respondents stated that their company was using advanced and predictive analysis tools in order to provide it with greater insights and contextual intelligence into operations.

Back to statistic

Top benefits that companies realize through the use of data and analytics worldwide as of 2019

Benefits of effective data and analytics use in organizations worldwide 2019

Source and methodology information

Source(s)	Forbes; MicroStrategy
Conducted by	MicroStrategy
Survey period	2019
Region(s)	Worldwide
Number of respondents	500
Age group	*n.a.*
Special characteristics	business intelligence and analytics professionals
Published by	Forbes; MicroStrategy
Publication date	October 2019
Original source	forbes.com
Notes:	*n.a.*

Description

This statistic shows the top benefits that companies realized in using data and analytics worldwide as of 2019. Around 64 percent of respondents stated that through using data and analytics, improved efficiency and productivity had been achieved.

Back to statistic

Industrial Internet of Things market size worldwide from 2017 to 2025* (in billion U.S. dollars)

Industrial IoT - market size worldwide 2017-2025

Source and methodology information

Source(s)	MarketsandMarkets; Statista estimates
Conducted by	MarketsandMarkets; Statista estimates
Survey period	2017 to 2020
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	Statista
Publication date	March 2020
Original source	*n.a.*
Notes:	**2020 figure as an estimation; figures from 2021 onwards are projections.*

Description

The statistic shows the industrial Internet of Things (IIoT) market size worldwide from 2017 to 2025. In 2020, the market size for industrial Internet of Things is estimated to reach some 77.3 billion U.S. dollars.

Back to statistic

Industrial Internet of Things (IIoT) leading use cases worldwide as of 2019*

Industrial IoT: leading use cases worldwide 2019

Source and methodology information

Source(s)	PTC
Conducted by	PTC
Survey period	2019
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	PTC
Publication date	May 2019
Original source	The State of the Industrial Internet of Things 2019, page 4
Notes:	**The source did not provide specific survey information.*

Description

Operational intelligence is the leading use case that is driving the adoption of Industrial Internet of Things (IIoT) as of 2019. Asset monitoring and maintenance as well as predictive maintenance are some of the other top IIoT use cases.

Back to statistic

Global 3D printing products and services market size from 2020 to 2024 (in billion U.S. dollars)

3D printing industry - worldwide market size 2020-2024

Source and methodology information

Source(s)	Wohlers Associates
Conducted by	Wohlers Associates
Survey period	as of February 2020
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	Wohlers Associates
Publication date	February 2020
Original source	wohlersassociates.com
Notes:	*The market includes additive manufacturing (AM) products and services.*

Description

The worldwide market for 3D printing products and services is anticipated to exceed 40 billion U.S. dollars by 2024. The industry is expected to grow at a compound annual growth rate of 26.4 percent between 2020 and 2024. General Electric has the most 3D printing patents in the United States. Fast growing 3DP material 3D printing is able to utilize many materials for a wide range of applications. New materials and applications continue to be developed on a rapid basis. These new applications are likely to enter a wide range of industries. Among the fastest growing services for a specific material type are metals and metal alloys. The size of the metals and metal alloys 3D printing services market in 2017 only stood at around 266 million U.S. dollars worldwide. Metal 3D printing technology is relatively young but many major breakthroughs take place every year. Printing metals are generally more expensive, such as copper, for example; metals use heavier and more precious materials. This application is generally a slower process and the machinery itself is more expensive. As more businesses begin to have their own printers, printing software will grow faster than printing services.

Back to statistic

Share of the global online 3D printing demand by industry/application in 2018

Online 3D printing demand share worldwide by industry/application 2018

Source and methodology information

Source(s)	3D Hubs
Conducted by	3D Hubs
Survey period	2018
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	3D Hubs
Publication date	January 2020
Original source	3D Printing Trends 2020, page 13
Notes:	*n.a.*

Description

As per the latest data looking at the global distribution of online 3D printing demand by industry/application, in 2018, the industrial segment accounted for 31 percent of the global online 3D printing demand.

Back to statistic

Leading uses of 3D printing from 2015 to 2020

Uses of 3D printing 2015-2020

Source and methodology information

Source(s)	Forbes; Sculpteo; Statista estimates
Conducted by	Sculpteo; Statista estimates
Survey period	2015 to 2020
Region(s)	Worldwide
Number of respondents	1,600
Age group	18 years and older
Special characteristics	3D printing users from 71 countries
Published by	Statista
Publication date	June 2020
Original source	The State of 3D Printing, page 8
Notes:	*Question: What is the purpose of your 3D prints? Multiple answers allowed.*

Description

In 2020, the most popular use case of 3D printing was prototyping with 68 percent of respondents citing this purpose for 3D printing. Of those surveyed, 59 percent of respondents said they used 3D printing for proof of concept purposes, whilst 49 percent used the technology for production.

Back to statistic

Size of the global market for industrial and non-industrial robots between 2018 and 2025 (in billion U.S. dollars)

Global robotics market revenue 2018-2025

Source and methodology information

Source(s)	Tractica
Conducted by	Tractica
Survey period	as of Q3 2019
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	Tractica
Publication date	December 2019
Original source	tractica.com
Notes:	*The figures for 2019 through 2025 are projections. According to the source's definition, the robotics market includes "industrial robots [and] service robots ... also unmanned aerial vehicles (UAVs) and autonomous vehicles..."*

Description

The global market for robots is expected to grow at a compound annual growth rate (CAGR) of around 26 percent to reach just under 210 billion U.S. dollars by 2025. It is predicted that this market will hit the 100 billion U.S. dollar mark in 2020. On the road to autonomy The invention of the world`s first robot is credited to George Devol. The Unimate , a material handling robot performing basic welding and carrying tasks, was introduced in 1961. Robots are programmable machines that have the capability to move on at least three axes. They were developed to assist human workers with a wide array of tasks, including heavy lifting, as well as hazardous or repetitive work. Today`s robots have a much higher degree of autonomy based on several technological advancements made in recent years. The industrial robotics market , which has traditionally represented the robotics industry and has been led by Japanese and European robot manufacturers , is giving way to non-industrial robots, such as personal assistant robots, customer service robots, autonomous vehicles, and unmanned aerial vehicles (UAVs) .

Back to statistic

Projected industrial robotics market size worldwide in 2025, by major segment (in million U.S. dollars)

Global industrial robotics market revenue by segment 2025

Source and methodology information

Source(s)	Tractica
Conducted by	Tractica
Survey period	as of Q3 2019
Region(s)	Worldwide
Number of respondents	*n.a.*
Age group	*n.a.*
Special characteristics	*n.a.*
Published by	Tractica
Publication date	December 2019
Original source	tractica.com
Notes:	*n.a.*

Description

By 2025, the global market for automotive industrial robotics is forecast to be sized at just under seven billion U.S. dollars. The industrial robotics market has traditionally represented the robotics industry and has been led by Japanese and European robotics manufacturers, but is giving way to non-industrial robots, such as personal assistant robots, customer service robots, autonomous vehicles, and unmanned aerial vehicles (UAVs).

Back to statistic