SCOTLANDIS

SCOTLANDIS.COM

SCOTTISH TECHNOLOGY INDUSTRY SURVEY
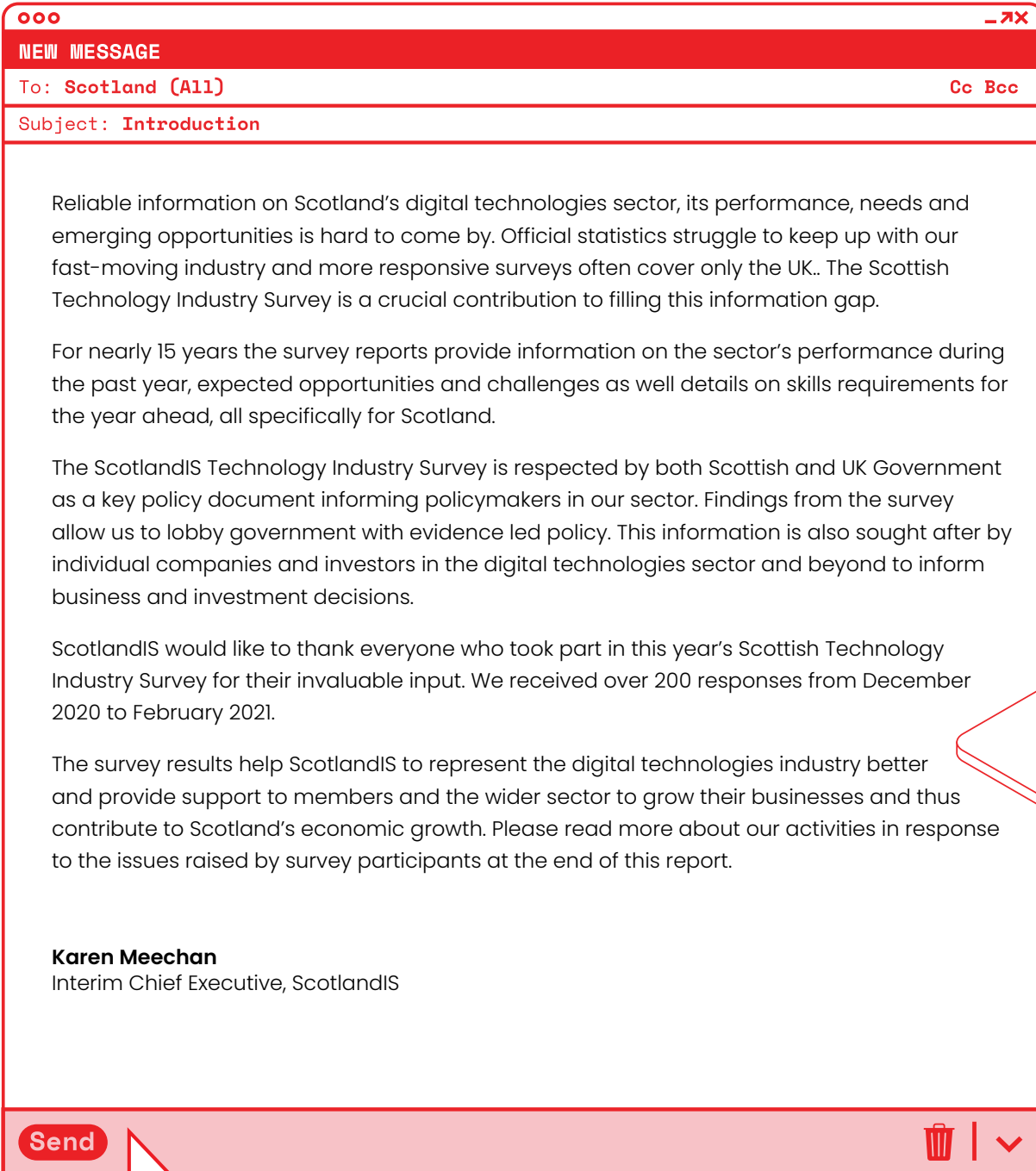
2021

To: **Scotland (All)**   Cc Bcc

Subject: **Introduction**

Reliable information on Scotland's digital technologies sector, its performance, needs and emerging opportunities is hard to come by. Official statistics struggle to keep up with our fast-moving industry and more responsive surveys often cover only the UK.. The Scottish Technology Industry Survey is a crucial contribution to filling this information gap.

For nearly 15 years the survey reports provide information on the sector's performance during the past year, expected opportunities and challenges as well details on skills requirements for the year ahead, all specifically for Scotland.

The ScotlandIS Technology Industry Survey is respected by both Scottish and UK Government as a key policy document informing policymakers in our sector. Findings from the survey allow us to lobby government with evidence led policy. This information is also sought after by individual companies and investors in the digital technologies sector and beyond to inform business and investment decisions.

ScotlandIS would like to thank everyone who took part in this year's Scottish Technology Industry Survey for their invaluable input. We received over 200 responses from December 2020 to February 2021.

The survey results help ScotlandIS to represent the digital technologies industry better and provide support to members and the wider sector to grow their businesses and thus contribute to Scotland's economic growth. Please read more about our activities in response to the issues raised by survey participants at the end of this report.

Karen Meechan
Interim Chief Executive, ScotlandIS

Send

RESILIENTS/
RESULT/S
/ / / FOR / /
SCOTLAND,
DIGITAL
TECH SECTOR
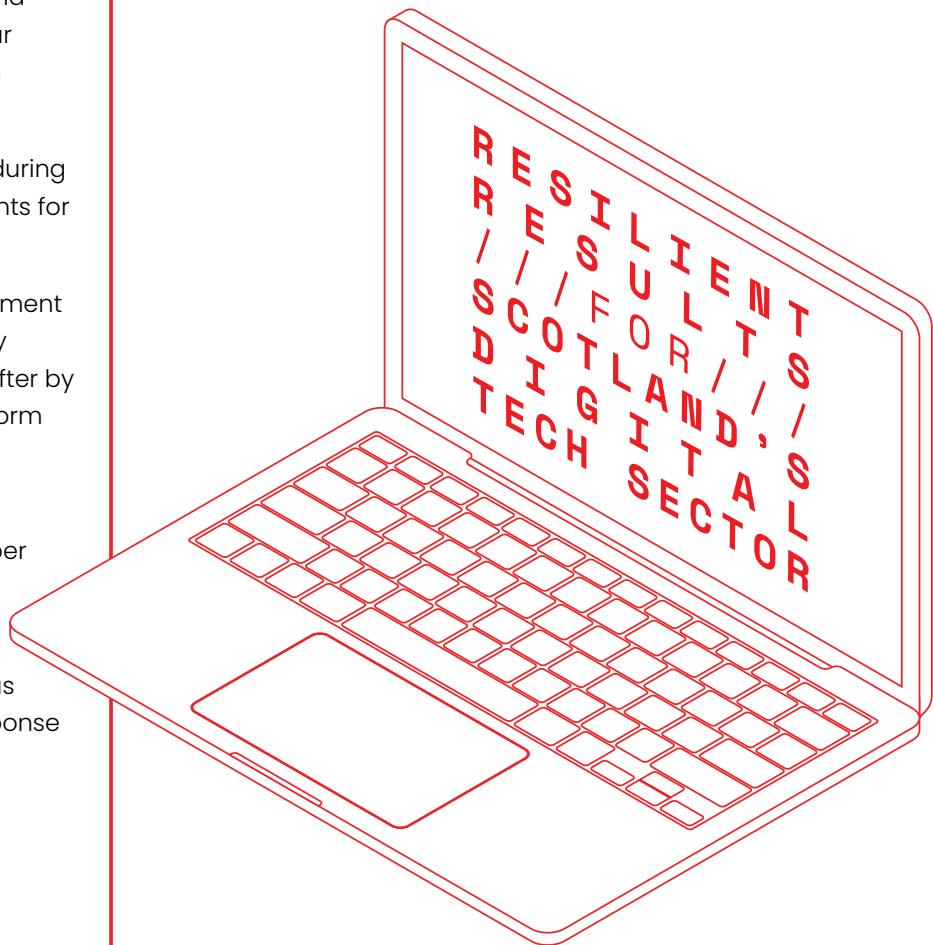
Top Trends

75%
OF RESPONDENTS ARE
OPTIMISTIC
ABOUT THE
NEXT 12 MONTHS

Continuing growth despite pandemic

Optimism levels remain high with 75% of survey respondents either very optimistic or optimistic about the next 12 months despite the impact of the COVID-19 pandemic.

Scotland's tech sector remained resilient in 2020 with 44% of survey participants increasing their sales and 40% increasing their profit margins, despite the ongoing coronavirus pandemic.

Engagement in international markets has increased yet again with 60% of respondents reporting they are already exporting (up from 59%) and another 23% have plans to do so in the future. The top three current export markets remain the same as in previous years, the Rest of the UK (RUK), Europe, and North America. Europe was still leading the ranking in 2020 (66%), ahead of RUK (63%) and the US (62%). This is a drop of 7% for Europe compared to 2019. RUK is seen as the most attractive market for 2021 with 72%, followed by North America (66%) and Europe (64%). The impact of Brexit and the ongoing coronavirus pandemic seems to have focused the sector to more local customers and suppliers.

SALES & MARKETING IS THE MOST IN DEMAND SKILL

Skills Demand

The most in demand skills sets this year was again sales & marketing with 82% indicating either a high requirement or some requirement in this area, this decreased only slightly from last year's 86%. Data skills was ranked next by two thirds of respondents, whilst 63% required software and web development skills.

When asked to share the greatest opportunities for their business over the next 18 months, the top three answers related to data analytics, artificial intelligence and the internet of things. The key growth area of opportunity which rose from last year was cyber security, growing from 21% to 23%.

Respondents showed a continuing strong demand for software development skills, with Java, Python and .NET leading the ranking of specific technical skills companies have the greatest demand for. Demand for cloud computing skills has increased yet again from last year from 52% to 54%. Cloud computing skills appears to be on a fast upward trajectory for the sector.

Ever growing need for new staff

Expectations for employment growth remain high, with 74% of respondents forecasting an increase in their employee numbers. This is slightly down from last year's 81%, but given the coronavirus pandemic in 2020, this still demonstrates a high level of demand for new staff.

Recruitment of university graduates has remained high with 71% of responding businesses reporting they are likely to recruit this type of talent in the next 12 months, slightly down from last year's 80% figure. Demand for college graduates has decreased slightly, from 46% to 44%. Just over half of respondents (53%) said they are likely to take on students for work placements.

Graduate apprentices are the most sought after again this year, with 33% of respondents reporting they are likely to recruit someone for a Graduate Apprenticeship (down from 44% in 2020). Interest in modern apprentices decreased (from 28% to 22%) as well as foundation apprentices (from 14% to 12%). However, 44% of respondents are likely to recruit someone who underwent retraining only down 1% from the previous year.

The vast majority of survey participants are taking proactive steps to widen their talent pool with just under two thirds (63%) offering flexible working patterns and just under half offering staff the option to work part-time (43%).

Industry Overview

Scotland's digital technologies sector

In 2020, around 11,240 digital technologies businesses were registered in Scotland which makes up 6.3% of the Scottish business base. 97,000 people were in employment in the sector, making up 3.7% of Scotland's total employment.

According to data from the Office of National Statistics (ONS), 'computer programming and consultancy' is the largest sub-sector, making up 85% of all digital technologies businesses (employing 62% of the tech workforce) followed by 'telecommunications' with 4% of the company base (24% of the workforce).

Scotland is home to a thriving tech ecosystem that contributed £4.9bn Gross Value Added (GVA) to Scotland's economy in 2019, accounting for 3.5% of total GVA. GVA per head for the tech sector is 40% high than the Scottish average, making it a considerable contributor to Scotland's economy. This success has helped elevate Edinburgh to the most active tech community outside of London, closely followed by Glasgow in 4th place. Until 2029, the digital technologies industry is forecasted to be the second fastest growing sector in Scotland (1.5 times faster than overall economy), only behind the child day-care sectors which is set to grow significantly due to the expansion of free provision.
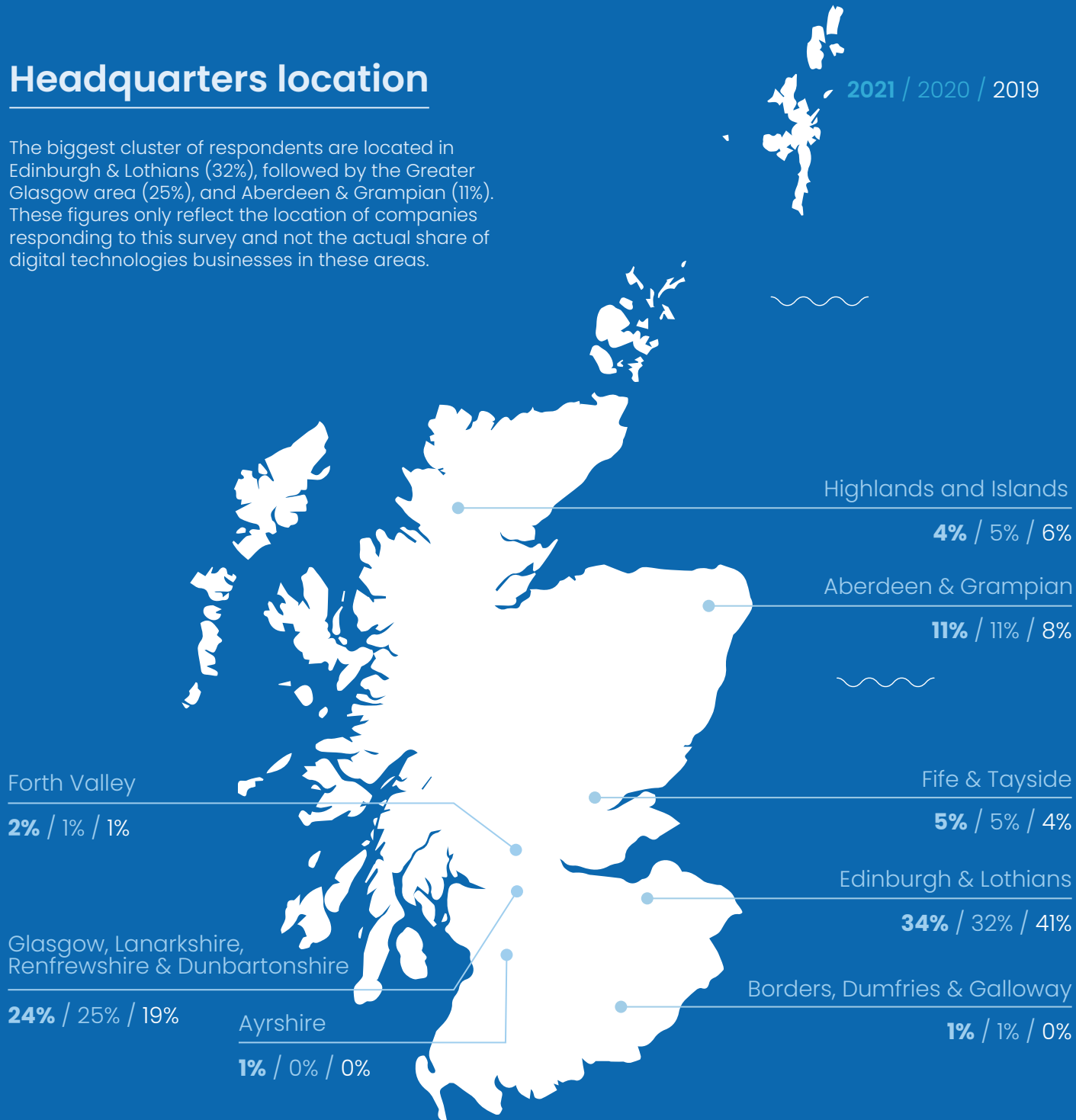
1. Please see the chapter on methodology at the end of the report for details on the definition of the digital technologies sector and sources of the figures in this industry overview.

IN 2020 AROUND 11,240 **DIGITAL TECHNOLOGY BUSINESSES** WERE REGISTERED IN SCOTLAND

Headquarters location

The biggest cluster of respondents are located in Edinburgh & Lothians (32%), followed by the Greater Glasgow area (25%), and Aberdeen & Grampian (11%). These figures only reflect the location of companies responding to this survey and not the actual share of digital technologies businesses in these areas.

2021 / 2020 / 2019

Highlands and Islands
4% / 5% / 6%

Aberdeen & Grampian
11% / 11% / 8%

Forth Valley
2% / 1% / 1%

Fife & Tayside
5% / 5% / 4%

Edinburgh & Lothians
34% / 32% / 41%

Glasgow, Lanarkshire, Renfrewshire & Dunbartonshire
24% / 25% / 19%

Borders, Dumfries & Galloway
1% / 1% / 0%

Ayrshire
1% / 0% / 0%

2020 / 2019 / 2018

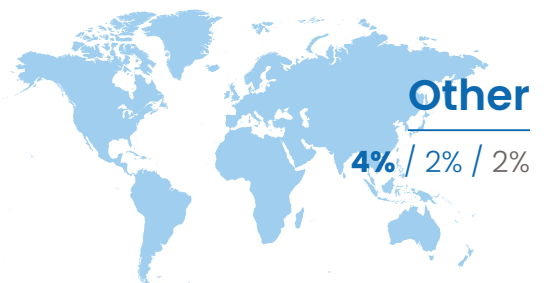## UK outwith Scotland
8% / 9% / 10%

EU headquartered
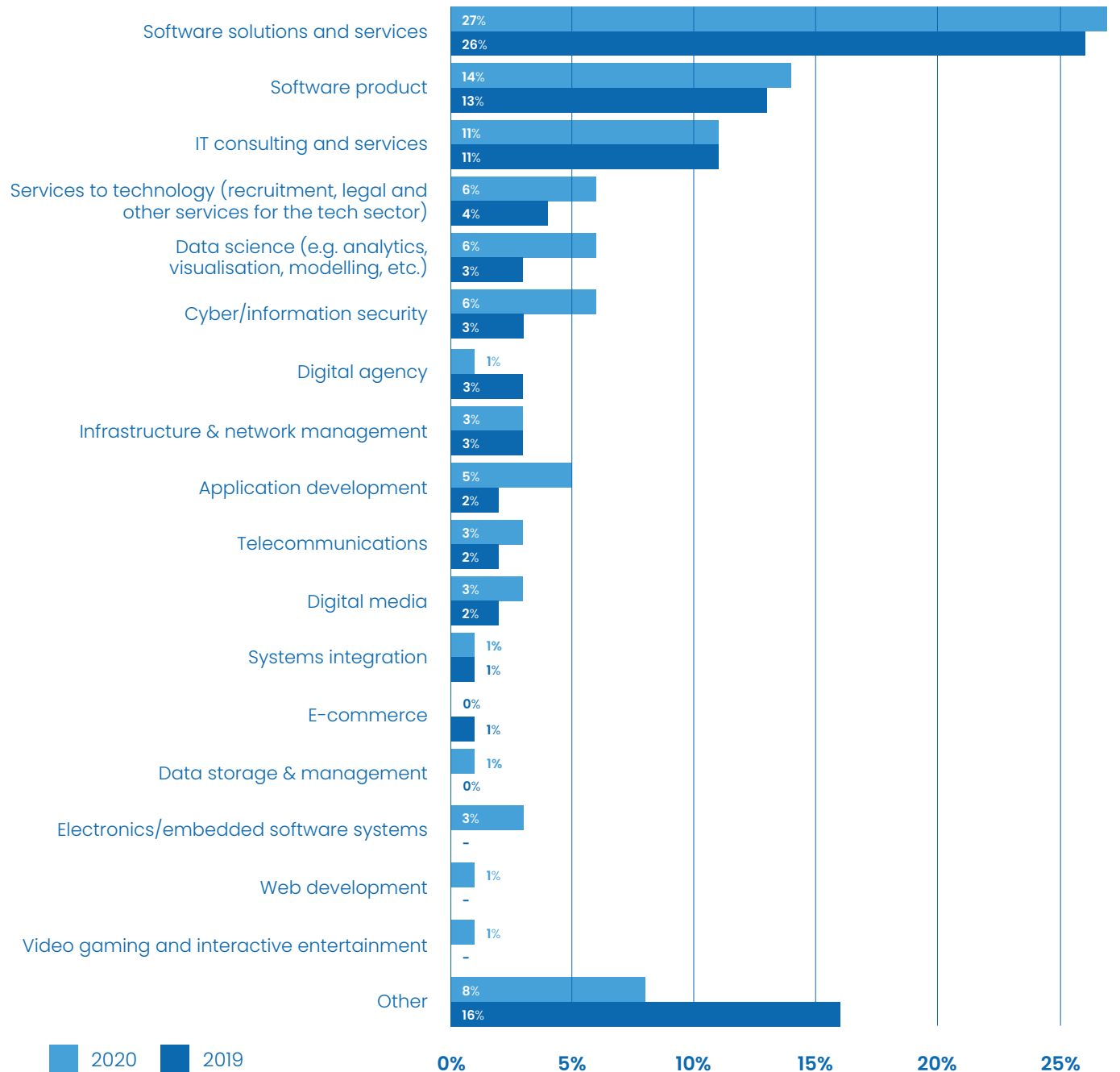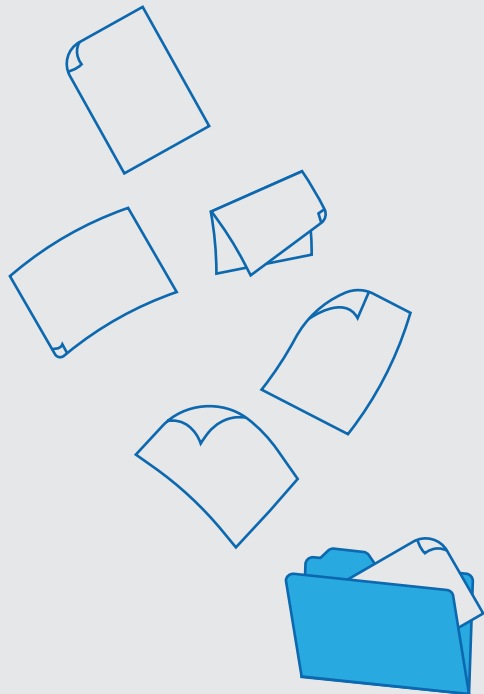**3%** / 1% / 1%

US headquartered
4% / 8% / 6%

Other
4% / 2% / 2%

Main activity of business

Software solutions and services (26%) and software products (13%) continue to be the most significant activities respondents are engaged in.

Activity	2020	2019
Software solutions and services	27%	26%
Software product	14%	13%
IT consulting and services	11%	11%
Services to technology (recruitment, legal and other services for the tech sector)	6%	4%
Data science (e.g. analytics, visualisation, modelling, etc.)	6%	3%
Cyber/information security	6%	3%
Digital agency	1%	3%
Infrastructure & network management	3%	3%
Application development	5%	2%
Telecommunications	3%	2%
Digital media	3%	2%
Systems integration	1%	1%
E-commerce	0%	1%
Data storage & management	1%	0%
Electronics/embedded software systems	3%	–
Web development	1%	–
Video gaming and interactive entertainment	1%	–
Other	8%	16%

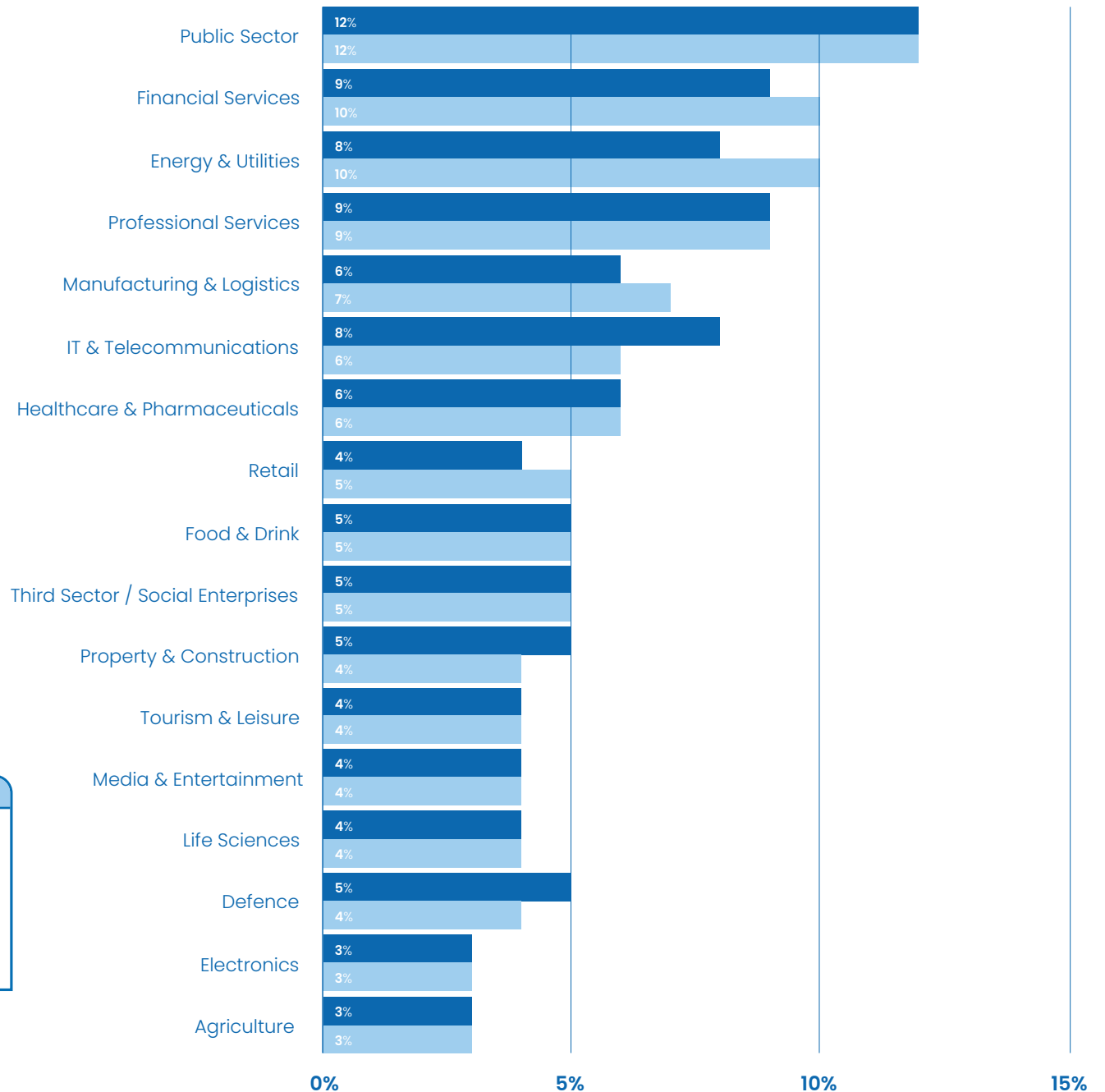■ 2020 ■ 2019

0% 5% 10% 15% 20% 25%

Sectors being supplied

Digital is critical and our industry supplies a wide array of sectors – the top five being public sector (12%), financial services (9%), professional services (9%) energy & utilities (8%) and IT & Telecommunications (8%). There have been small changes in the last year with a slight decrease in the supply to multiple sectors, however there are areas of growth shown in Defence, IT & Telecommunications and Property & Construction.

Asked about demand for the next 12 months, 75% of respondents expected an increase in business from the professional services sector, followed by 73% of those supplying the financial services, energy & utilities (66%) and health care & pharmaceuticals (65%). A decline in demand is anticipated by 45% of tourism & leisure and 40% of retail sector providers.

IT & TELECOMS AND DEFENCE
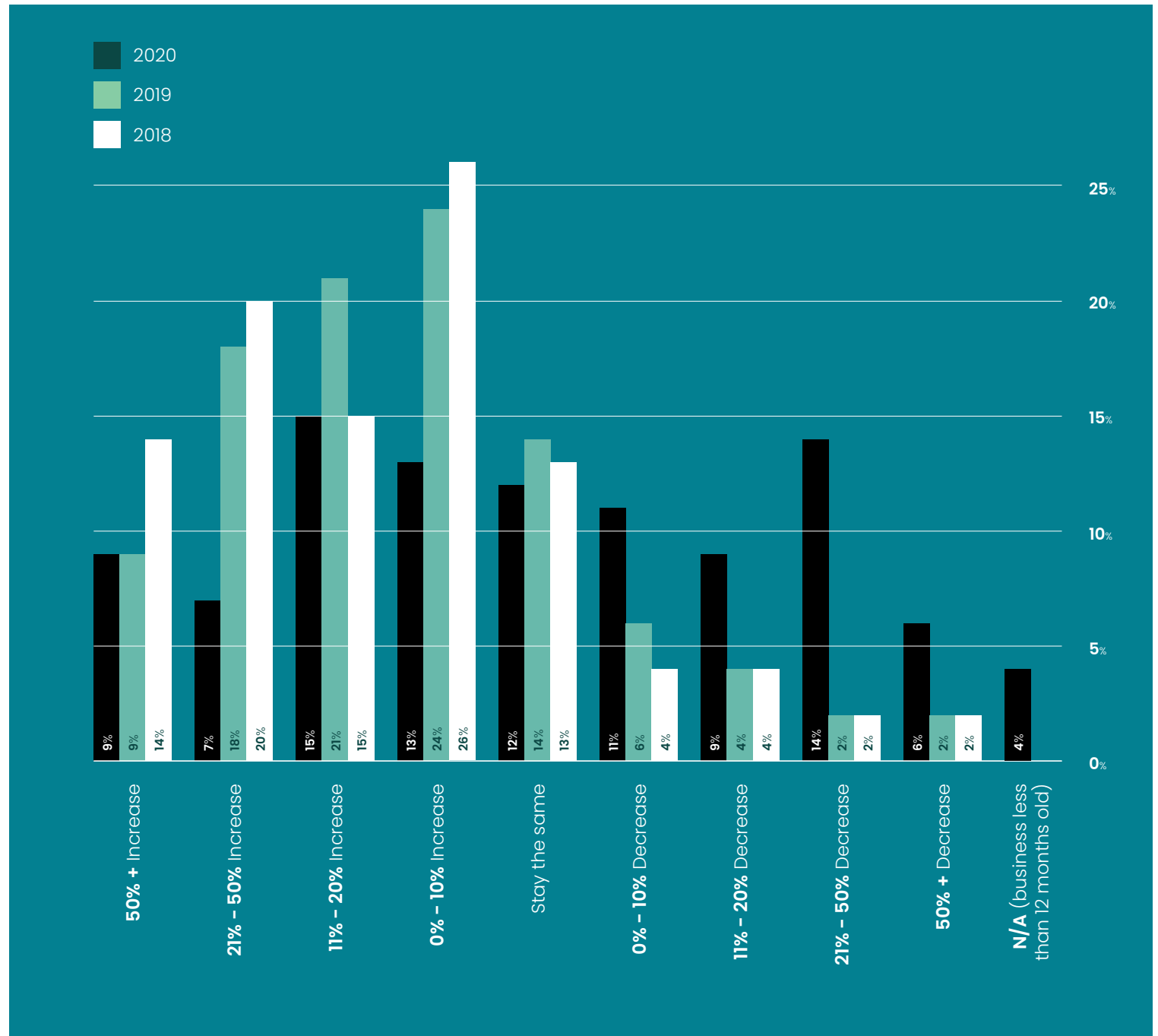LEAD THE WAY AS
GROWTH SECTORS

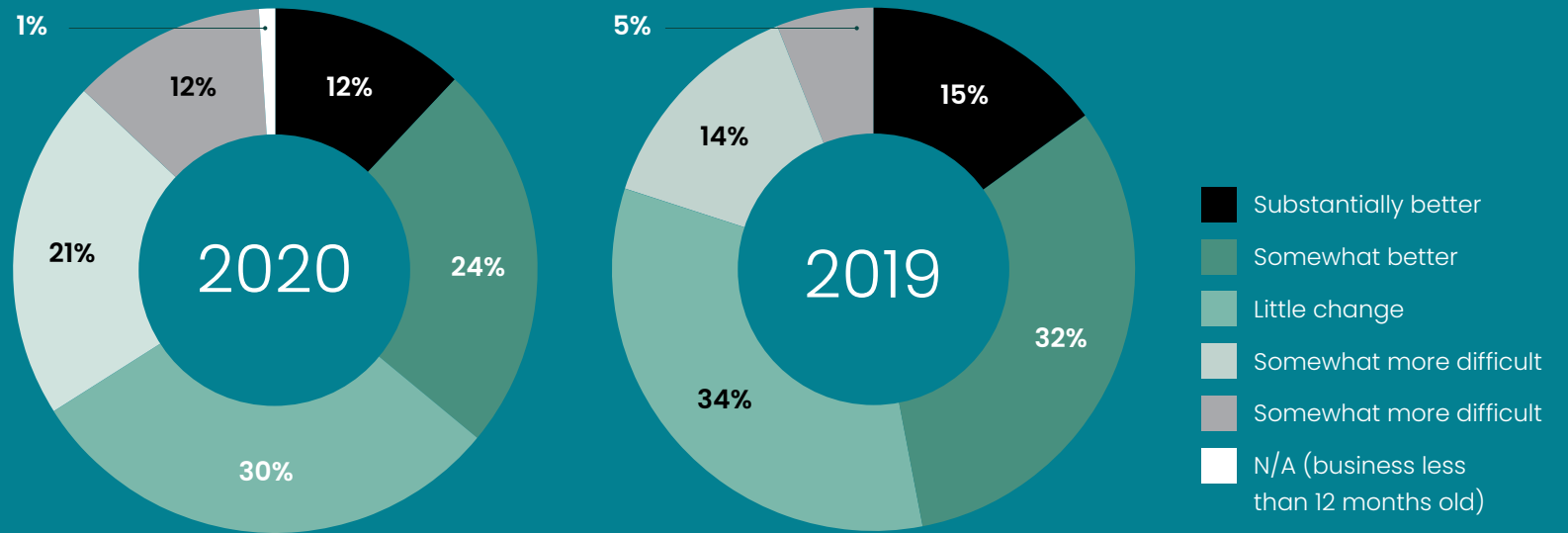| Sector	2020	2019
Public Sector	12%	12%
Financial Services	9%	10%
Energy & Utilities	8%	10%
Professional Services	9%	9%
Manufacturing & Logistics	6%	7%
IT & Telecommunications	8%	6%
Healthcare & Pharmaceuticals	6%	6%
Retail	4%	5%
Food & Drink	5%	5%
Third Sector / Social Enterprises	5%	5%
Property & Construction	5%	4%
Tourism & Leisure	4%	4%
Media & Entertainment	4%	4%
Life Sciences	4%	4%
Defence	5%	4%
Electronics	3%	3%
Agriculture	3%	3%

2020   2019

Review of 2020

Sales levels

44% of companies noted an increase in sales over the last year, compared to 72% in 2019. Given the circumstances surrounding 2020 this decrease is not surprising, however it is heartening to see the sector still growing despite the multiple challenges facing the economy. However, more companies did report a decrease in sales in 2020 (40%) than in 2019 (14%).

Legend:
- 2020
- 2019
- 2018

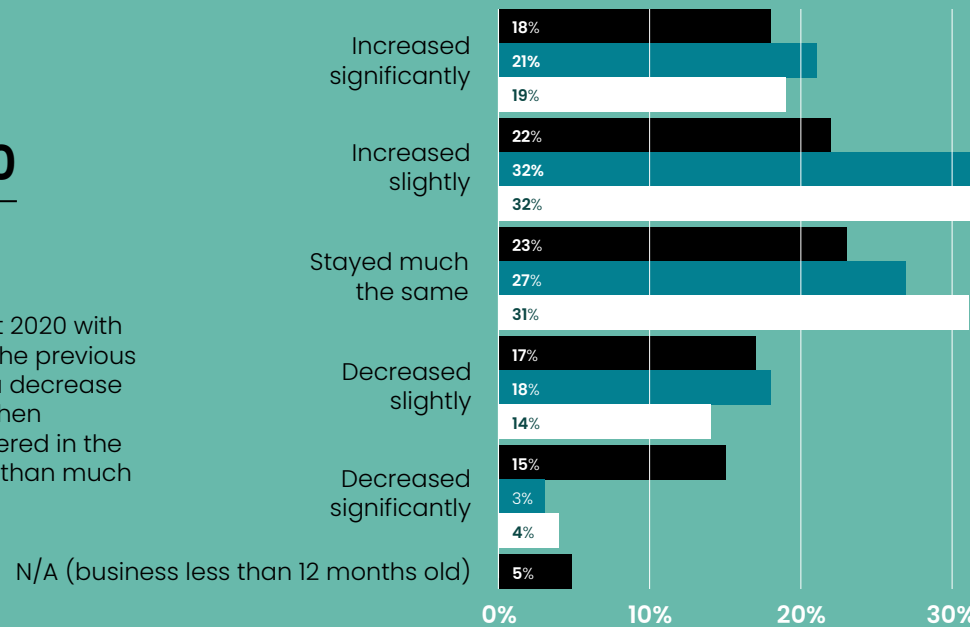| Category	2020	2019	2018
50% + Increase	9%	9%	14%
21% – 50% Increase	7%	18%	20%
11% – 20% Increase	15%	21%	15%
0% – 10% Increase	13%	24%	26%
Stay the same	12%	14%	13%
0% – 10% Decrease	11%	6%	4%
11% – 20% Decrease	9%	4%	4%
21% – 50% Decrease	14%	2%	2%
50% + Decrease	6%	2%	2%
N/A (business less than 12 months old)	4%		

Cashflow

Cashflow of respondents remained somewhat positive with 36% reporting cashflow in 2020 was better than the previous 12 months. This has gone down slightly, from 47% in the previous year, whilst the share of companies seeing little change in cashflow remains stable.

2020

- 12%
- 24%
- 30%
- 21%
- 12%
- 1%

2019

- 15%
- 32%
- 34%
- 14%
- 5%

Legend:
- Substantially better
- Somewhat better
- Little change
- Somewhat more difficult
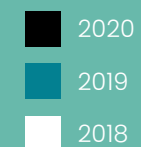- Somewhat more difficult
- N/A (business less than 12 months old)

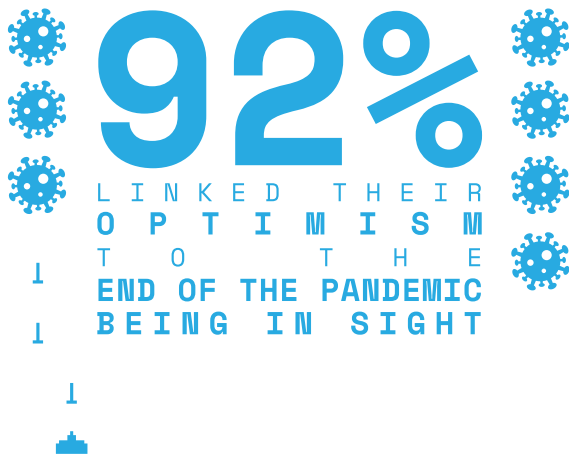# Profit margin performance in 2020 compared to 2019

Profit margins dropped a little throughout 2020 with 42% reporting an increase compared to the previous year. The share of companies who saw a decrease in their profit margins has grown by 11% when compared to 2019, however when considered in the context of 2020 this is still at a lower level than much of the economy.

Increased significantly
- 18%
- 21%
- 19%

Increased slightly
- 22%
- 32%
- 32%

Stayed much the same
- 23%
- 27%
- 31%

Decreased slightly
- 17%
- 18%
- 14%

Decreased significantly
- 15%
- 3%
- 4%

N/A (business less than 12 months old)
- 5%

0%   10%   20%   30%

PROFIT MARGINS ROSE FOR

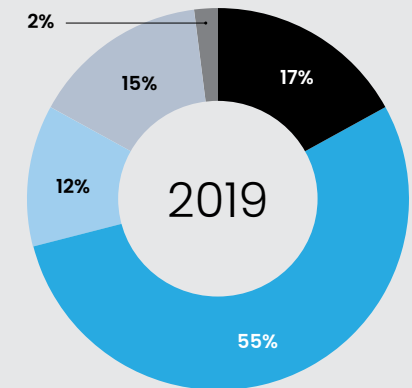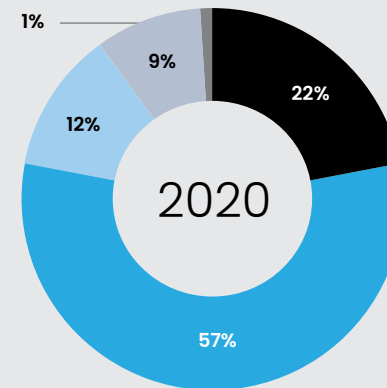# 42%
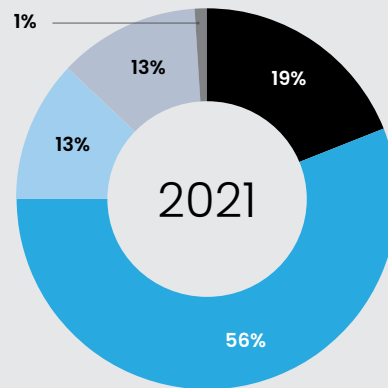
OF RESPONDENTS

- 2020
- 2019
- 2018

Outlook for 2021

The sector is optimistic about the year ahead and at similar levels to 2020 prior to the pandemic. 75% say they are very optimistic about the next 12 months, compared to 79% in 2020 and 72% in 2019. There has been a slight growth in pessimism with 14% of respondents reporting they are pessimistic, compared to 10% in 2020.

Almost all respondents (92%) linked their optimism to the end of the pandemic being in sight. 51% of respondents linked their optimism to the introduction of new products, strong demand for existing products and services or a growing market (up from 48% in 2020). 6% of companies are optimistic because of a generally good situation in their market. The share of respondents indicating that they are pessimistic is primarily based around Covid and the economic uncertainty it has left, alongside the contraction of the UK economy (84%).

The top three challenges for 2020 are staff recruitment and retention, mentioned by 58% of respondents, followed by the current political situation (38%) and sales and winning new business (36%). These were also the most common challenges in 2019 but there has been an increase for both staff recruitment and retention (up by 6%) and sales (up by 7 percentage points). The share of respondents identifying the political situation as a challenge has decreased slightly by 4 percentage points but remains at a much higher level than pre-2018. Businesses challenged by economic volatility and changes in their markets has decreased (from 17% to 9%).

92%
LINKED THEIR OPTIMISM TO THE **END OF THE PANDEMIC BEING IN SIGHT**

2021
- 19%
- 56%
- 13%
- 13%
- 1%

2020
- 22%
- 57%
- 12%
- 9%
- 1%

### 2019
- 17%
- 55%
- 12%
- 15%
- 2%

Legend: ■ Very optimistic ■ Optimistic ■ No change ■ Pessimistic ■ Very pessimistic

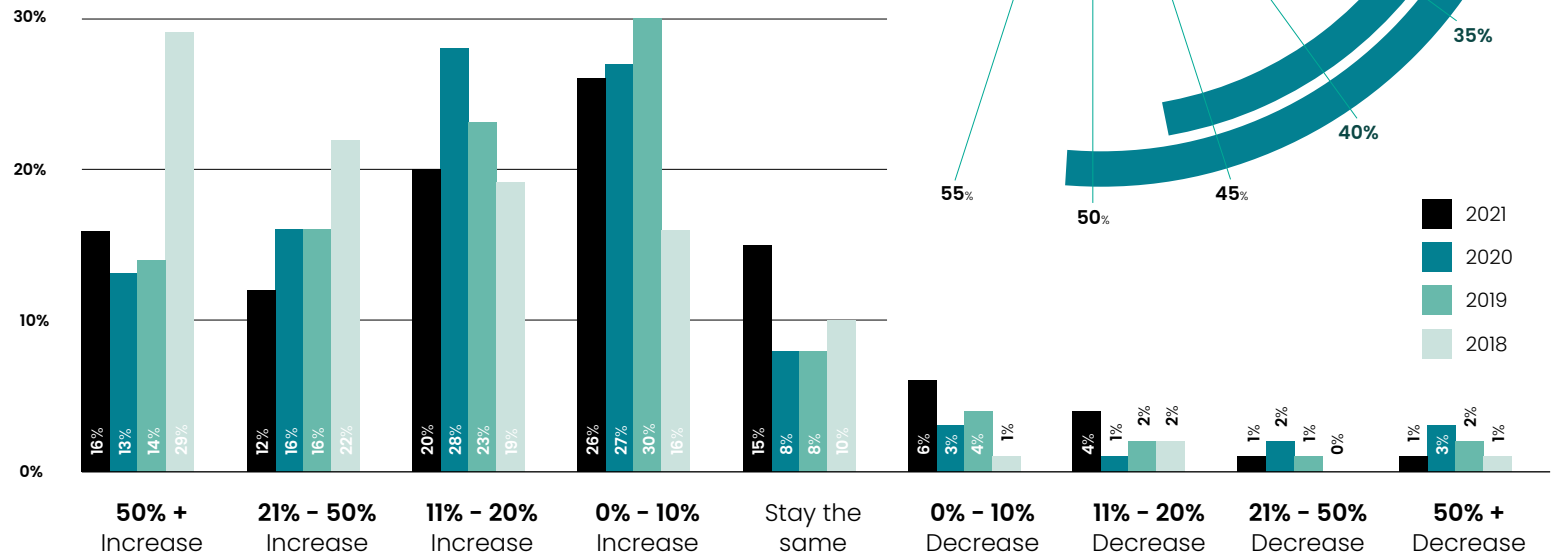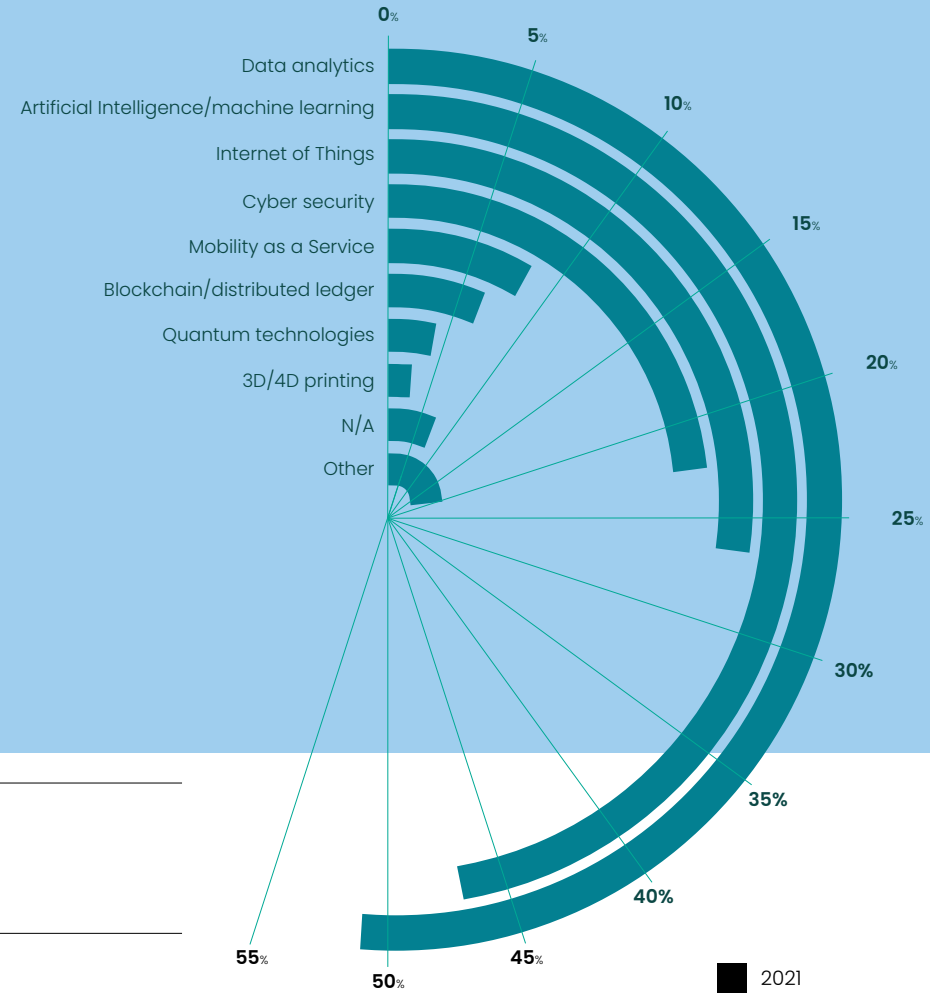# Expected change in sales over the next 12 months

Businesses are as optimistic about expected sales levels for the next 12 months as last year, with 74% of companies predicting an increase and 15% expecting sales to stay the same.

A comparison over the last 4 years shows that 2018 was a year of exceptionally high sales expectations whereas expectations for 2021 are slightly lower, although relatively high when compared with other industries.

74%

PREDICT AN INCREASE IN SALES
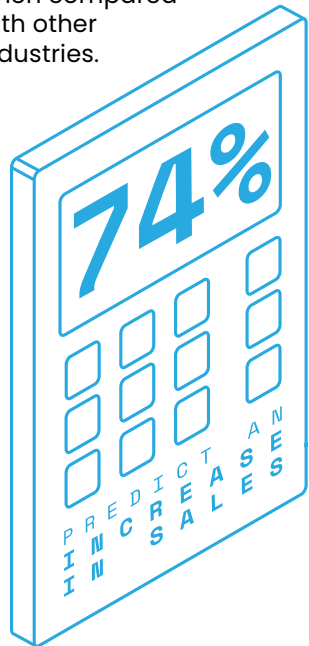
New opportunities

Companies report seeing the greatest opportunities for their business over the next 18 months in data analytics (51%), followed by artificial intelligence and machine learning (47%) and Internet of Things (27%). Quantum technologies and 3D/4D printing are generally not perceived as key opportunities over the next 18 months. These results are largely similar to last year, however the share of respondents naming data analytics, AI/ML and IOT as a key opportunity decreased by 14%.

Radial bar chart categories:
- Data analytics
- Artificial Intelligence/machine learning
- Internet of Things
- Cyber security
- Mobility as a Service
- Blockchain/distributed ledger
- Quantum technologies
- 3D/4D printing
- N/A
- Other

Axis: 0%, 5%, 10%, 15%, 20%, 25%, 30%, 35%, 40%, 45%, 50%, 55%

Bar chart comparing 2021, 2020, 2019, 2018:

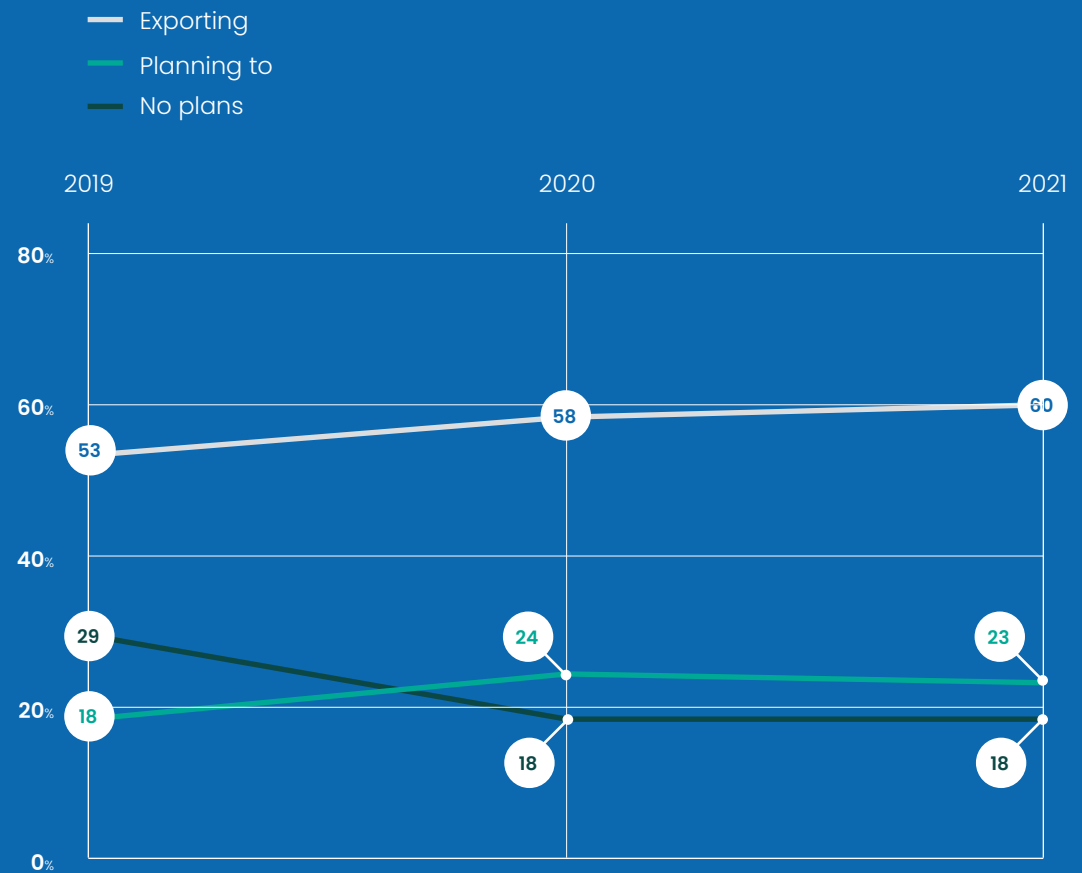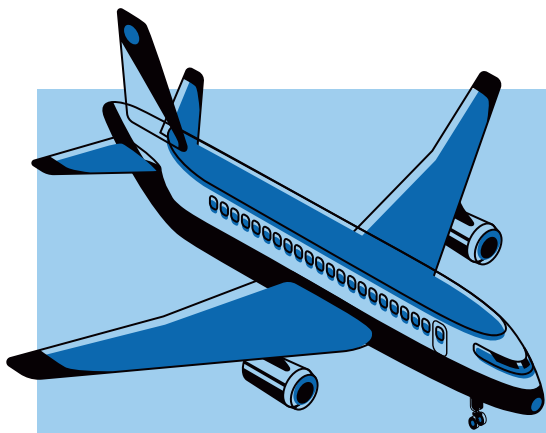|	2021	2020	2019	2018
50% + Increase	16%	13%	14%	29%
21% – 50% Increase	12%	16%	16%	22%
11% – 20% Increase	20%	28%	23%	19%
0% – 10% Increase	26%	27%	30%	16%
Stay the same	15%	8%	8%	10%
0% – 10% Decrease	6%	3%	4%	1%
11% – 20% Decrease	4%	1%	2%	2%
21% – 50% Decrease	1%	2%	1%	0%
50% + Decrease	1%	3%	2%	1%

International Opportunities

Export levels

More respondents than last year are already exporting, with 60% reporting this is something they already undertake. 23% report they plan to do so in the future and another 24% have no plans to do so.

— Exporting
— Planning to
— No plans

	2019	2020	2021
Exporting	53	58	60
No plans	29	18	18
Planning to	18	24	23

Export markets

The top three current export markets remain the same as in previous years, with the Rest of the UK (RUK), Europe, and North America coming out on top. Similar to last year, Europe is leading the ranking 63%, although this has dipped by 13% when compared to 2020(79%).

RUK and Europe are also seen as the most attractive markets for 2020 (72% and 64% respectively), followed by North America (66%). Australia, New Zealand and the Middle East are both growing in their attractiveness for 2021.

Top markets in 2020 / Most attractive in 2021

North America
62% / 66%

Rest of the UK
63% / 72%

Europe
66% / 64%

Africa
5% / 4%

Middle & South America
6% / 4%

Australia & New Zealand
18% / 24%

Asia
26% / 23%

Middle East
9% / 13%

Employment & Skills

Digital technologies employment in Scotland

In 2018 (the latest available ONS data), 76,000 of people were employed in digital technologies companies an increase of 26% compared to 2017. This is a remarkable growth after the sector workforce contracted by 6% last year. The majority of these additional employees work in computer programming and consultancy businesses or data and information services companies. In Great Britain (no UK data available), the number of employees in digital technologies companies decreased by 1% which makes the increase in Scotland even more noteworthy.

Research commissioned by Skills Development Scotland has shown that between 2016 and 2018, the number of people working in digital technologies professions has grown by 9% to around 100,000, 23% of which are female. The growth has been strongest in web design and development, IT business analysts, architects and systems designers, programmers and software development professionals. 1

Digital technologies roles offer both a wide variety of career opportunities and above average compensation, even though the average salary for digital technologies jobs decreased slightly. In 2018, the average annual salary for people working in digital technologies occupations was £36,900, 26% higher than the Scottish average of £29,200, but about 1.5% lower than in 2016. Since 2013, digital technologies salaries have increased at a faster rate (15%) than salaries across the wider economy (11%).

Around 13,000 digital technologies job opportunities are created every year, partly in response to people retiring from or leaving the industry but also through growing demand for these skills. There continues to be a gap between the number of job opportunities and the number of college and university leavers, apprentices and career changers that enter the labour market with relevant skills.
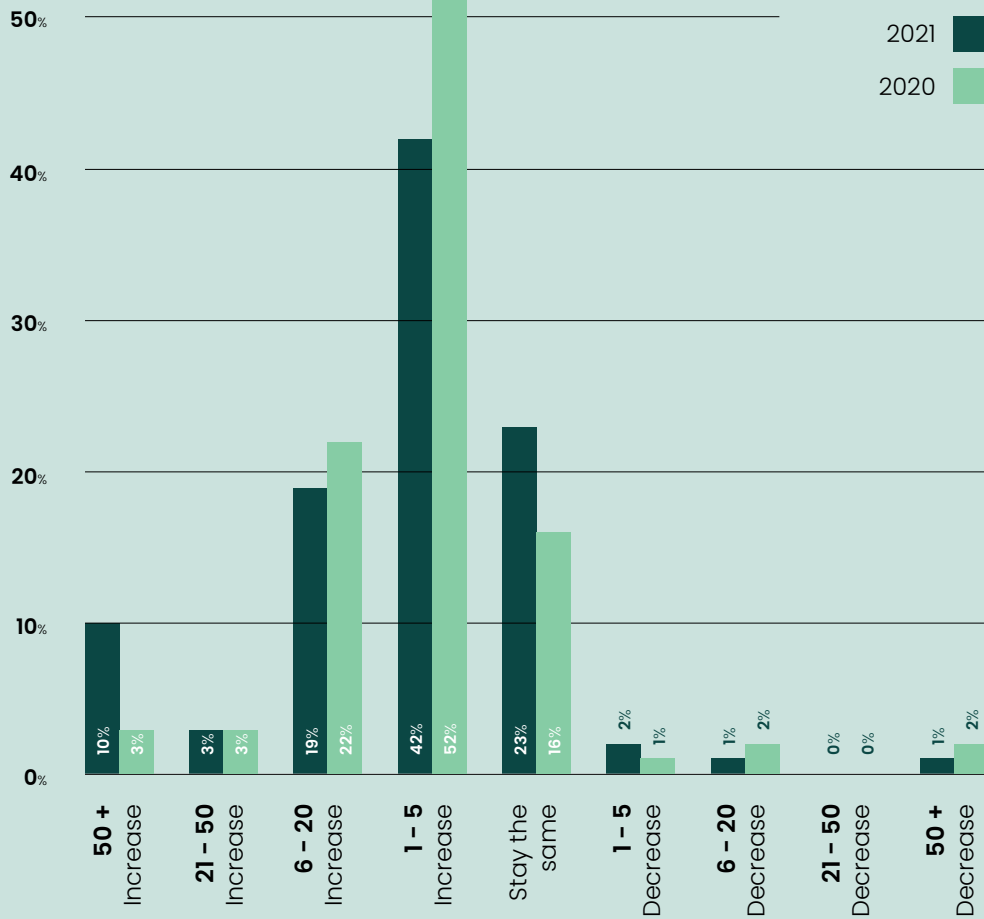
However, progress is being made, for example by a 15% increase in computing science graduates between 2014/15 and 2017/18. This was substantially more than the previous increase of 5% in the two years from 2012/13. The number of young people starting Modern Apprentices in digital technologies continues to double every two years and reached 1,800 in 2017/18. Another 300 people had started a Graduate Apprenticeship related to digital technologies in 2018/19.

Over the last year, ScotlandIS has started new initiatives to address the digital technologies skills gap. Find out more about it in the chapter "ScotlandIS commentary" at the end of this report.

1. Please see the chapter on methodology at the end of the report for details on the definition of the digital technologies sector and sources of the figures in this employment overview.

2021 ■
2020 ■

Chart values (bars left to right):
- 50 + Increase: 10% / 3%
- 21 – 50 Increase: 3% / 3%
- 6 – 20 Increase: 19% / 22%
- 1 – 5 Increase: 42% / 52%
- Stay the same: 23% / 16%
- 1 – 5 Decrease: 2% / 1%
- 6 – 20 Decrease: 1% / 2%
- 21 – 50 Decrease: 0% / 0%
- 50 + Decrease: 1% / 2%

Change in employee numbers over the next 12 months

Expectations for employment growth remain high, with 74% of respondents forecasting an increase in their employee numbers, which is down slightly when compared to the start of last year (80% - or 71% after Covid). Forecasts have been at this high level for the last 4 years (80% 2020, 81% in 2019, 80% in 2018). The share of businesses expecting a decrease in staff numbers has remained largely stable.

Location of talent

The majority of respondents (57%) continue to expect to find most new staff in Scotland, this is slightly lower when compared to last year however more expect to gain staff from RUK.

2021 / 2020 / 2019

Scotland
57% / 70% / 70%

Rest of the UK
20% / 15% / 17%

13% N/A

Europe
4% / 9% / 5%

Rest of the World
6% / 6% / 9%

71%

OF RESPONDENTS
PLAN TO HIRE
RECENT GRADUATES
IN THE NEXT 12 MONTHS

Legend:
- University graduates
- College graduates
- Students for work placement

Recruitment from colleges and universities

Demand for the recruitment of university graduates has decreased slightly with 71% of responding businesses reporting they are definitely or quite likely to recruit graduates in the next 12 months, down from figures around 81% last year, however when compared over the last 5 years this figure is fairly 9% static (70%).
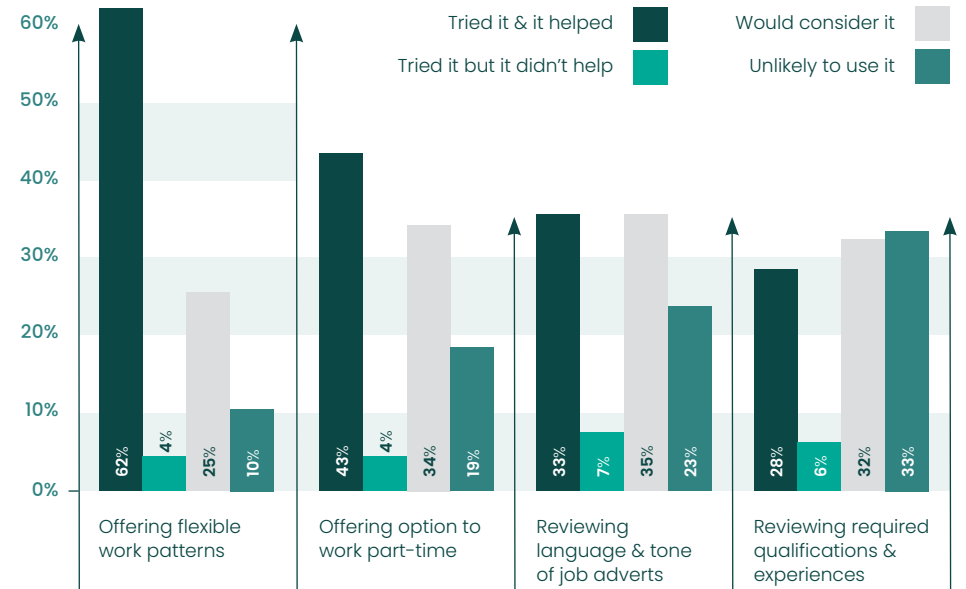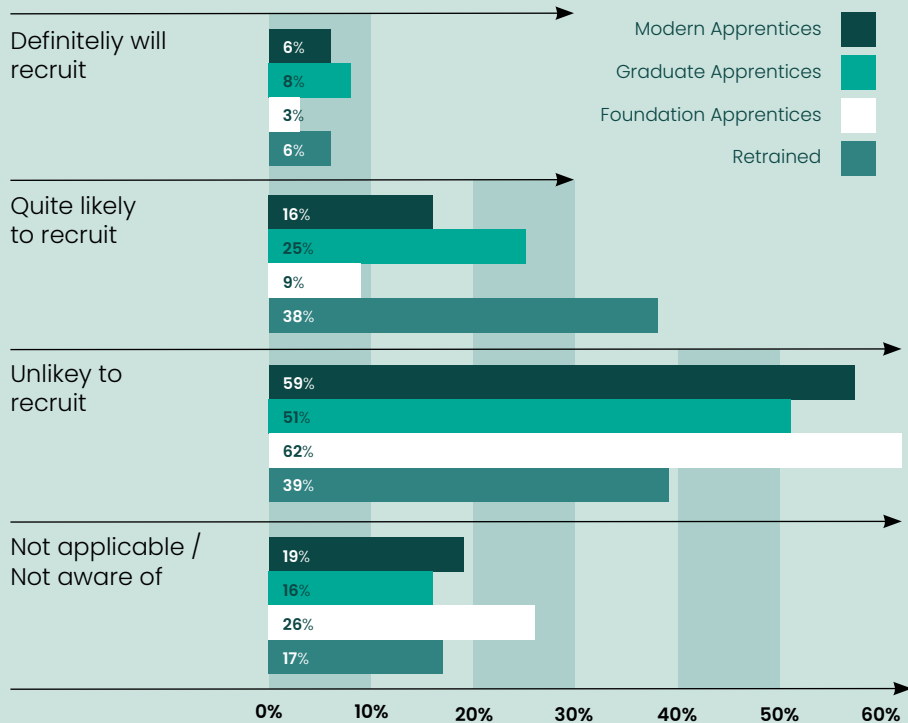
Interest in college graduates has remained similar with 44% definitely or quite likely to hire them, compared to 46% last year.

Definitely will recruit
- 30%
- 11%
- 19%

Quite likely to recruit
- 41%
- 33%
- 34%

Unlikely to recruit
- 21%
- 45%
- 35%

Not applicable / Not aware of
- 9%
- 12%
- 12%

Recruitment of apprentices

Graduate apprentices are the most popular type of apprentice, similar to last year, with 44% of respondents reporting they are likely to recruit someone for a Graduate Apprenticeship. Interest decreased for modern apprentices (from 28% in 2020 to 24%) as well as foundation apprentices (from 14% to 12%).

Numbers are similar to last year when we look at how likely companies are to take on someone who underwent retraining. 44% (45% 2020) of respondents are likely to recruit such a person whilst 39% (35% 2020) are unlikely to do so.

Legend (left chart): Modern Apprentices, Graduate Apprentices, Foundation Apprentices, Retrained

	Modern Apprentices	Graduate Apprentices	Foundation Apprentices	Retrained
Definitely will recruit	6%	8%	3%	6%
Quite likely to recruit	16%	25%	9%	38%
Unlikely to recruit	59%	51%	62%	39%
Not applicable / Not aware of	19%	16%	26%	17%

Legend (right chart): Tried it & it helped, Tried it but it didn't help, Would consider it, Unlikely to use it

	Tried it & it helped	Tried it but it didn't help	Would consider it	Unlikely to use it
Offering flexible work patterns	62%	4%	25%	10%
Offering option to work part-time	43%	4%	34%	19%
Reviewing language & tone of job adverts	33%	7%	35%	23%
Reviewing required qualifications & experiences	28%	6%	32%	33%

Expanding your talent pool

The skills gap still persists in our industry and we asked survey participants what steps they have taken to expand the talent pool they can recruit from.

Offering flexible work patterns is the most common measure taken by respondents. 62% of respondents have tried it and found that it helped with recruitment.

The number of companies who would consider reviewing the language or tone of job adverts has dropped considerably to 35% 2021 (46% 2020), and the number who are unlikely to use this as an option has increased by 8% (23% 2021, 15% 2020). However, a similar number (35%) have tried this as an option and it has helped their businesses.
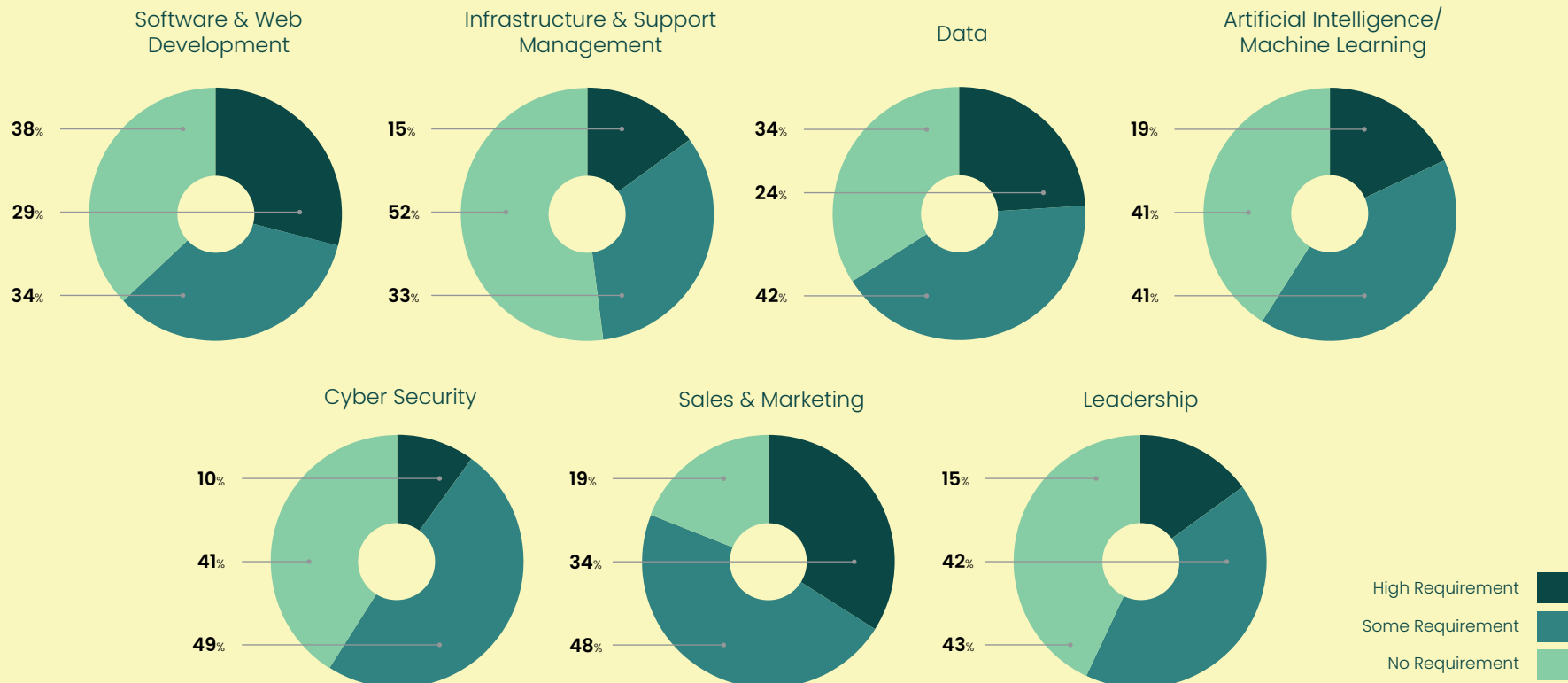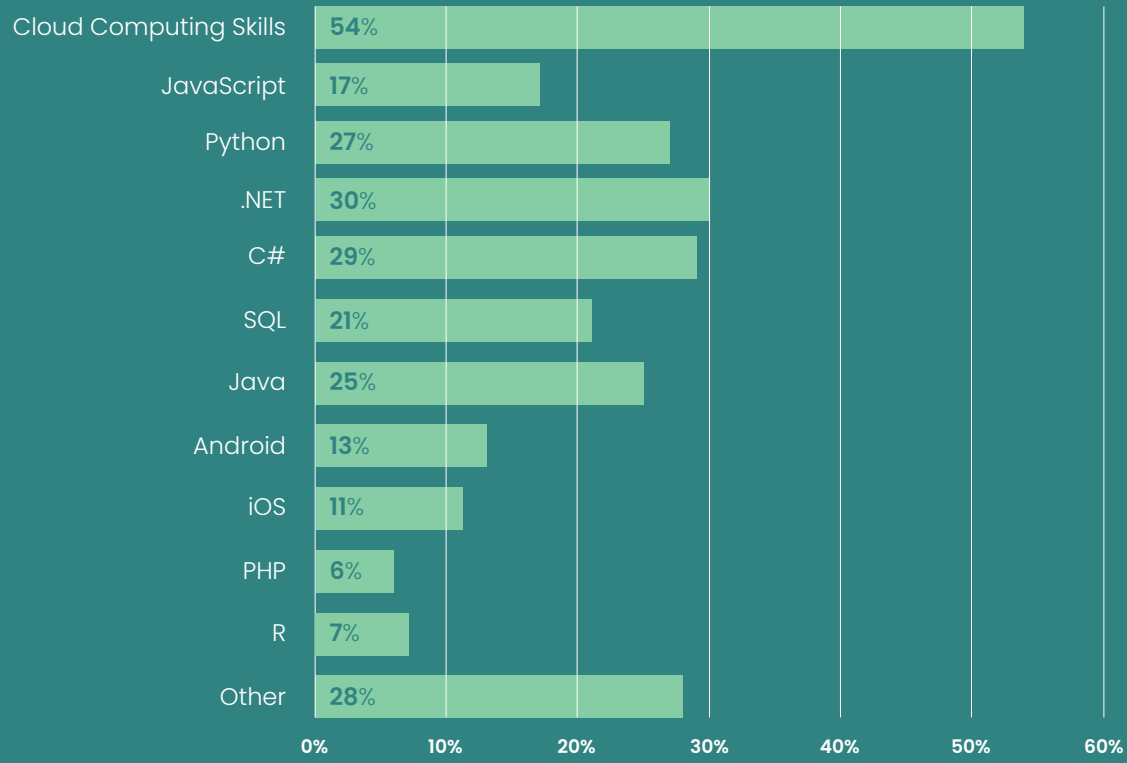
Most in demand skill sets

Sales and marketing remains the most in demand skills set with 82% of respondents indicating some or a high requirement in that area (similar to last year, followed by a requirement for data skills such as analytics, architecture and visualisation at 66% and 63% with a requirement for software and web development skills. The demand for all skills sets has dropped when compared to last year, however as companies do not expect to hire as many staff this is not unexpected.

Amongst larger companies the greatest demand is for software and web development skills, with 92%, which is considerably higher than in the overall sample. 88% of larger companies require cyber security and AI/ML skills, compared to 60% in the overall sample.

Medium sized businesses have a strong demand for data skills (62% data and 61% AL/ML), and sales and marketing skills (85%). The demand for all skills sets included in the questions is higher amongst mid-sized businesses than in the overall sample.

For smaller businesses, sales and marketing (74%) and AI/ML (60%) are the most in demand skill sets. Software and web development skills are required by 55% to aid business growth in smaller companies, followed by cyber security skills (51%).

Software & Web Development — 38%, 29%, 34%

Infrastructure & Support Management — 15%, 52%, 33%

Data — 34%, 24%, 42%

Artificial Intelligence/Machine Learning — 19%, 41%, 41%

Cyber Security — 10%, 41%, 49%

Sales & Marketing — 19%, 34%, 48%

Leadership — 15%, 42%, 43%

Legend:
- High Requirement
- Some Requirement
- No Requirement

Technical skills

Cloud Computing Skills **54%**
JavaScript **17%**
Python **27%**
.NET **30%**
C# **29%**
SQL **21%**
Java **25%**
Android **13%**
iOS **11%**
PHP **6%**
R **7%**
Other **28%**

0% 10% 20% 30% 40% 50% 60%

Demand for cloud computing skills has increased again this year with 54% of respondents forecasting a requirement. Respondents showed a continuing strong demand for software development skills, with Python and .NET leading the ranking of specific technical skills companies have the greatest demand for, however demand for JavaScript has dropped significantly to 17% (34% 2020). PHP has dropped and is now at the bottom of the list with only 6% of this year's respondents as their top tech skills requirement, compared to 11% last year.

CLOUD COMPUTING IS THE TOP SKILLS REQUIREMENT

Benchmark 1:

Smaller Companies
(up to 35 employees)
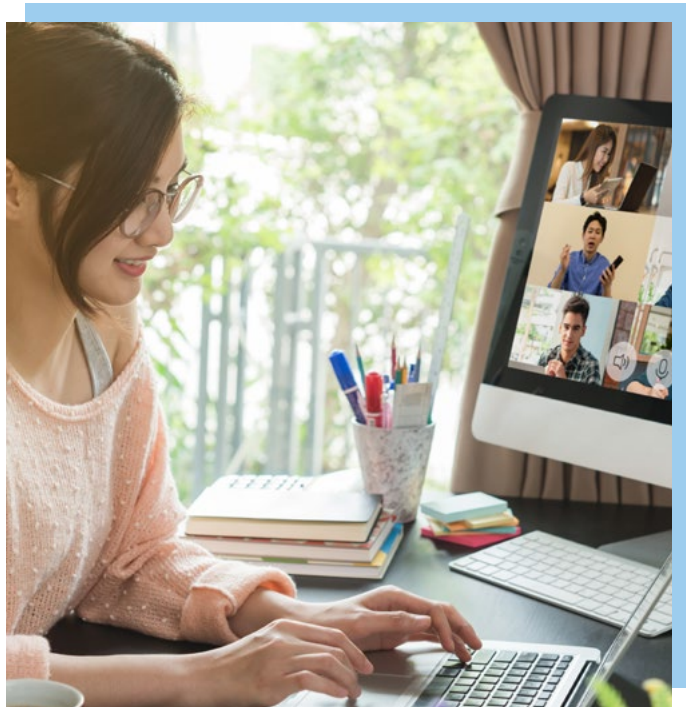
Reflections on 2020

2020 was an interesting year for smaller businesses with an almost identical number of businesses reporting an increase in sales as a decrease (47% increase in sales, 44% decrease in sales). Increased profit margins were reported by 37% of respondents for 2020 (down from 2020, 51%).

69% of respondents from smaller businesses have an optimistic outlook for the next 12 months, compared to 75% in the previous year.

16% of smaller businesses reported that Covid had a positive effect on their business, however 37% of respondents reported the opposite. Almost half of all respondents reported that it had little or no effect on their business in the last year.

69%
HAVE / AN
OPTIMISTIC
OUTLOOK
FOR / THE / NEXT
12 / MONTHS

International
sales

50% of smaller businesses are selling internationally, up from 47% last year. 28% plan to export in the future which is down slightly when compared to the year by 5%, while those who remain unlikely to export has remained largely static at 22%.

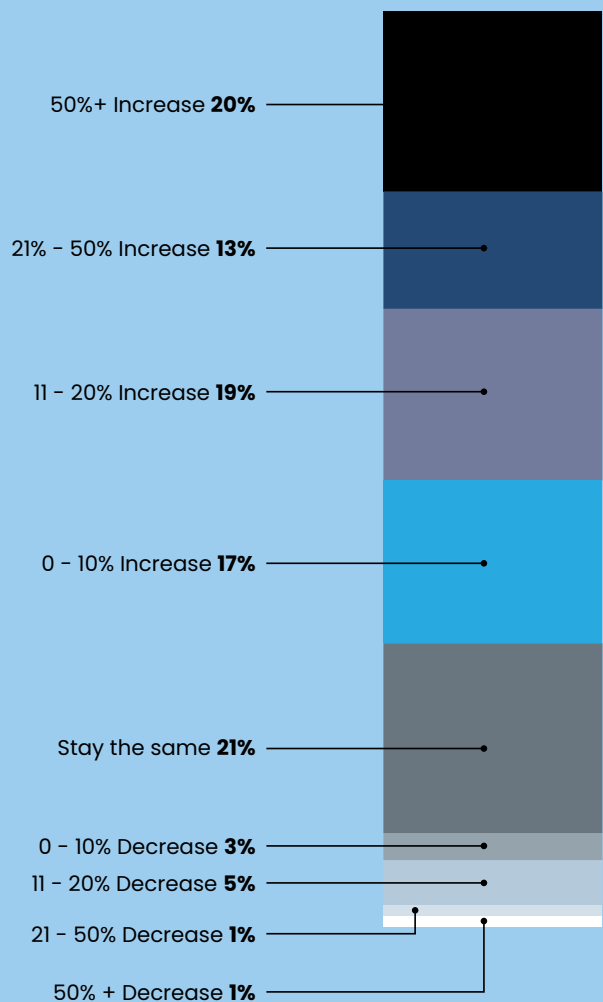|	2021	2020
Already exporting	50%	47%
Planning to export	28%	33%
Unlikely to export	22%	20%
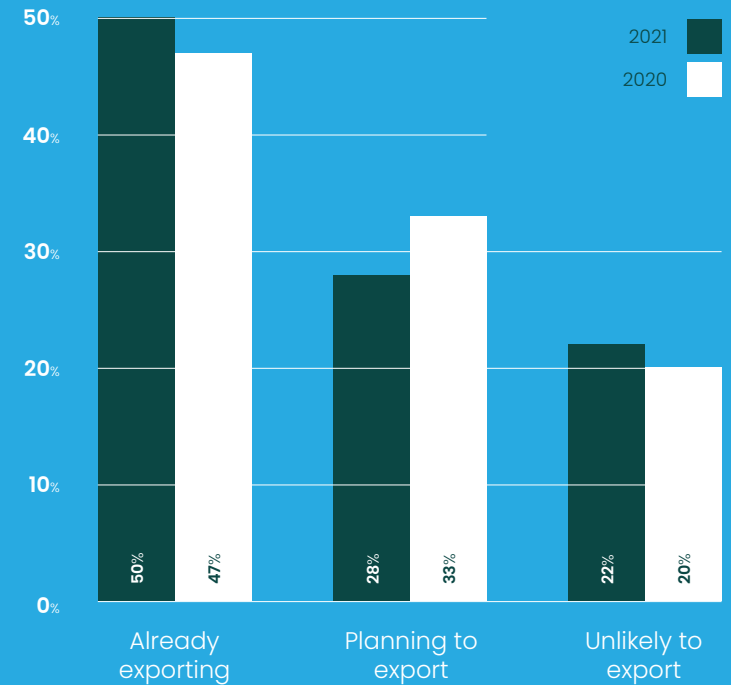
People and skills

66% of small businesses expect to increase staff numbers, which is down a little when compared to last year.

64% of respondents are likely to recruit university graduates (which correlates with results in 2019, when 64% also considered this a likely source of talent, but is down 9% on 2020's figures) and 36% think that they will take on college graduates (down from 42%). Smaller businesses show an increase demand for more senior, skilled talent, with demand dropping across all apprenticeship types. Graduate apprentices are the most popular type of apprentice, with 23% (39% 2020) of respondents from smaller companies saying they are likely to recruit them, followed by 10% (22% 2020) for modern apprentices and 4% for foundation apprentices. 36% reported that they are likely to employ someone who underwent retraining (CodeClan or other) in the next 12 months, which is down from 45% in the previous year.

Legend:
- Recruit more staff
- Stay the same
- Decrease in staff

Sales outlook for 2021

The sales outlook of small businesses for the next 12 months is largely unchanged compared to 2019. 69% of smaller businesses expect their sales to increase over the next 12 months (down slightly on 2020), 21% anticipate they will stay the same, while 10% forecast a decrease in sales (down 2% from last year).

- 50%+ Increase **20%**
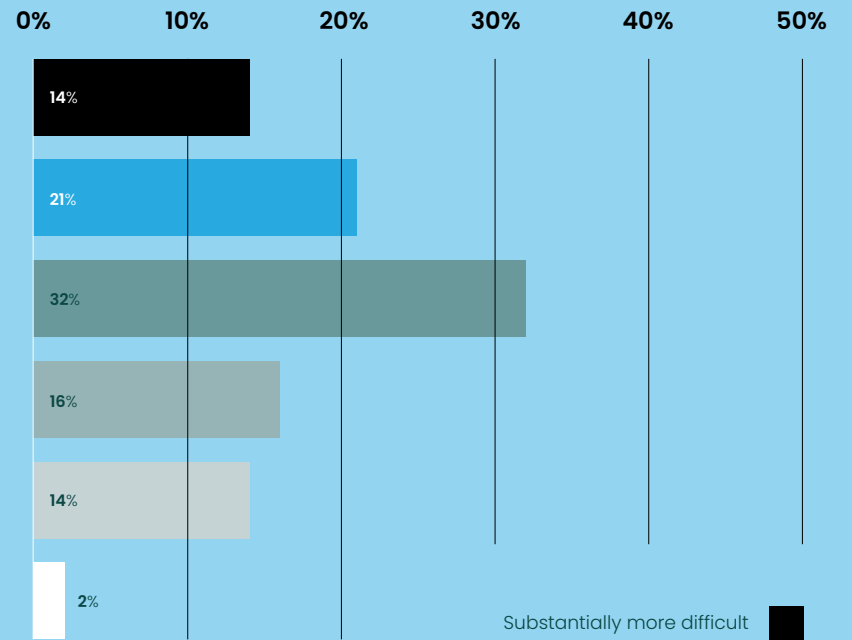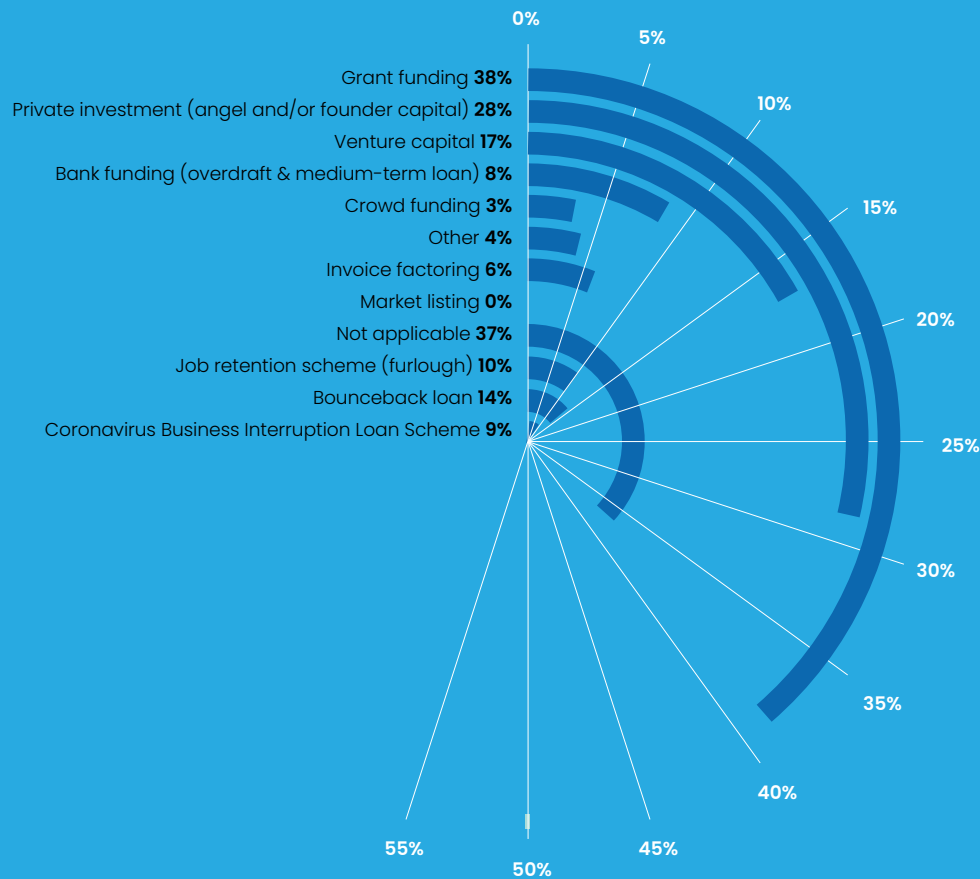- 21% - 50% Increase **13%**
- 11 - 20% Increase **19%**
- 0 - 10% Increase **17%**
- Stay the same **21%**
- 0 - 10% Decrease **3%**
- 11 - 20% Decrease **5%**
- 21 - 50% Decrease **1%**
- 50% + Decrease **1%**

Financial environment

Turnover for 98% of smaller businesses was in the region of £0–£5M. The figures are similar to previous years.

- £251k - £500k **14%**
- £0 - £250k **46%**
- £501k - £1M **19%**
- **100%**
- £1.1M - £5M **19%**
- **2%** £10M +
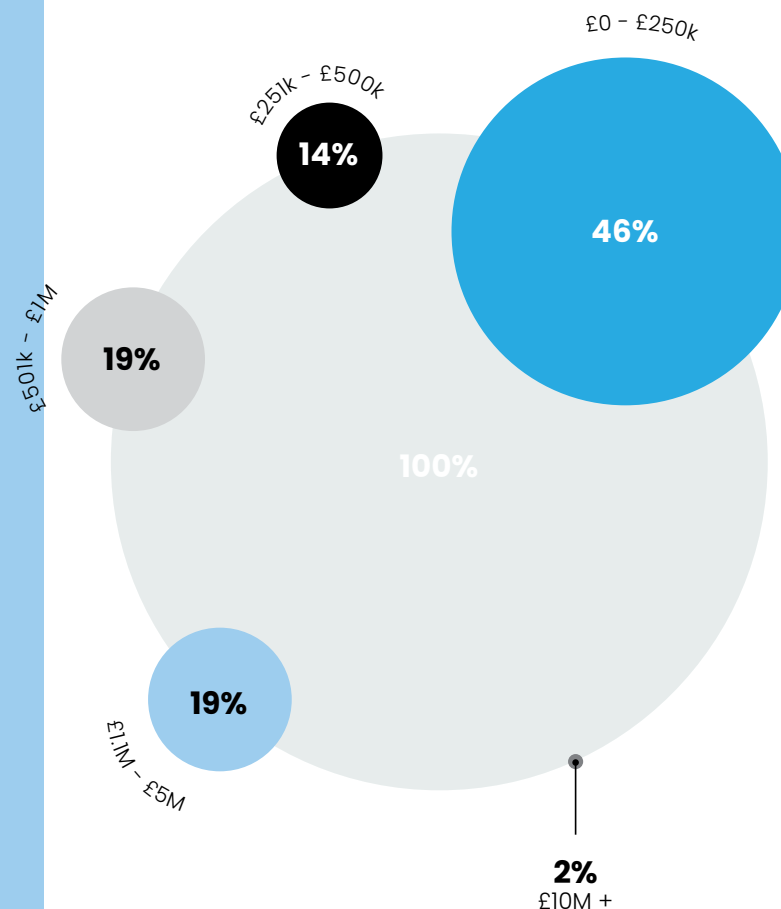
Funding needs

For the majority of smaller businesses that need additional finance, e.g. for growth in 2021, grant funding is the preferred option, followed by private investment and venture capital. The need for grant funding has decreased significantly from 58% last year to 38% in 2020.

Smaller businesses still intend to look to some Government measures to continue operating with 33% indicating that they will utilise furlough, Bounceback loans or CBILS in 2021.

Grant funding **38%**
Private investment (angel and/or founder capital) **28%**
Venture capital **17%**
Bank funding (overdraft & medium-term loan) **8%**
Crowd funding **3%**
Other **4%**
Invoice factoring **6%**
Market listing **0%**
Not applicable **37%**
Job retention scheme (furlough) **10%**
Bounceback loan **14%**
Coronavirus Business Interruption Loan Scheme **9%**

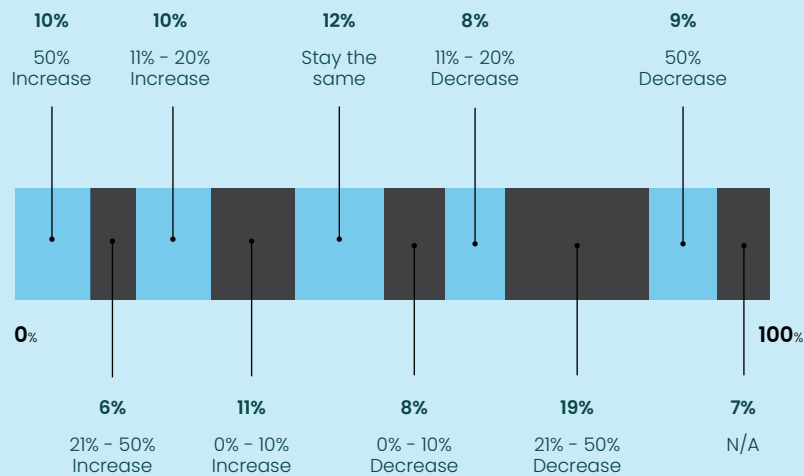0% 5% 10% 15% 20% 25% 30% 35% 40% 45% 50% 55%

Cashflow compared to last year

Smaller businesses reported a slightly more difficult cashflow situation than last year which was not unexpected. Whilst 30% experienced improvements (down from 47%), 35% reported difficulties (up from 22%).

0% 10% 20% 30% 40% 50%

14%
21%
32%
16%
14%
2%

Substantially more difficult
Somewhat more difficult
Little change
Somewhat better
Substantially better
N/A (business less than 12 months old)

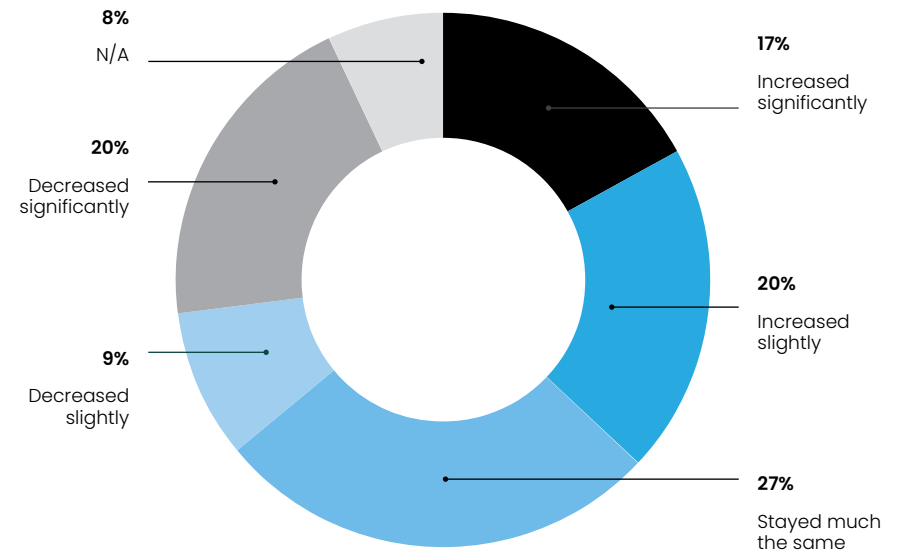# 2020 sales levels compared with 2019

2020 proved to be a difficult year for smaller business with 44% reporting a decrease in sales (17% 2019). 30% of businesses did however manage to increase sales, with 12% staying the same which is broadly similar to 2019 (15%).

30% INCREASED SALES

10% 50% Increase	**10%** 11% – 20% Increase	**12%** Stay the same	**8%** 11% – 20% Decrease	**9%** 50% Decrease

0%

100%

6% 21% – 50% Increase	**11%** 0% – 10% Increase	**8%** 0% – 10% Decrease	**19%** 21% – 50% Decrease	**7%** N/A

Profit margins

In 2020, 37% of smaller companies reported increased profit margins which is down on 2019, however broadly similar to 2018 when increased margins were 43%.

The percentage of smaller respondents who noted profit margins decreasing significantly was markedly higher than 2019 3%, at 20% for 2020.

8% N/A

20% Decreased significantly

9% Decreased slightly

17% Increased significantly

20% Increased slightly

27% Stayed much the same

Benchmark 2:

Medium-sized Companies (36 – 500 employees)

Reflections on 2020

Medium sized businesses have weathered the storm brought by Covid and Brexit well over the last year with 54% reporting an increase in sales and 36% reporting increased profit margins.
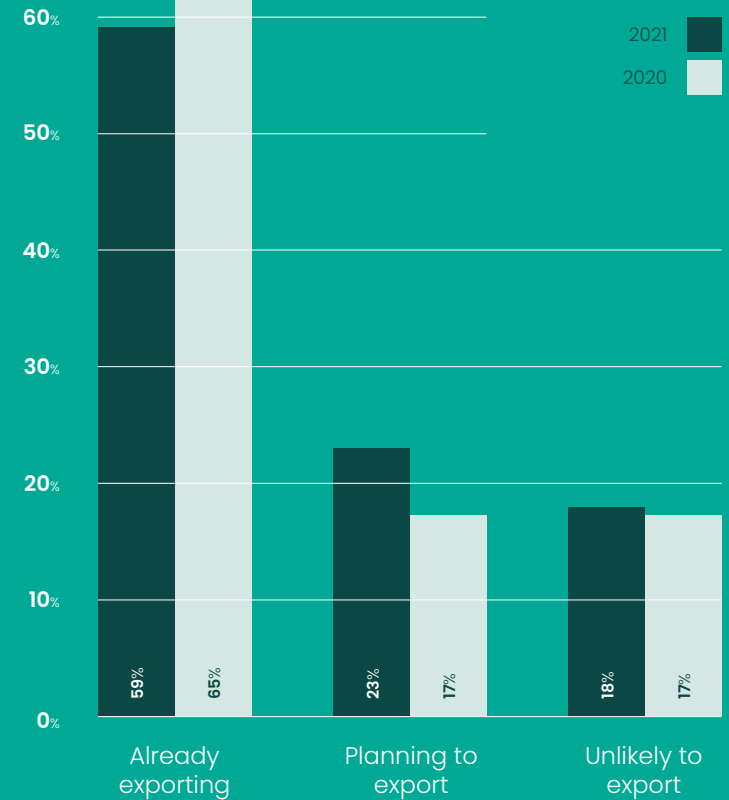
Optimism levels have increased significantly with 84% of medium-sized companies being optimistic about the next 12 months and 92% planning to recruit.

When advising of the impact of Covid Medium sized businesses, 30% reported that it had a large or substantial negative impact, with 67% reporting that it had little or no impact on their business.

92%

ARE PLANNING TO RECRUIT

International sales

The share of medium-sized business that are planning to export has increased by 6% from 17% in 2020, to 23% in 2021. Companies already exporting has decreased slightly down to 59% in 2020 (from 65%).
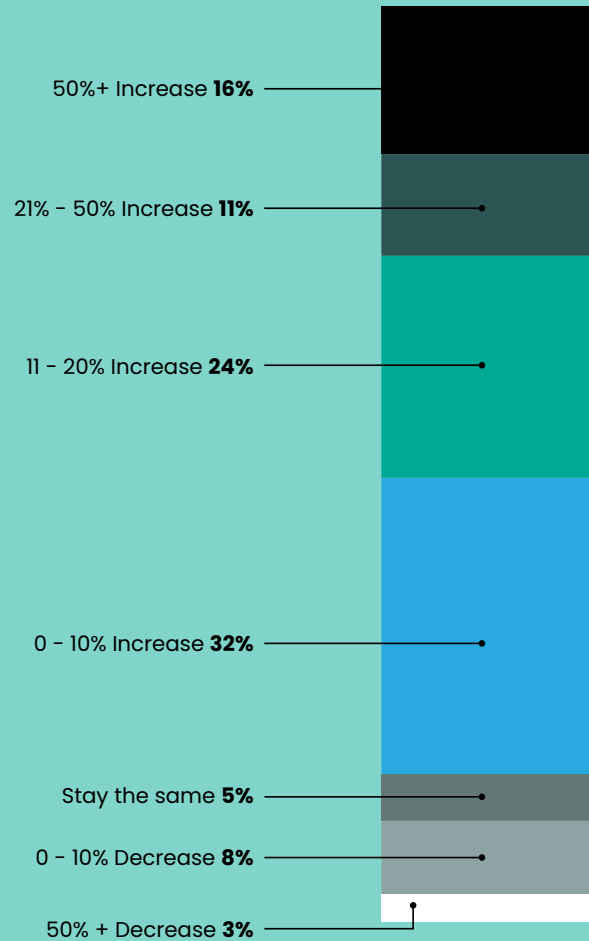
Chart: International sales

Legend: 2021, 2020

	Already exporting	Planning to export	Unlikely to export
2021	59%	23%	18%
2020	65%	17%	17%

People and skills

Legend
- Recruit more staff
- Stay the same
- Decrease in staff

92% of medium-sized businesses expect to increase staff numbers which is in line with expectations for 2020. 72% of respondents are likely to recruit university graduates and 52% are likely to take on college graduates (up 10% on last year). Simliar to last year 39% of medium businesses are likely to recruit graduate apprentices, and interest in modern apprentices remained steady at 28% this year from 23% last year. Demand for foundation apprentices remained at a similar level (17%). With interest growing in the area of retraining with 53% of companies considering hiring someone this year, from 42% last year.
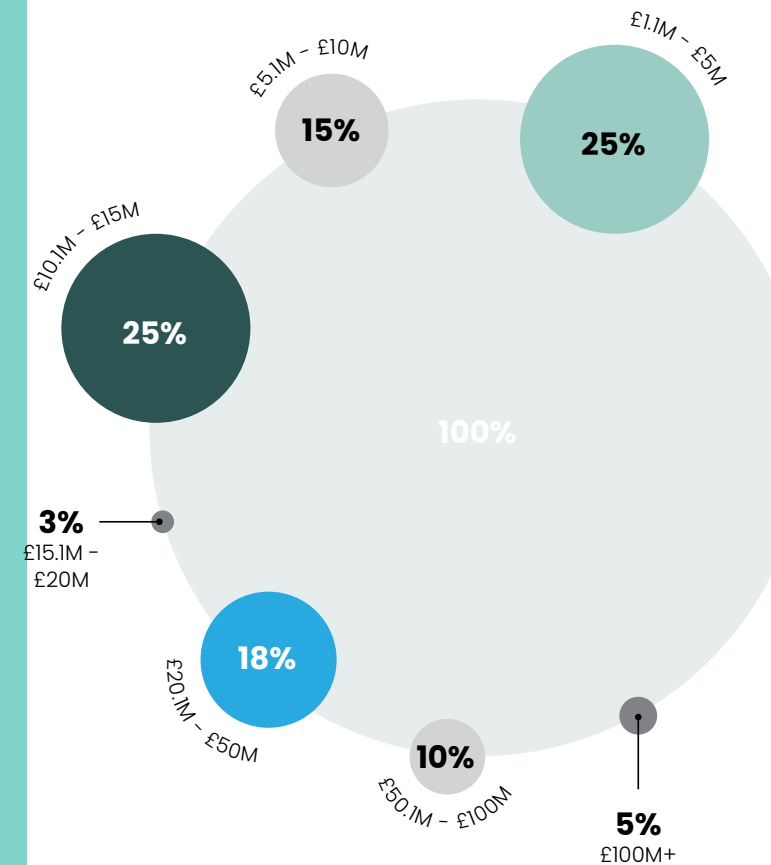
Sales outlook for 2021

83% of medium-sized businesses expect their sales to increase over the next 12 months (93% last year) whilst only 11% the medium-sized respondents forecast a fall in sales.

- 50%+ Increase **16%**
- 21% - 50% Increase **11%**
- 11 - 20% Increase **24%**
- 0 - 10% Increase **32%**
- Stay the same **5%**
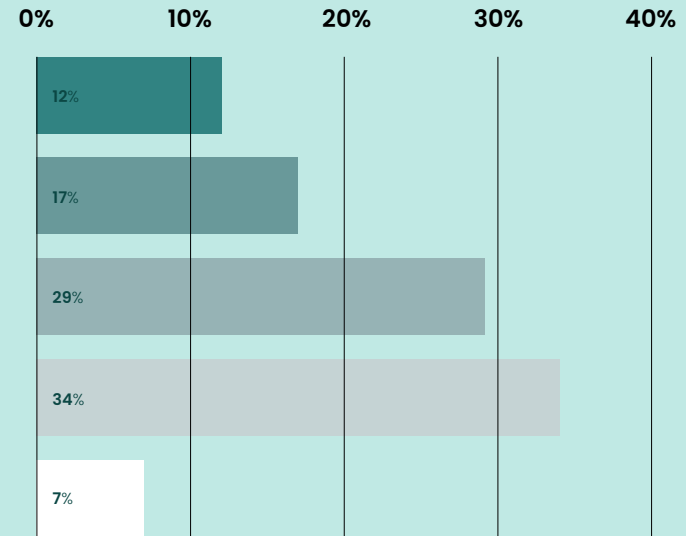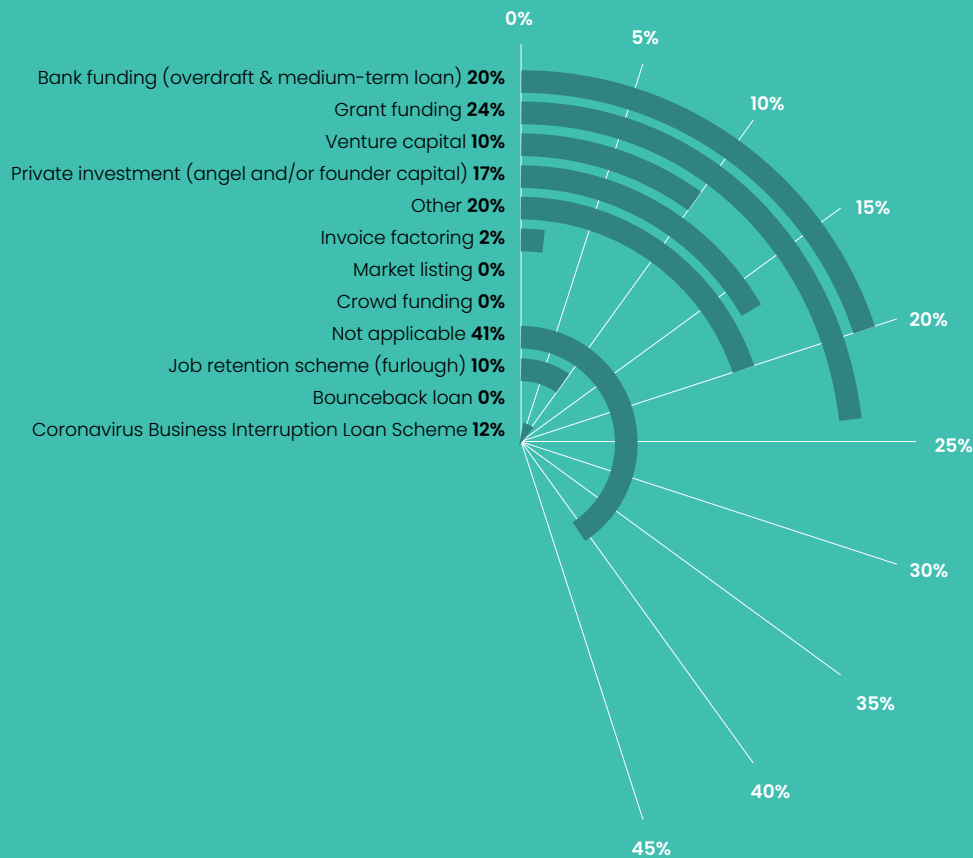- 0 - 10% Decrease **8%**
- 50% + Decrease **3%**

Financial environment

The majority of medium-sized businesses (40%) report turnover between £1-10M and 33% have more than £20M turnover, up 11% when compared to last year.

- £5.1M – £10M **15%**
- £1.1M – £5M **25%**
- £10.1M – £15M **25%**
- **100%**
- **3%** £15.1M – £20M
- £20.1M – £50M **18%**
- £50.1M – £100M **10%**
- **5%** £100M+

Funding needs

Medium-sized companies needing additional finance in 2021 identified bank funding, grant funding and venture capital as their top three options. 22% expect to continue to use Government measures including furlough and CBILS in 2021.

Bank funding (overdraft & medium-term loan) **20%**
Grant funding **24%**
Venture capital **10%**
Private investment (angel and/or founder capital) **17%**
Other **20%**
Invoice factoring **2%**
Market listing **0%**
Crowd funding **0%**
Not applicable **41%**
Job retention scheme (furlough) **10%**
Bounceback loan **0%**
Coronavirus Business Interruption Loan Scheme **12%**

0% · 5% · 10% · 15% · 20% · 25% · 30% · 35% · 40% · 45%

0% · 10% · 20% · 30% · 40%

12%
17%
29%
34%
7%

- Substantially more difficult
- Somewhat more difficult
- Little change
- Somewhat better
- Substantially better

41% IMPROVED CASHFLOW
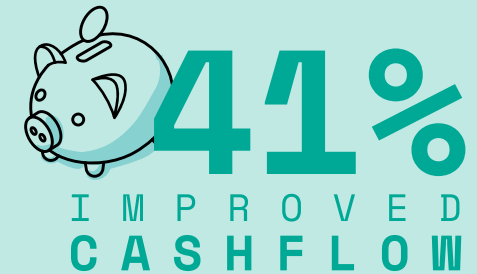
Cashflow compared to last year

41% reported improvements in cashflow, which is similar to last year's respondents who completed our survey prior to Covid. There was a 10% increase in those who had a more difficult time when compared to previous years.
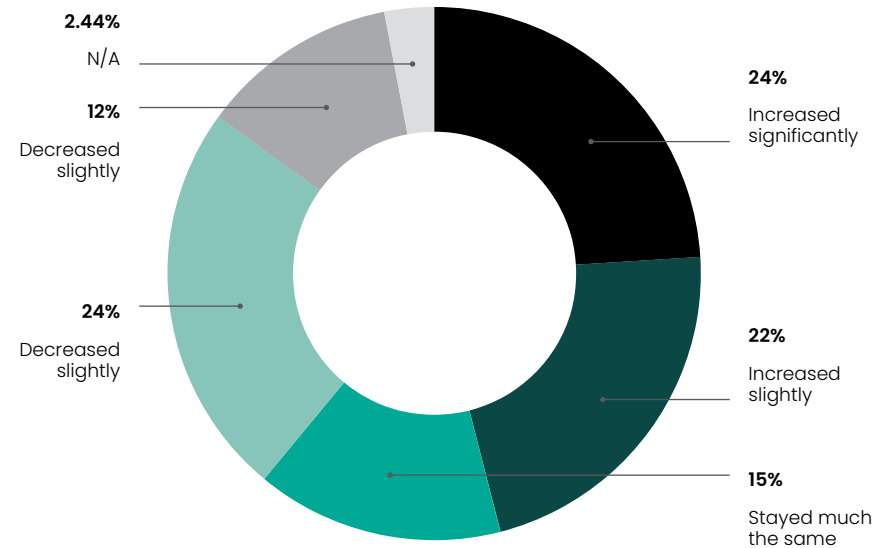
2020 sales levels compared with 2019

2020 was a more difficult year for medium sized businesses than previously. 54% reported an increase in sales (74% last year) and 36% saw a decrease in sales levels (up from 11%).

54%
REPORTED AN
INCREASE
IN SALES

12%	22%	10%	12%	2%
50% Increase	11% - 20% Increase	Stay the same	11% - 20% Decrease	50% + Decrease

0%   100%

10%	10%	15%	7%
21% - 50% Increase	0% - 10% Increase	0% - 10% Decrease	21% - 50% Decrease

Profit margins

In 2020, 46% of medium-sized businesses increased their profit margins which is down slightly when compared to 2019 (54%). At the same time, more medium companies (36%) experienced decreases in profit margins (up from 26%).

46%
OF BUSINESSES
INCREASED
PROFIT
MARGINS

2.44% N/A

12% Decreased slightly

24% Decreased slightly

24% Increased significantly

22% Increased slightly

15% Stayed much the same

29

# Benchmark 3:

## Larger Companies (500+ employees)

Reflections on 2020

The performance of larger companies in 2020 was mixed. A significant drop

in the share of companies reporting increased profit margins, from 85% to 59% companies seeing profit margins go up. Sales levels in 2019 (83%) remained similar to 2018 (85%). Larger companies are much more optimistic this year about the next 12 months than they were in 2019 (85% vs 66%).

When we asked larger companies about the impacts of Covid on their business 80% said it had had some impact. This is borne out in the figures reported across profit margins and sales performance.

International sales

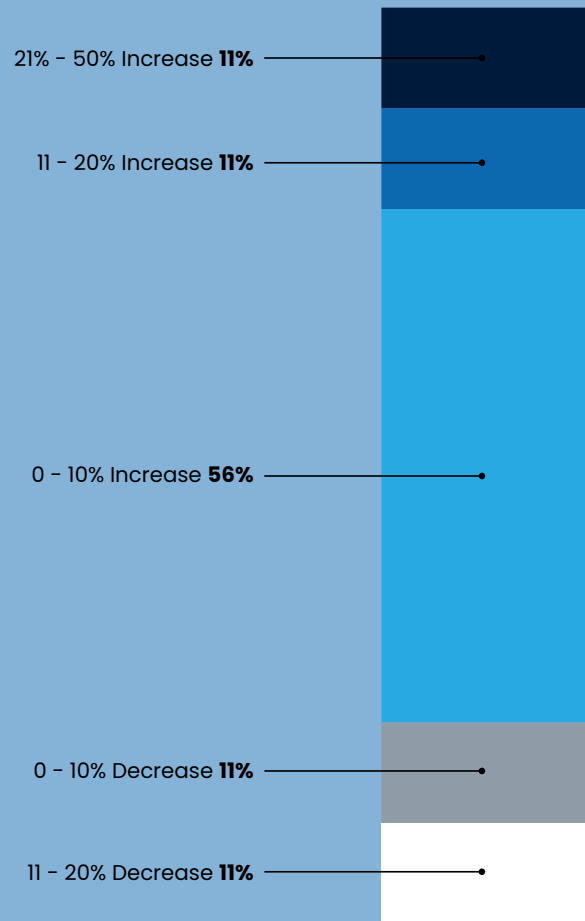100% of our larger business respondents are already exporting and plan to continue to do so.

Legend:
- 2021
- 2020

	Already exporting	Planning to export	Unlikely to export
2021	100%	0%	0%
2020	91%	0%	9%
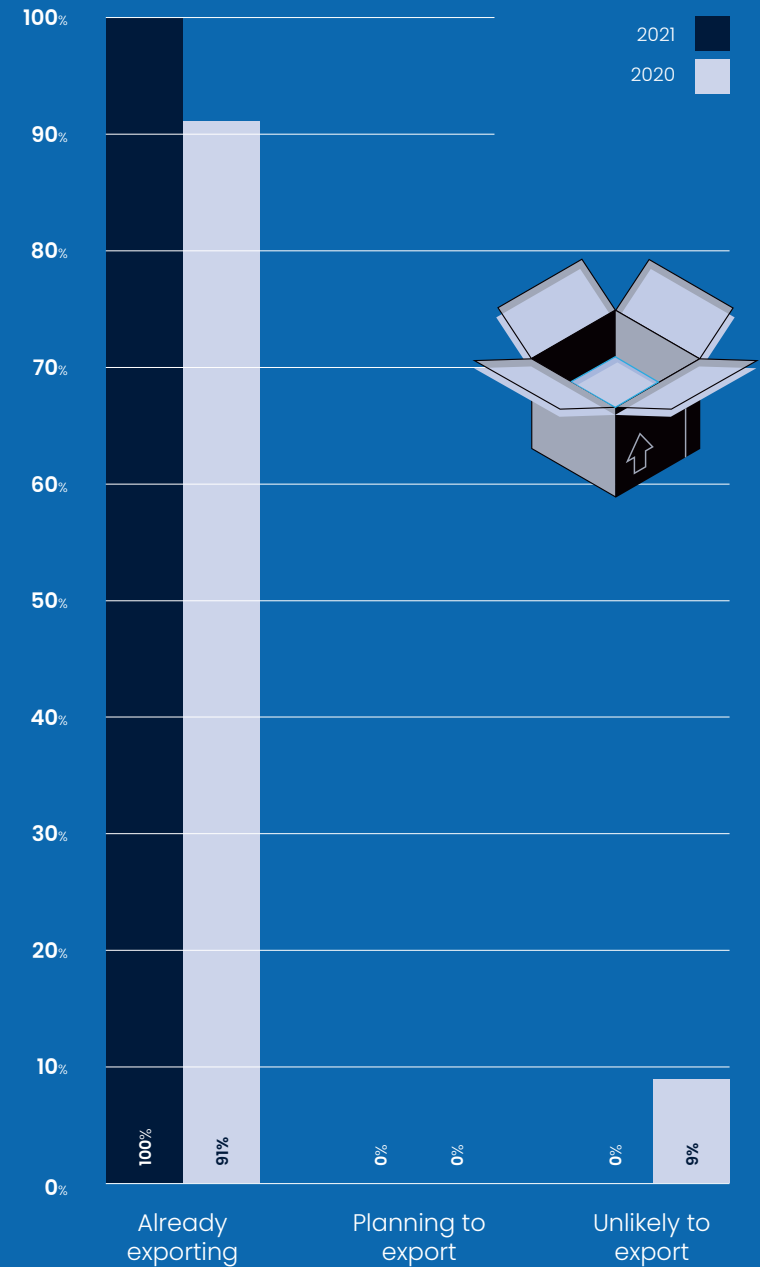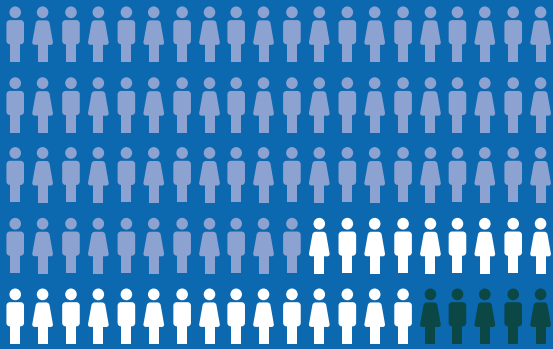
Recruit more staff
Stay the same
Decrease in staff

People and skills

With 71% of respondents expecting to increase their employee numbers this year, the recruitment outlook for larger businesses is slightly more positive than previously (up from 69% in 2020). 82% of respondents are likely to recruit university graduates (down from 88% last year) and 56% are likely to hire college graduates (down from 67%). Modern apprentices have over taken graduate apprenticeships for the first time with 54% likely to recruit from this pool, rather than graduates at 53%. 57% of large businesses are likely to hire a person that underwent retraining, which has increased by 9% when compared to last year.

Sales outlook for 2021

78% of larger business expect their sales to increase over the next 12 months. This is a similar figure to last year (83%), whilst the share of businesses expecting dropping sales levels increased from 4% to 22%.

21% - 50% Increase **11%**

11 - 20% Increase **11%**

0 - 10% Increase **56%**

0 - 10% Decrease **11%**

11 - 20% Decrease **11%**

Financial environment

In 2021 100% of larger businesses have a turnover of more than £100M which is the same as 2020.
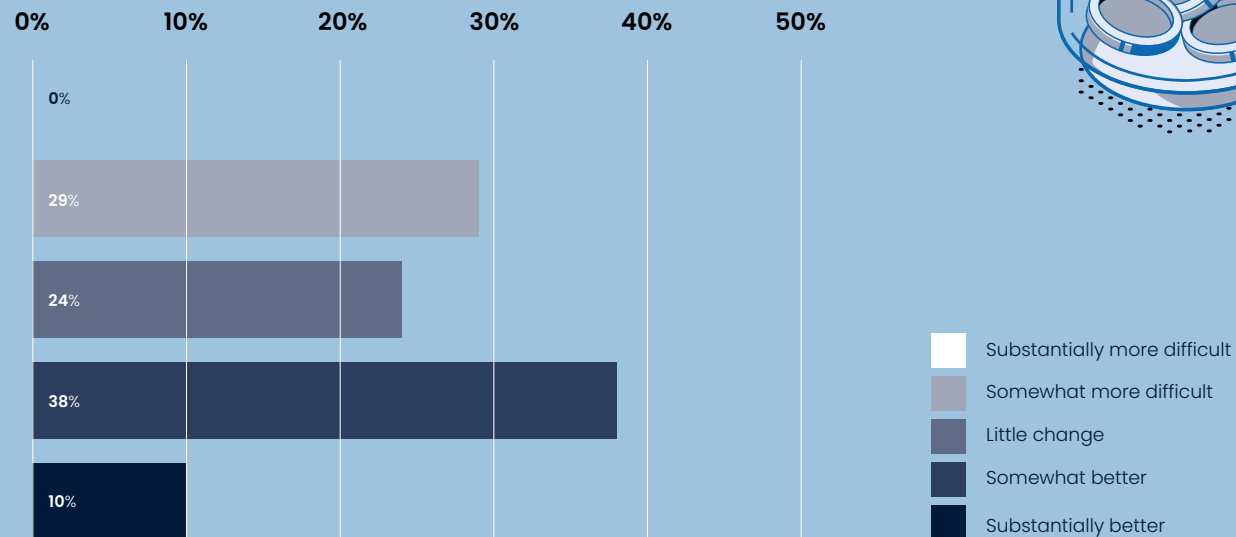
100%
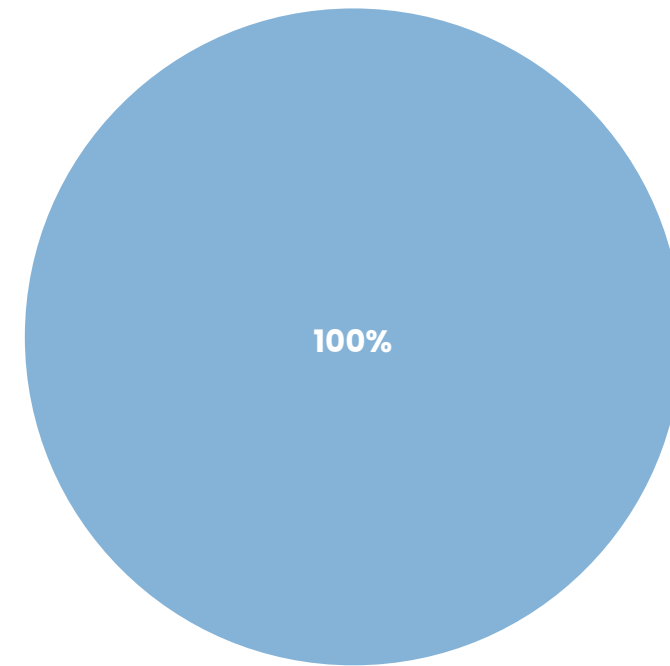
Cashflow compared to last year

There were more larger businesses reporting difficulties with cashflow in 2020 than previous years (29%). However, the cashflow situation of larger businesses has remained largely positive with 48% reporting an improved situation (63% 2019).
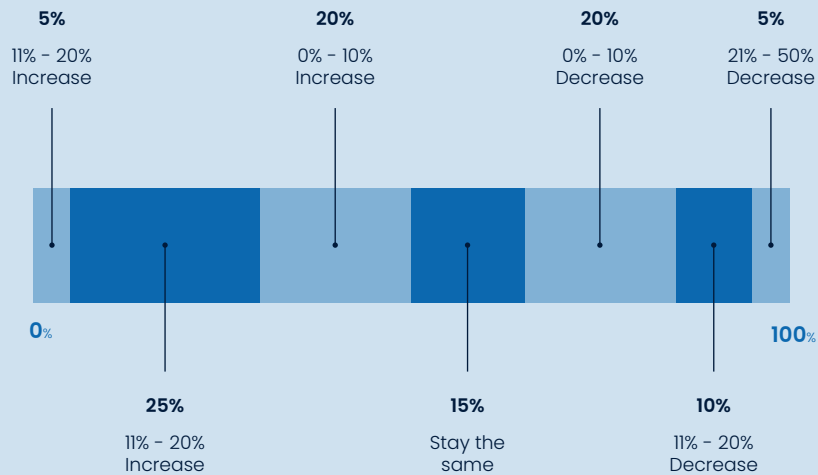
48%
IMPROVED CASHFLOW

0%	10%	20%	30%	40%	50%

- 0%
- 29%
- 24%
- 38%
- 10%

Legend:
- Substantially more difficult
- Somewhat more difficult
- Little change
- Somewhat better
- Substantially better

2020 sales levels compared with 2019

The sales situation in larger businesses is somewhat positive with 50% reporting an increase in the last 12 months (83% previous year). The percentage of larger businesses reporting lower sales did increase significantly from 6% to 35%.

50%
REPORTED AN
INCREASE IN SALES
IN THE LAST 12 MONTHS

5%
11% - 20%
Increase

20%
0% - 10%
Increase

20%
0% - 10%
Decrease

5%
21% - 50%
Decrease

0%

100%

25%
11% - 20%
Increase

15%
Stay the
same

10%
11% - 20%
Decrease

Profit margins

The share of larger businesses reporting increased profit margins has decreased significantly from 59% in 2019 to 39% this year. 38% of respondents saw profit margins decrease, compared to 13% in 2019.

10%
Increased
significantly

38%
Decreased
slightly

29%
Increased
slightly

24%
Stayed much
the same
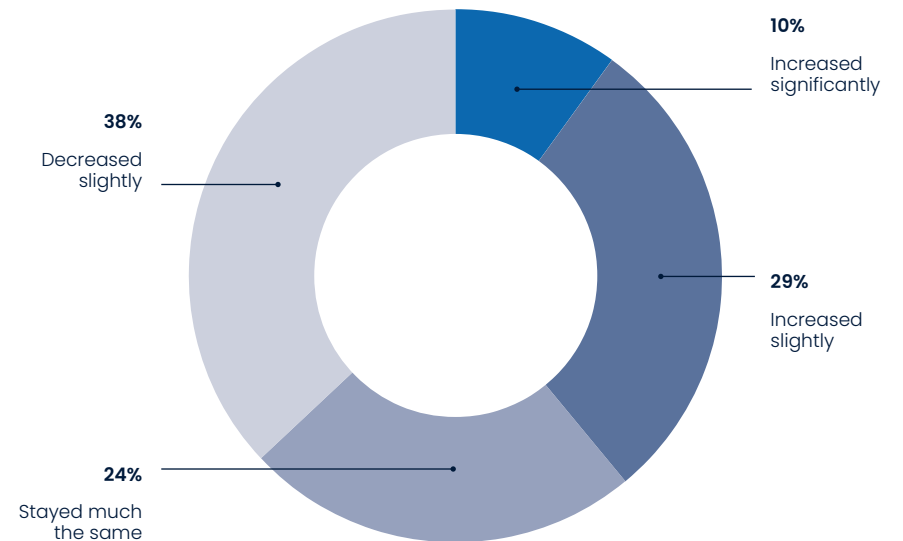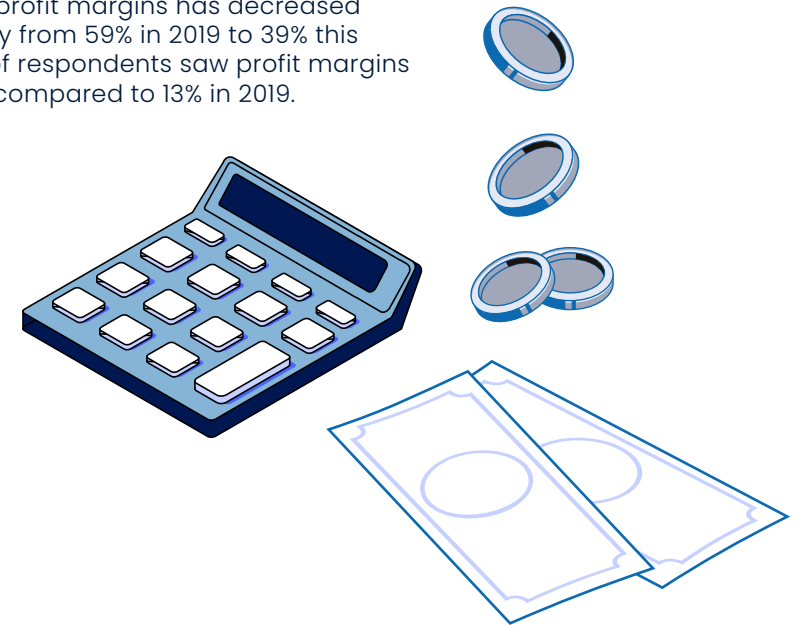
ScotlandIS commentary
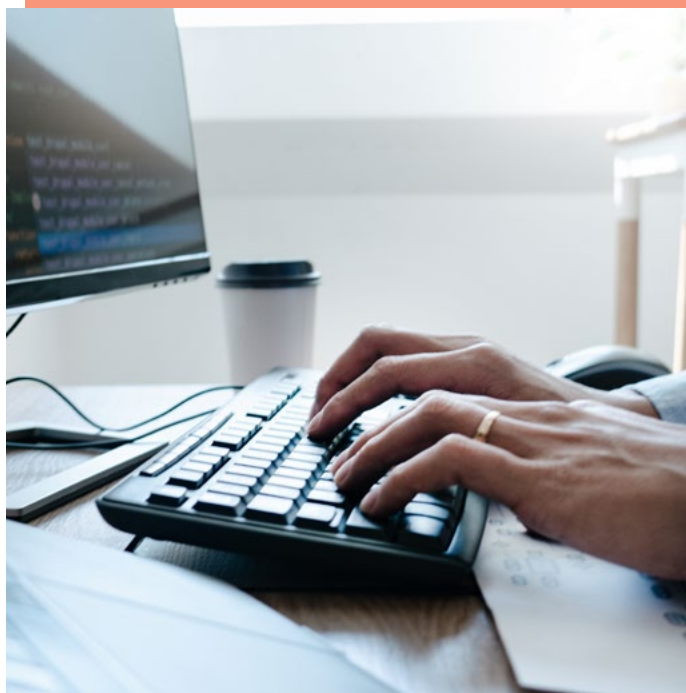
Looking forward to the year ahead

The last 12 months have been difficult for us all and continue to impact on our society and the business landscape in which we find ourselves.

Just over half of the businesses who responded this year said Covid had little or no effect on their business and a tenth had felt only positive effects. While this is heartening to the sector as a whole and shows great opportunity for growth, a large percentage of businesses did struggle. This is borne out throughout the survey with decreased levels of optimism, sales and profit margin.

The further changes brought about by Brexit and changes in legislation have so far had little effect, either positive or negative, on the industry with almost three quarters of respondents reporting such. There is a growing minority who are forecasting problems ahead from challenges that may not have been fully realised and as the industry body, we will continue to keep you abreast of the situation and lobby on your behalf for the issues that are most pertinent to your business.

As a whole, the sector is optimistic for the coming year. Digital is critical and has proven so over the last year, standing up the economy and helping other sectors successfully achieve the forced digital transformation that Covid has brought about.

While the economy is beginning to open up, social distancing looks to remain in place for some time to come. Working from home looks to continue to be commonplace even after offices and workplaces open up and so companies selling products or services that enable this show increased optimism for the future.

There has been a marked impact on the number of companies looking to hire junior talent in the coming year. This has decreased significantly from previous years, with companies looking to hire business ready talent to meet the current heavy demand. We hope, as normality resumes a little over the coming months, to see an upturn in the desire to train the future of our industry once again.

The review of 2020 shows that Scotland's tech sector remained resilient with almost half of survey participants increasing their sales and increasing their profit margins, despite the ongoing coronavirus pandemic.

With more companies than ever before engaging or planning to engage with international markets our sector is showing growth abroad more than previously. We've seen an increase in companies looking to engage in new markets like Australia and New Zealand, while Europe, which for a long time has had the highest share of our exports has dropped a little in the wake of Brexit.

There are opportunities across new technologies, with 5G mentioned by multiple respondents. Similarly, cloud technologies and SaaS products are both commented on as growth areas, and demand for cloud skills outstripping every other technology skillset this year.

Finally, we know that the road ahead will continue to be tough as we emerge from the pandemic, however the sector has shown itself to be resilient over the last year. Optimism for growth is high and rightly so. As a sector we continue to grow through collaboration and to prove that digital does underpin every facet of society and is critical to modern life.

Services to benefit you

ScotlandIS has evolved and adapted over the past twelve months to continue to provide the services to the sector that you expect from your trade body.

We're building a thriving digital technology ecosystem in Scotland and supporting our members to grow nationally and internationally. Members join us because of our track record, our connections and authority within the industry. They join us because they know we can help them build their business and drive the industry forward.

We have influence and connections within the industry, with Scottish and UK Governments and the public sector. The implications for business of our political lobbying and policy-making are far reaching, ranging from procurement to skills. The positive work we do benefits every business in the sector.

We assess emerging trends and bring together knowledge, events and insights from leading experts to enable all businesses to understand and make informed decisions to drive growth.

ScotlandIS brings intelligent influence to national strategic debates. We speak with authority across the spectrum of issues that surround the information revolution.

In partnership with Scottish Government we created the Digital Nation Challenge to ensure that industry had a voice and was able to help steer the strategic vision of Scotland. With industry we created the No One Left Behind initiative (now Connecting Scotland) a £20 million fund to get connectivity, devices and training to those citizens who did not have access. Through our partnership with Technology Scotland and the MaaS Scotland cluster, we successfully lobbied Transport Scotland to create a £1 million fund to pilot projects that will digitally transform journeys throughout Scotland.

We're connected with clusters of technology companies throughout Scotland, the UK and beyond who are working on immersive tech, cleantech, cyber, data, software development and much more. We work with our partner organisations to create opportunities for collaboration, knowledge sharing and growth.

Collaborations and innovation to tackle the skills gap

We know there is a critical shortage of skilled software and IT people in Scotland. Securing the talent of the future is high on our agenda. We are focused on connecting skilled people with business to realise potential.

Seen as forward-thinking and enabling, ScotlandIS advocates and encourages grass roots interest in computer science, increasing diversity and higher participation throughout the education system.

The last twelve months have seen 70 graduate through our Digital Skills courses, run in partnership with the University of the Highlands & Islands. Covering a mix of Level 9 modules in Cyber Security and Level 11 modules in Applied Data Science and delivered remotely, we upskilled individuals with a previous background in STEM. Allowed them the opportunity to join one of the fastest growing industries in Scotland by undertaking one of these Data or Cyber courses, as a way of changing career path or perhaps refreshing skills after a career break.

We brought together a unique group of leading figures from Scotland's digital technology and education sectors to form a new Skills Board, with the aim of bridging the country's digital skills gap and providing strategic advice to the burgeoning sector. The role of the board is not a reactive one, but to scan the horizon and offer proactive consultation and strategic input. They will be providing collaboration wherever possible across a variety of private sectors, as well as government and education. This board does not replicate the great work of the digital economy team within SDS, but rather works with them and encourages more active participation from across industry.

We launched our Digital Critical Friend pilot programme with DYW Glasgow. This project provides pupils in every secondary school in Glasgow with a direct connection with digital technology practitioners and companies, as part of a new initiative to meet the rapidly growing and changing skills requirements of the digital industry. With the aim to help provide industry mentors for computer science teachers across Glasgow, this pilot will allow us to let teachers know what's happening, where the new technologies are encourage young people into the computing and tech subjects and help them advocate for their department.

About ScotlandIS
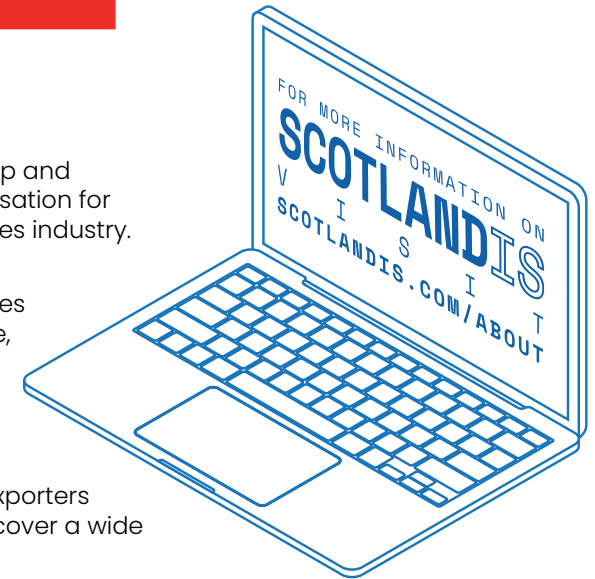
→ ScotlandIS is the membership and cluster management organisation for Scotland's digital technologies industry.

→ ScotlandIS represents Scotland's digital technologies industries, including software, telecommunications, IT and digital media businesses.

→ ScotlandIS members vary from global companies and internationally recognised exporters to very small start-ups and cover a wide range of skills and markets.

→ ScotlandIS is at the heart of Scotland's digital economy, shaping, changing and driving it forward. We work with members and partners to support the wider digital transformation of business and society.

→ ScotlandIS provides members with connections up, down and across the industry, relevant market intelligence and we act as a single voice to policy makers. Ensuring a continuing supply of current and future skills is a major area of focus and we facilitate a range of special interest groups and clusters including cyber, infrastructure, software engineering and Mobility as a Service.

→ ScotlandIS works closely with Scottish Government, Highlands and Islands Enterprise, Scottish Enterprise and Skills Development Scotland to underline the importance of our industry to the Scottish economy.

FOR MORE INFORMATION ON
SCOTLANDIS
VISIT SCOTLANDIS.COM/ABOUT

Methodology

The Scottish Technology Industry Survey 2021 was conducted between December 2020 and February 2021 through an online survey platform. The survey received 287 responses in total, of which 210 have been selected for analysis after discounting duplicates and unusable responses. The respondents include both ScotlandIS members and non-members.

For the overviews on Scotland's digital technologies sector and on digital technologies employment the following standard industrial classification (SIC) and standard occupational classification (SOC) codes have been used to define digital technologies businesses and jobs:

→ **Number and size of digital technologies businesses**
UK Business Counts, compiled from the Inter Departmental Business Register (IDBR), available through the Nomis service provided by the Office for National Statistics.

→ **GVA**
Regional gross value added (balanced) information, provided by the Office for National Statistics, December 2018. Available at: https://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/nominalandrealregionalgrossvalueaddedbalancedbyindustry . Based on SIC 2007 divisions 26 and 58-63 as more detailed figures not available. For more information about the change in methodology for calculating GVA, please see "Information" tab of the data spreadsheet. Information on the forecast GVA growth is available in: Digital Scotland, Scotland's Digital Technologies: Summary Report 2019, September 2019, https://www.skillsdevelopmentscotland.co.uk/media/43306/scotlands-digital-technologies-summary-report.pdf

→ **Exports**
Scottish Government: Export Statistics Scotland, January 2019, available at http://www.gov.scot/Topics/Statistics/Browse/Economy/Exports/ESSPublication/ESSPDF. Based on SIC 2007 divisions 26 and 58-63 as more detailed figures not available.

→ **Employment in digital technologies companies**
Business Register and Employment Survey, available through the Nomis service provided by the Office for National Statistics.

→ **Employment in digital technologies roles, salary information, future skills demand and skills pipeline information:**
Digital Scotland, Scotland's Digital Technologies: Summary Report 2019, September 2019, available at: https://www.skillsdevelopmentscotland.co.uk/media/43306/scotlands-digital-technologies-summary-report.pdf

Digital technologies sector definition by main area of business

SIC Code	Description
18203	Reproduction of computer media
2611	Manufacture of electronic components
2612	Manufacture of loaded electronic boards
262	Manufacture of computers and peripheral equipment
263	Manufacture of communication equipment
264	Manufacture of consumer electronics
268	Manufacture of magnetic and optical media
2731	Manufacture of fibre optic cables
5821	Publishing of computer games
5829	Other software publishing
611	Wired telecommunications activities
612	Wireless telecommunications activities
613	Satellite telecommunications activities
619	Other telecommunications activities
6201	Computer programming activities
6202	Computer consultancy activities
6203	Computer facilities management activities
6209	Other information technology and computer service activities
6311	Data processing, hosting and related activities
6312	Web portals
6399	Other information service activities not elsewhere classified
9511	Repair of computers and peripheral equipment
9512	Repair of communication equipment

Digital technologies sector definition by occupation

SOC Code	Description
1136	Information Technology and Telecommunications Directors
2133	IT Specialist Managers
2134	IT Project and Programme Managers
2135	IT Business Analysts, Architects and Systems Designers
2136	Programmers and Software Development Professionals
2137	Web Design and Development Professionals
2139	Information Technology and Telecommunications Professionals not elsewhere classified
3131	IT Operations Technicians
3132	IT User Support Technicians
5242	Telecommunications Engineers
5245	IT Engineers

ScotlandIS

Oracle Campus
Blackness Road
Linlithgow
EH49 7LR

→ scotlandis.com

✉ info@scotlandis.com

📞 +44 (0) 1506 472200

🐦 @scotlandis