Scottish Technology Industry Survey 2017



**ScotlandIS** 

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"Technology can be used as a tremendous force for good if we really understand how we interact with it and apply its unique position in our lives positively."

Founder and CEO, DOGFI.SH Mobile Ltd

## 02 Welcome

ScotlandIS and Nine Twenty would like to thank everyone who took part in this year's Scottish Technology Industry Survey for their invaluable input, providing feedback on performance in 2016 and their forecasts for 2017.

Each year the Scottish Technology Industry Survey provides a measure of the industry's health, performance during the last year and expected development in 2017. The analysis breaks down the results by size of company; small, medium and large. Also included at the end of this report is an analysis of the employment and skills outlook for 2017.

This survey has been conducted for more than 10 years, allowing trends and developments over the years to be identified. These annual survey reports are a valued resource for business leaders, investors and public sector stakeholders.

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.

This survey fieldwork was carried out by ScotlandIS in early 2017. Nine Twenty generously sponsor the survey.

#### **Polly Purvis**

Chief Executive, ScotlandIS

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Please note: All numbers shown on the infographics within denote percentages.

# Industry Continues To Grow Despite Challenges

The results of this year's survey show that Scotland's digital technologies industry continues to grow despite an uncertain political environment. 48% of businesses reported increased profit margins in 2016 and the share of companies experiencing decreasing margins was at a historic low.

82% of businesses expect sales to increase in 2017 even though the predicted increases are smaller than in the previous year.

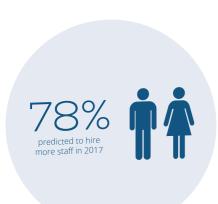
Optimism has improved since last year with 78% of businesses having a very optimistic or optimistic view for 2017, compared to 70% in 2016, despite concerns about political uncertainty and developments linked to Brexit and the election of the new US President.

48% experienced increase in profit marrins

82% expected sales

expected sales increase in 2017

78%

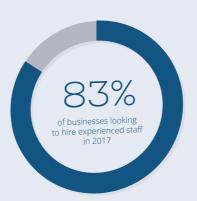


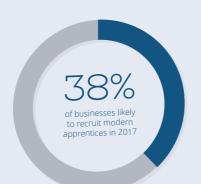
## Employment Growth Picking Up

After a slight downturn last year, predicted employment growth is picking up again. 78% of businesses forecast they will hire more staff in 2017, as opposed to 66% in 2016. The percentage of companies planning to reduce employee numbers has fallen from 15% to 1%.

Industry anticipates changes to where it will source new talent from. 73% of companies predict recruiting most new staff from Scotland, up from 60% in 2016. 9% forecast new talent will come from outwith the UK, compared to 21% in 2016. This is likely to be a sign of concerns related to Brexit and the decreasing attractiveness of the UK for international talent.







# Higher Demand For Experienced Staff And Modern Apprentices

Demand for graduate recruitment remains strong with 72% of all businesses reporting they are likely to recruit graduates in 2017. However, to aid business growth, the greatest demand is for experienced staff, with 83% of companies requiring these operatives and 77% requiring graduates.

The demand for modern apprentices has picked up. 38% of respondents reported that they are likely to recruit modern apprentices in 2017, compared to 29% in 2016. This may be linked to the introduction of new digital apprenticeship frameworks in Scotland.



4 | Key Messages

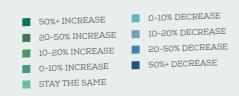
## Review Of 2016

Businesses reported another good year in 2016, with sales growth and profit increases, even though these were more moderate than in 2015.

#### Figure 1

#### Sales Level

Sales in 2016 continued to grow with 70% of businesses reporting an increase, a similar level to 2015. However overall, sales increases were lower than in the previous year, with only a fifth of businesses reporting an increase of more than 20% in 2016 (as opposed to 27% in 2015). At the same time, fewer companies reported a decrease in sales in 2016 (10%) than in 2015 (16%).



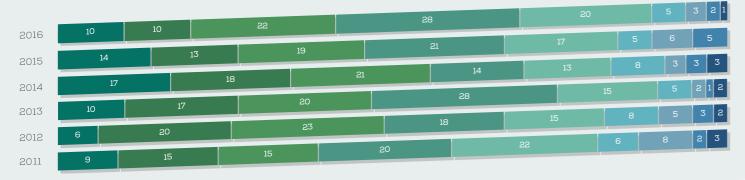
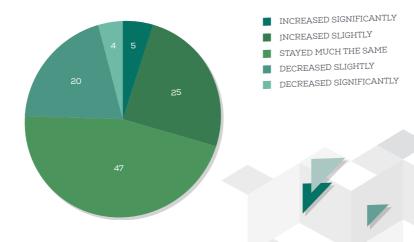


Figure 2

## 2016 Actuals Compared To Budget At The Beginning Of 2016

Results show that 2016 was as good as or better than predicted at the outset of the year. 30% of businesses reported that their actual results were better than budgets set at the start of the year. For 47% of businesses, actuals were very much in line with their original forecasts, compared to 35% in 2015. A further 24% reported actual results were worse than expected.



#### Figure 3

## Profit Margin Performance In 2016 Compared To 2015

The reported increase in sales performance for 2016 also contributed to profit. Businesses again experienced an increase in profit margins with 48% reporting increased margins and 38% stable margins.

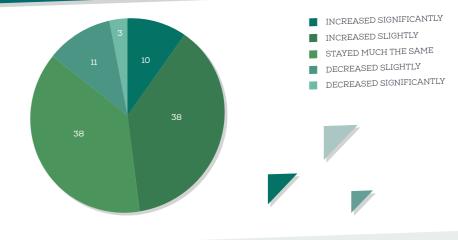
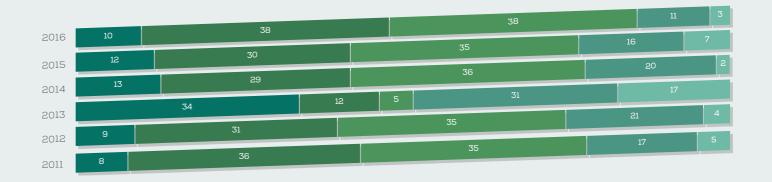


Figure 4

## **Profit Margins Over The Years**

In addition to the rise in the number of companies reporting increased margins, there was a decline in those reporting a significant decrease compared to 2015. A comparison of profit margins since 2011 shows that decreasing margins reached a historic low in 2016, with the lowest number of companies reporting margins under pressure.





6 | Review Of 2016 | Review Of 2016 | 7

## 05

## **Outlook For 2017**

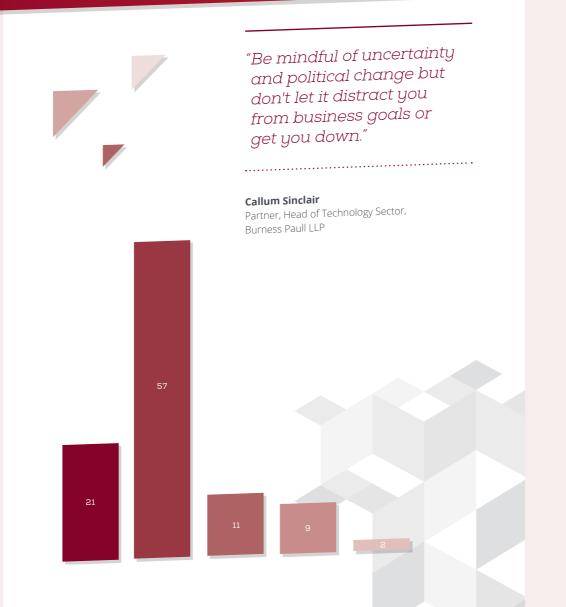
Optimism has increased since last year with 78% of businesses having a very optimistic or optimistic view for 2017, compared to 70% in 2016. Only 11% have a pessimistic or very pessimistic view.

#### Figure 5

## **Optimism**

About a third of respondents linked their optimism to the introduction of new products, strong demand for existing products and services or a growing market. Another reason cited by a number of businesses was an increase in sales and marketing effort. 9% of respondents indicated that political uncertainty tainted their outlook for 2017. The current political situation was also mentioned by one fifth of respondents when asked about their three key challenges in 2017, namely the election of President Trump in the US, Brexit and a potential second independence referendum in Scotland.

- VERY OPTIMISTIC
- OPTIMISTIC
- NO CHANGE
- PESSIMISTIC
- VERY PESSIMISTIC



#### Figure 6

# Expected Change In Sales Over The Next 12 Months

Businesses are even more optimistic about expected sales levels for 2017 with 82% of companies predicting an increase and 16% expecting sales to stay the same. These figures are broadly in line with forecasts in the 2016 survey. However, there was a reduction in the percentage of businesses forecasting a decrease from 14% in 2016 to 3% this year.

50%+ INCREASE

10-20% INCREASE

STAY THE SAME

0-10% INCREASE

20-50% INCREASE

0-10% DECREASE

10-20% DECREASE

20-50% DECREASE

50%+ DECREASE



"Learn the difference between a good idea and a commercial one. They're not the same thing."

.....

## Dave Sharp

Director, Binary Asylum



8 | Outlook For 2017

## 06 International

Export levels remain high with a continued focus on the European and US markets.

#### Figure 7

## Attractive Markets For Exports

When asked to highlight three geographical markets, respondents ranked Europe (52%), North America (52%) and Rest of UK (47%) as the most attractive markets for sales outside Scotland.

"Challenging times mean changing times and that creates opportunities for small and medium-sized companies."

......

#### Neil Logan

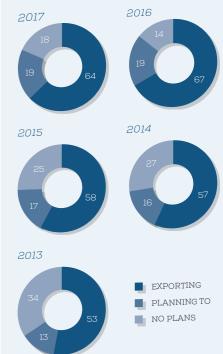
CEO, Incremental Group



#### Figure 8

## **Export Levels**

Engagement in international markets remains at a high level with 64% of businesses reporting they are already exporting and another 19% planning to do so in the future.



# Industry Overview

Figure 9

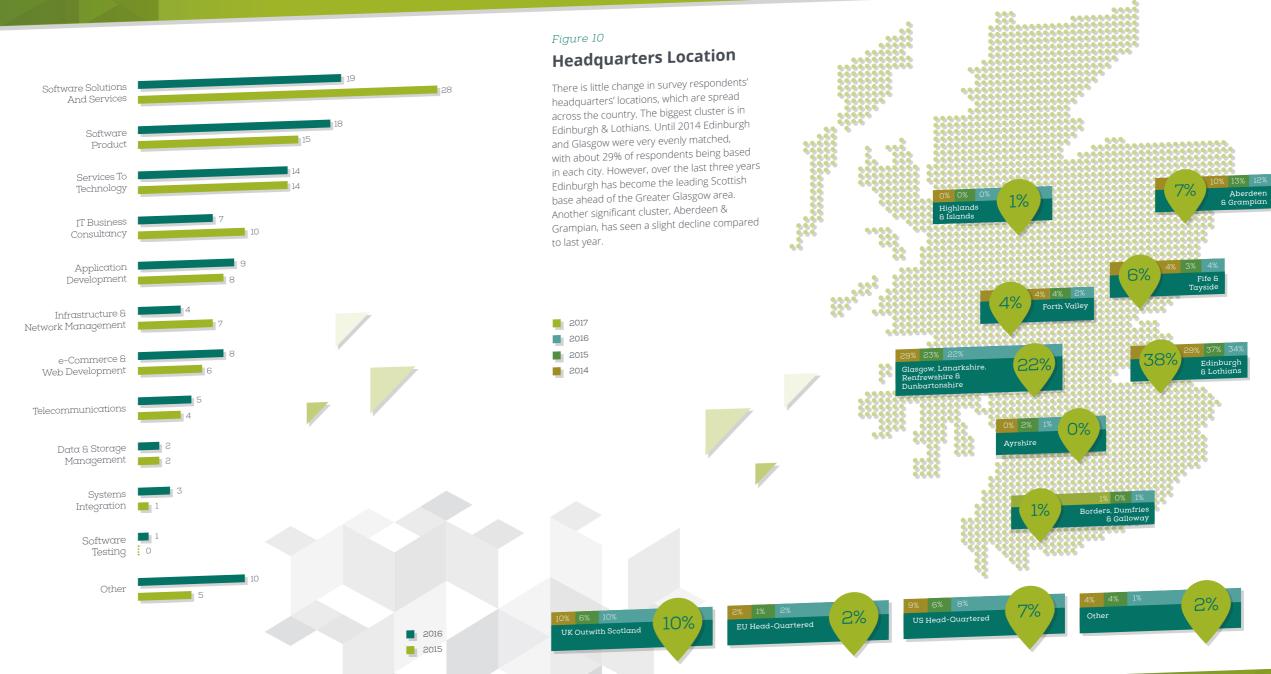
## **Main Activity Of Business**

Development of software solutions and services (19%) and software products (18%) continue to be the most significant activities respondents are engaged in.

"Plan where you need to be and update your business ready for tomorrow. Ensure you remain competitive in your market while delivering controlled development of your existing skill-sets to meet next year's needs."

#### Ron Macfarlane

Business Support Manager, Dacoll Group Ltd



# 7 Industry Overview

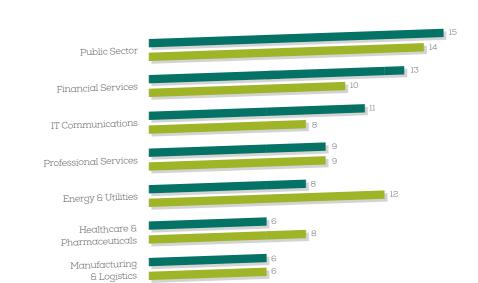
Figure 11

## **Sectors Being Supplied**

The industry supplies a wide range of sectors and of the top three selected by companies, the public sector (15%), financial services (13%) and IT& telecommunications (11%) received the most responses. Compared to 2016, the share of businesses supplying energy & utilities declined from 12% to 8% whereas financial services rose from 10% to 13%.

Respondents indicated a likely increase in demand in all sectors and the share of businesses expecting a decrease in demand has declined in a number of sectors, particularly energy & utilities (7% of those supplying this sector forecasting decrease as opposed to 39% in 2016), food & drink and electronics.





Media &

Tourism &

Defence

Food & Drink

Property & Construction

Life Sciences

Electronics

Entertainment

Figure 12

2015

2016

2015

## Size Of Customer Base

Respondents report that large organisations with 251-1000 employees are the main customer base in 29% of cases, followed by small to medium sized organisations with 27%. This is an increase for both categories compared to 2016 whilst the percentage of businesses that supply mainly multinationals and very large organisations decreased.

"Keep focused on what your customers really want - not what you think they want!"

.....

#### Kate McClorey

Co-Founder/MD, SoulTek



# Smaller Companies 1/2

Figure 13

### Reflections on 2016

2016 was a good year for smaller businesses, with 66% reporting an increase in sales and 47% increasing their profit margins. 78% have an optimistic outlook for 2017.

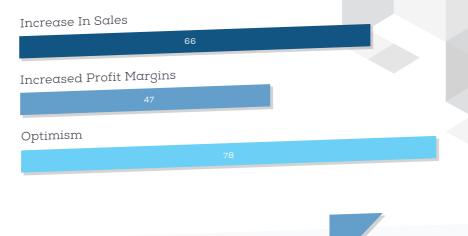
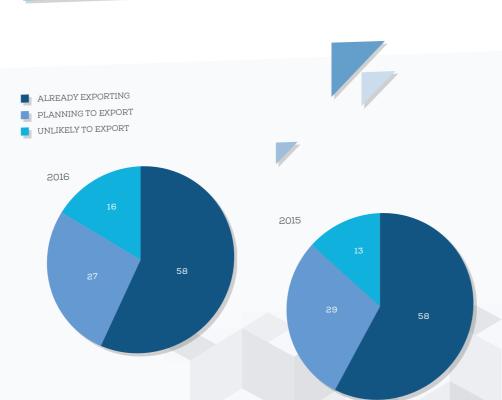


Figure 14

#### **International Sales**

The share of businesses selling internationally remained stable at 58%. The percentage of smaller companies that do not currently export and are unlikely to do so in the future increased slightly from 13% in 2016 to 16%.



#### Figure 15

## **People and Skills**

84% of small businesses expect to increase employee levels. This is a considerable increase from 68% in 2016, returning to similar levels reported in 2015. Most of these, 68%, expect to employ up to 5 additional staff. 16% expect staff numbers to stay the same and none of the respondents expect their employee levels to decrease.

62% of respondents are likely to recruit graduates and 23% are likely to take on modern apprentices.

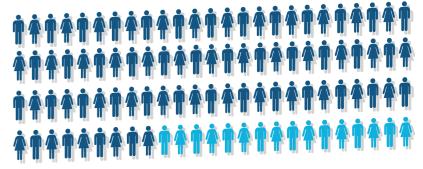
48% of respondents make use of contractors of which 44% have 1-10% of contractors in their workforce and a third count more than 30% of contractors amongst their staff.

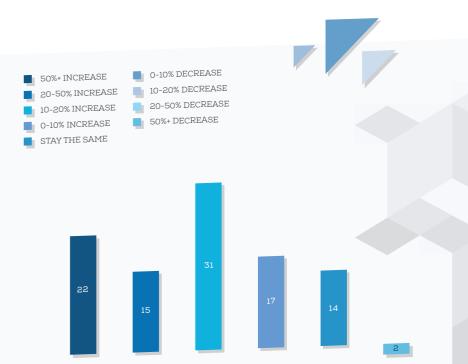
#### Figure 16

## Sales Outlook for 2017

85% of smaller businesses expect their sales to increase over the next 12 months, 14% anticipate they will stay the same, while 2% forecast a decrease in sales. This is a more positive outlook than for 2016. Much as last year, more smaller businesses, 37%, predict sales growth of 21% or more compared to the survey average of 27%. The share of smaller businesses expecting sales to stay the same has increased from 7% in 2016 to 14% in 2017.





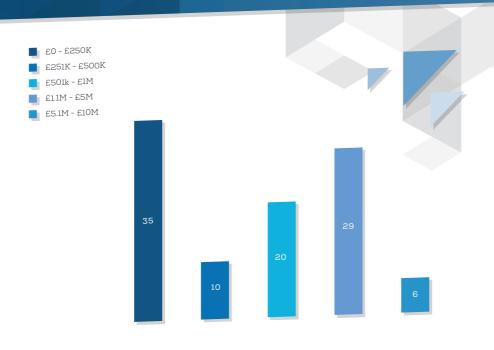


# Smaller Companies 2/2

Figure 17

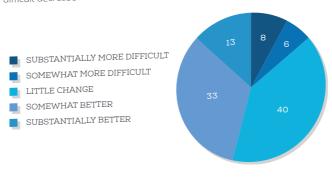
## **Financial Environment**

Turnover for 94% of smaller businesses was in the region of £0-£5M. However there is a marked contrast with the bulk of businesses either in the lowest (£0-£250K) or highest bands (£1M - £5M). The figures have not changed significantly since last year.



## Figure 19 Cash Flow Compared to Last Year

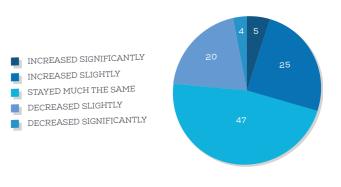
Smaller businesses reported little change in their cashflow compared to 2015. 46% experienced some improvement while just 8% had substantial difficulties. The share of companies reporting cashflow to be somewhat more difficult decreased from 14% to 6%.



#### Figure 20

## **Actuals Compared to Budget**

In 2016, actuals compared to budget stayed close to the predicted levels for 47% of smaller companies with increases reported by 30% and a decrease by 24% of businesses.

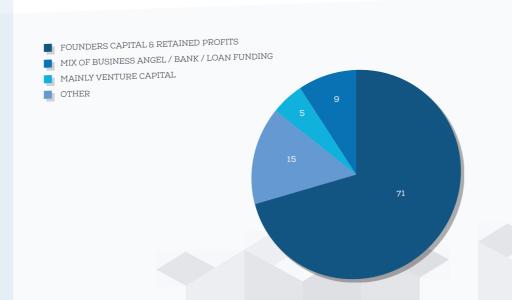


#### Figure 18

## **Funding Model**

Funding for 71% of smaller businesses is generated from founders' capital and retained profits.

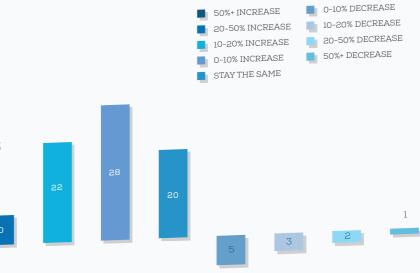
For the majority of smaller businesses that need additional finance, e.g. for growth in 2017, private investment such as angel or founders' capital is the preferred option (42%), followed by grant funding (26%), bank funding (12%) and venture capital (12%).



#### Figure 21

## 2016 Sales Levels Compared With 2015

In 2016, 70% of smaller businesses reported an increase in sales from 2015. The sales levels are up from the previous year, although on a lesser scale with most of that growth being between 1% and 20%, with the share of businesses not experiencing a change staying the same. Those reporting a decrease in sales is down from last year at 10%.



18 | Smaller Companies

# Medium-Sized Companies 1/2

#### Figure 22

### **Reflections on 2016**

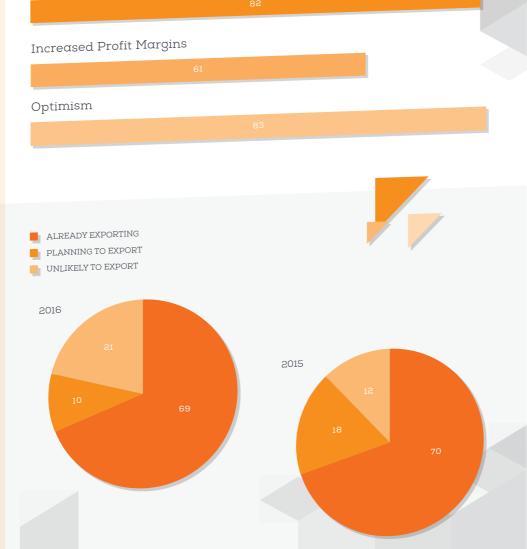
Medium-sized businesses enjoyed an exceptional 2016, reporting better sales and profit figures than either large or small businesses with similarly positive figures in 2015.

82% reported an increase in sales, 61% increased their profit margins and 83% have an optimistic outlook for 2017.



### **International Sales**

The share of medium-sized businesses that are already exporting remained stable compared to last year while fewer companies are planning to export in the future.



#### Figure 24

## **People and Skills**

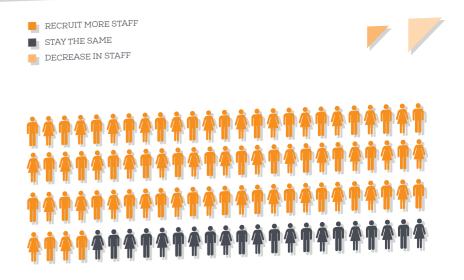
79% of medium-sized businesses expect to increase employee levels, slightly down from 85% in 2016. Most of these companies, 58%, expect to take on up to 20 additional staff and none of the respondents expect employee levels to decrease.

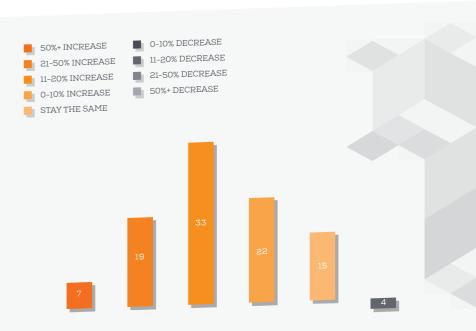
76% of respondents are likely to recruit graduates and 40% are likely to take on modern apprentices, the latter up from 29% in 2016.

71% of respondents make use of contractors of which 80% have 1-10% of contractors in their workforce and 10% count more than 30% of contractors amongst their staff.

## Sales Outlook for 2017

81% of medium-sized businesses expect their sales to increase over the next 12 months, this is slightly down on last year but in line with the survey average of 82%. The share of medium-sized companies that predict their sales will stay the same increased from 0% in 2016 to 15% for this year.





# Medium-Sized Companies 2/2

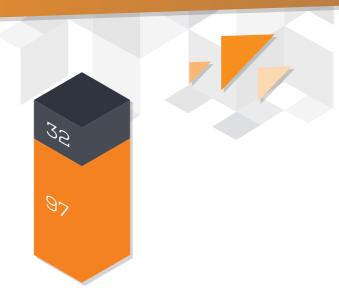
TURNOVER GREATER THAN 1M

TURNOVER OF MORE THAN 2M

#### Figure 26

## **Financial Environment**

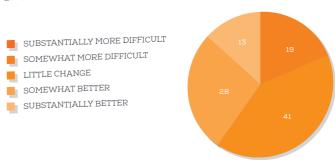
Nearly all medium-sized businesses (97%) have a turnover greater than £1M and 32% have a turnover of more than £20M.



#### Figure 28

## **Cash Flow Compared To Last Year**

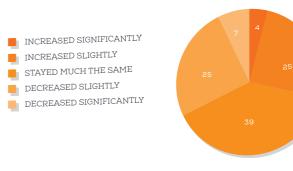
Medium-sized businesses reported a better cashflow situation compared to 2015. 41% reported improvements while 19% reported some difficulties, down from 27% in 2015.



#### Figure 29

## **Actuals Compared To Budget**

In 2016, actuals compared to budget increased for 29% of medium-sized companies with sales on target reported by 39% and a decrease for 32%.



## **Funding Model**

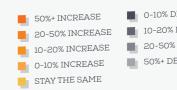
Funding for medium-sized businesses is largely generated from founders' capital and retained profits (52%) followed by a mix of business angel, bank and loan funding at 15%.

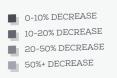


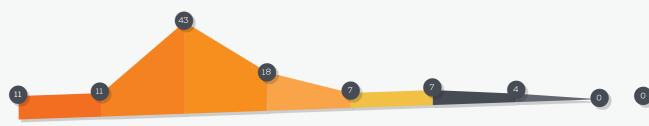
### Figure 30

## 2016 Sales Levels Compared With 2015

In 2016, 82% of medium-sized businesses reported an increase in sales, with only 11% reporting a decrease in sales. These figures are similar to last year and better than for the survey sample as a whole.







# 10 Benchmark Three: Larger Companies 1/2

#### Figure 31

## **Reflections On 2016**

Larger businesses reported another good year in 2016. 68% reported an increase in sales and only 12% reported a decrease. 32% reported their actual 2016 performance was better than forecasted, 36% increased their profit margins. 74% have an optimistic outlook for 2017 and 73% expect sales to increase.

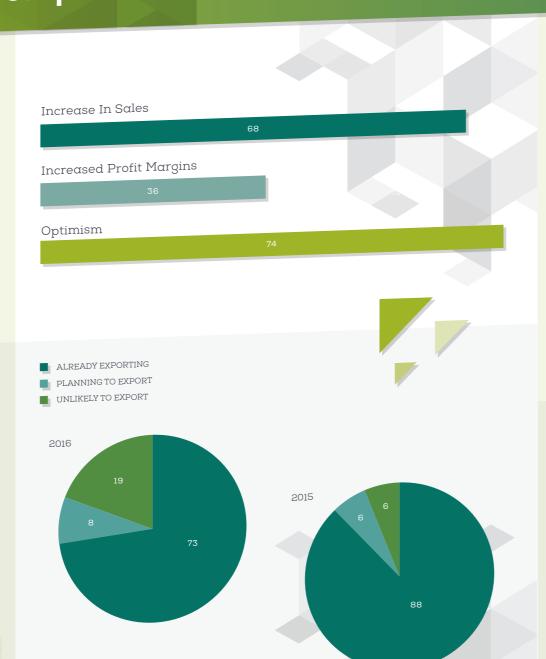


Figure 33

## **People And Skills**

With 60% of respondents expecting to increase their employee numbers and only 5% expecting a decrease, the recruitment outlook for larger businesses has improved considerably compared to 2016 when only 39% forecast an increase and 43% a decrease. 25% of businesses are planning to take on more than 50 new staff and another 25% expect an increase of up to 20 people.

Large businesses are more likely than other businesses to take on modern apprentices with 78% of respondents reporting they are likely to take them on, compared to 50% in 2016. 95% of respondents are likely to recruit graduates.

76% of respondents make use of contractors of which 77% have 1-10% of contractors in their workforce and 23% count 11-20% of contractors amongst their staff.

#### Figure 34

## Sales Outlook For 2017

73% of larger businesses expect their sales to increase over the next 12 months. This is similar to last year but the expected increases are more modest with 64% forecasting up to 10% growth and no companies expecting more than a 20% increase. Only 5% of respondents have a negative sales outlook for 2017.



**International Sales** 

have no intention to export.

Most larger business (73%) reported that they

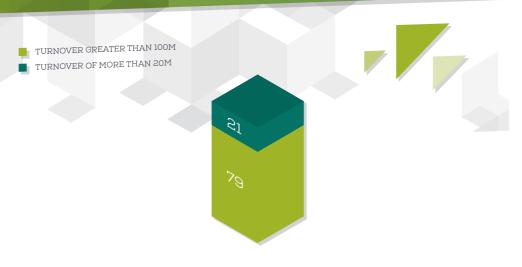
are already selling internationally whilst 19%

## Benchmark Three: Larger Companies 2/2

#### Figure 35

## **Financial Environment**

79% of larger businesses have a turnover of more than £100M or more and 21% have a turnover of more than £20M.



### **Funding Model**

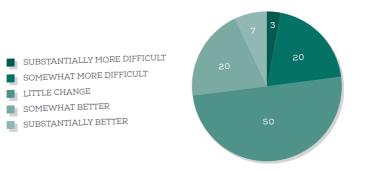
Larger businesses (50%) are typically quoted companies.



#### Figure 37

## Cash Flow Compared To Last Year

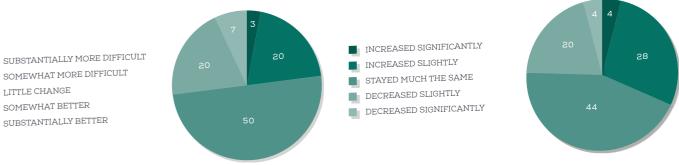
Similar to medium-sized businesses, the cashflow situation of larger businesses improved compared to last year. In 2015, 46% of respondents experienced difficulties while only 23% reported that cash flow was more difficult last year.



#### Figure 38

## **Actuals Compared To Budget**

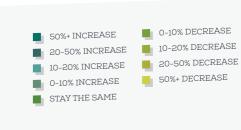
In 2016, actuals compared to budget increased slightly for 28% of larger companies with the status quo reported by 44% and a decrease by 24%. More businesses are expecting sales to stay stable, up from 33% in 2015 to 44% in 2016.

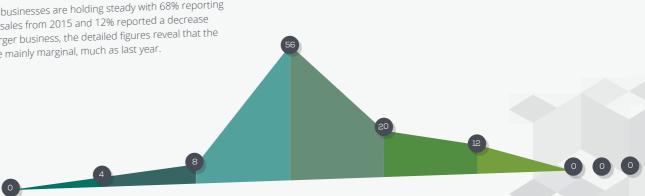


#### Figure 39

## 2016 Sales Levels Compared With 2015

Sales in larger businesses are holding steady with 68% reporting an increase in sales from 2015 and 12% reported a decrease in sales. For larger business, the detailed figures reveal that the increases were mainly marginal, much as last year.



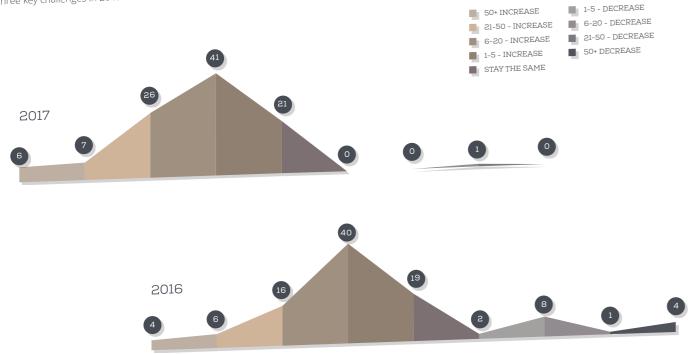


# Employment & Skills 1/3

Figure 40

## **Change In Employee Numbers** Over The Next 12 Months

2017 looks set to see stronger employment growth than last year, with 78% of respondents forecasting they will increase employee numbers. This is an increase compared to 2016 when only 66% of respondents planned to employ more people. The percentage of businesses projecting a decrease in employee numbers has fallen from 15% to 1%. At the same time, about a third of respondents mention recruitment and staff retention as one of their three key challenges in 2017.

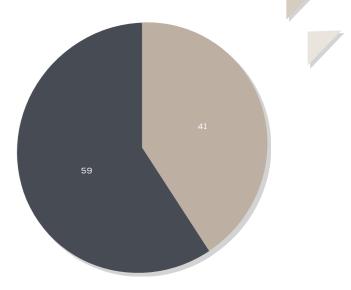


#### Figure 41

## **Use Of Contractors**

For the first time, the survey included a question about the use of contractors. 59% of respondents reported that they employ contractors. Of these, 63% have 1-10% of contractors in their workforce and 18% have more than 30% of contractors amongst their staff. 80% of respondents do not expect this to change during 2017.

DON'T USE CONTRACTORS USE CONTRACTORS



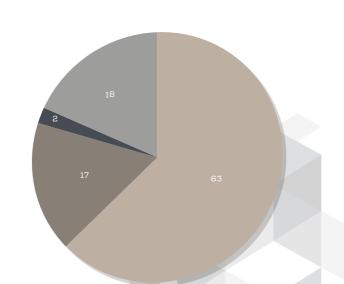
## Out Of Those Who Use Contractors:

HAVE 1-10% CONTRACTORS IN THEIR WORKFORCE

HAVE 11-20% CONTRACTORS IN THEIR WORKFORCE

HAVE 21-30% CONTRACTORS IN THEIR WORKFORCE

HAVE MORE THAN 30% CONTRACTORS IN THEIR WORKFORCE



# Employment & Skills 2/3

#### Figure 42

## **Location Of Talent**

Companies predict that they will recruit most of their new staff (73%) in the Scottish market, 17% from the rest of the UK and 9% from either Europe or the rest of the world. This is a notable change from 2016 when businesses predicted 60% of new talent would come from Scotland and 21% from outwith the UK.

"Freeing technologists to learn and be creative in how they achieve their job is the best engagement mechanism you can use"

#### **Greg Love**

Regional Board Member, BT Scotland



Figure 43

## **Recruitment Of Graduates**

Demand for the recruitment of graduates remains strong with 72% of all businesses reporting they are definitely or quite likely to recruit graduates in 2017. This demand has remained stable over the last years.

When businesses were asked what level of experience their business needs to aid growth, 'graduates' were only the second most popular group with 77% reporting there was some or a high requirement, behind experienced staff with 83%. This is the first time since 2013 that demand for experienced staff has outstripped that for graduates. However, the need for university graduates remains a priority.

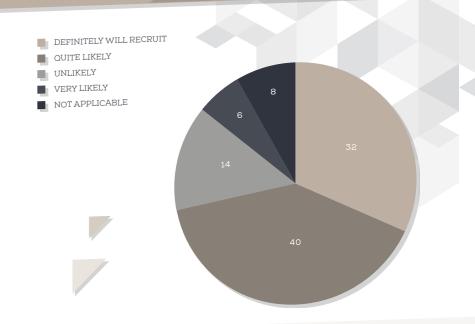
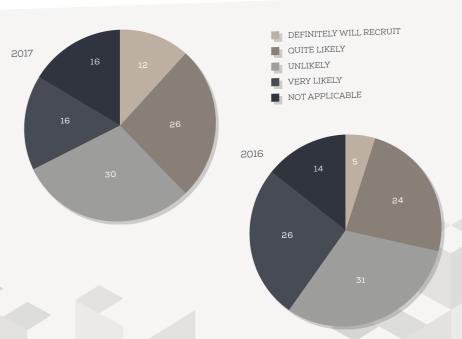


Figure 44

## Recruitment Of Modern Apprentices

The demand for modern apprentices is considerably lower than for graduates but it has increased since 2016. 38% of respondents reported that they are definitely or quite likely to recruit modern apprentices in 2017, compared to 29% in 2016. 46% said they were unlikely or very unlikely to recruit modern apprentices. Larger companies are significantly more likely to recruit a modern apprentice with 78% saying they are definitely or quite likely to take modern apprentices in 2017.



# 12 Employment & Skills 3/3

#### Figure 45

## **Most In-Demand Skill Sets**

Software and web development remain the most in demand skills with 80% of respondents indicating they will have a requirement for this skill set in 2017, up from 70% in 2016.

There is also strong demand for commercial and business support skills, required by 72% of businesses. Project management is a close third with 66% of respondents seeking these skills. Demand for these skill sets remained stable compared to last year.

Amongst larger companies the greatest demand is for software & web development skills (88%) followed by project management (71%) and infrastructure support & management (62%).

Medium-sized businesses have very strong demand for software and web development skills (80%) followed by project management skills (78%) and infrastructure support and management skills

For smaller businesses commercial and business support and software and web development, both at 78%, are the most in demand skill sets. Project and executive management skills are required by 58% and 57% respectively to aid business growth.





## **Employment & Skills Commentary From Nine Twenty**

There are some huge opportunities for Scottish businesses to take responsibility for change. If you can embrace a digital attraction strategy and create a desirable employer brand, you can still find and secure talented IT professionals. As business leaders, we need to be accountable for promoting our sector by partnering with schools and universities to showcase the opportunities and career paths that are available for the next generation to pursue. This year's survey results show that 73% of respondents believe IT talent is going to come from within Scotland, compared to 60% who thought this last year. The reality is, if we don't invest more heavily in our sector and in the early lives of the future generations, we will never be able to keep up with that demand.

To summarise, for companies to continue to grow and succeed, talent attraction, modern engagement techniques and succession planning strategies need to be flexible. Unfortunately a pool table, free fruit and the odd company social event just won't cut it anymore. People want to feel valued, engaged and part of the company journey and as a result, it's no longer risky for people to seek out careers with start-ups. However, in a candidate driven market, with 78% of companies planning to increase headcount in this next year, it definitely is a risky tactic for employers to ignore what the next generation is looking for.



### **Technical Skills**

Analysis of the technical skills requirements of respondents showed a continuing strong demand for software and web development skills, with .net, java, python and java script being most in demand. Requirement for iOS and android expertise is considerably lower than reported in 2016.

Looking beyond software and web development, there continues to be strong demand for data management and analysis as well as cloud related skills and knowledge. Cyber security, UX and DevOps were mentioned less often than previously.

### **Commercial Skills**

Businesses report that the most in demand commercial skills is for sales and business development type roles (70%), followed a long way behind by Marketing (16%). Other skills reported by a number of businesses are project management (7%), account management (6%), licensing and contractual understanding (6%).

"It's tempting when times are tough to cut training budgets, but skills development is crucial for success. And, if you're a leader, don't neglect your own personal development."

#### Peter Black

Managing Director, Energysys Ltd





# 13 About ScotlandIS

# To conclude we asked respondents to give advice to fellow members. Here are some of their tips and hints for you:

"Be focused and be responsive to customer needs. Don't over promise and identify at an early stage decision maker and available budget."

Bill Scouller

Director, Odro

"Customer referrals are a fantastic way to grow your business, we win over 90% of new business through referrals from existing customers."

James Lucas CEO, CirrusHQ

"Focus on innovation and data driven business."

**John McGuire**Director, Pulsion

"Seek out people and organisations that have the skills and success you desire and ask them about how they got there."

**Graeme Gordon** 

CEO, IFB

"Don't bury your head in the sand. If something is not right, deal with it, quickly."

**Emma Little**CEO, ExecSpace

"Be open minded and open with your colleagues."

Chris Ellis

"Keep calm, focused and agile to future economic change... Where there is change there is opportunity."

**Gareth Biggerstaff**MD. Be-IT

## **ScotlandIS**

- ScotlandIS represents Scotland's digital technologies industries, including software, telecommunications, IT and digital media businesses.
- ScotlandIS members vary from internationally recognised exporters to very small start-ups and cover a wide range of skills and markets.
- Scotland's software, IT and communications businesses generate more than £5 billion in GVA and more than 91,000 people are working in digital technology roles across the economy.
- ScotlandIS promotes the industry and lobbies government and policy makers on issues of importance to the sector.

- ScotlandIS stimulates networking and partnerships between member organisations, providing networking, training and best-practice exchange meetings, seminars and workshops.
- ScotlandIS provides practical support to help members trade, for example, by providing access to industry experts and disseminating market intelligence.
- ScotlandIS works in partnership with industry, government and academia to create and retain the skills and infrastructure required to support the digital economy.





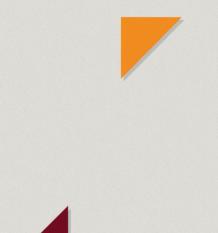
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