technology
SCOTLAND

Technology Scotland
Skills & Recruitment Survey
2017

INTRODUCTION FROM THE CEO

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"TECHNOLOGY SCOTLAND & OUR CORPORATE SPONSOR, HGF LTD, WOULD LIKE TO THANK EVERYONE FROM SCOTLAND'S EMERGING & ENABLING SECTOR WHO PARTICIPATED IN THIS SURVEY & PROVIDED SUCH VALUABLE INSIGHTS"

Technology Scotland has now been in operation for some 18 months.

During this time, whilst engaging with industry, I have witnessed first-hand the significant contribution Scotland's Emerging & Enabling (E&E) Sector makes to the economy.

The E&E Sector currently supplies 10% of Scottish exports, with some 15,000 employees in high skill R&D roles. These employees are based in over 400 different enterprises, ranging from large, multi-national companies to SMEs and start ups. With an average salary of £36,000, 67% above the national average, it is clear that the E&E sector in Scotland offers attractive benefits to employees and the wider economy.

However, in spite of the rapid growth of Scotland's E&E Sector, it is widely acknowledged that attracting and retaining talent within the STEM industries can be challenging.

With some seismic shifts currently taking place in the global political landscape, it is crucial that our community is able to maintain strong growth, respond to any challenges, and remain an attractive place for skilled workers.

With this in mind, we developed a detailed Skills & Recruitment Survey for the E&E Community to share their opinions, and provide information on the health of the Sector.

Readers will find responses broken down by section addressing topics such as internal skills, training & retention of staff, and the role of universities, as well as an analysis of the sector's future outlook.

We call on industry to work with us to address the challenges raised in this survey.

The results we present in this survey were collected from 4-30 April 2017.

Many thanks to our corporate sponsor, HGF Ltd, for their sponsorship and support.

/HGF Intellectual Property Specialists
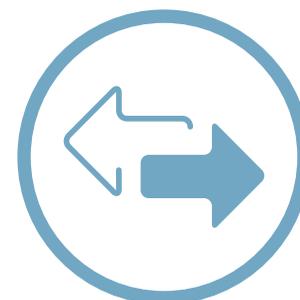
KEY MESSAGES

CURRENT SKILLS VACANCIES

61%

The number of businesses experiencing at least one skills shortage vacancy over the last 12 months (that is, a vacancy that has remained open for 3 months or greater) is high. Almost two thirds (61%) of participants reported a prolonged skills shortage, with almost a third (31%) of survey responses citing a 'loss of business' as the most significant impact of this.

INTERNAL SKILLS SHORTAGES

64%

Internally, 64% of businesses believe there is a current skills gap within their organisation, spanning a range of expertise from specific technical knowledge to leadership and business skills.
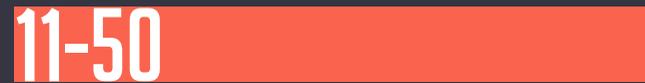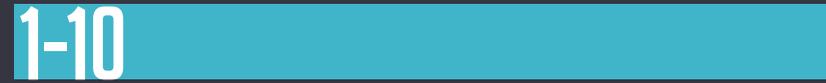
UNIVERSITY DISCONNECT

70%

Worryingly, some 70% of participants believe that there is a disconnect between current university focus and industry requirements, with a further 56% stating that graduates do not have the necessary skills to add value to business once they join the workforce.
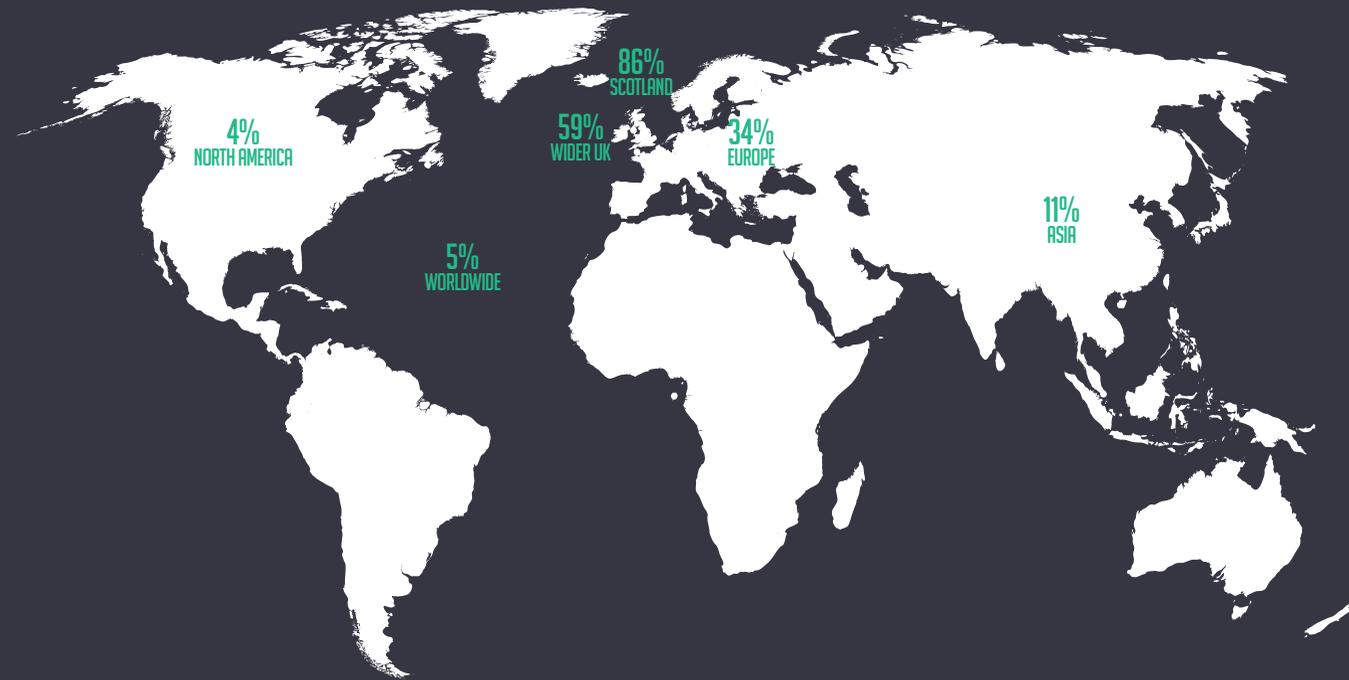
PARTICIPANT OVERVIEW

COMPANY SIZE

The survey attracted a wide range of participants, from individuals to SMEs and large multi-national companies.

1-10

11-50

51-100

101-250

251-500

500+

Number of staff

Responses in %

10%   20%   30%   40%

RECRUITMENT OF TALENT

When asked where their business typically recruits talent from, the vast majority of participants identified Scotland and/or the wider UK as being their main locations of hire, at 86% and 59% respectively.

This was closely followed by Europe at 34%, followed by Asia and the USA. 5% of businesses stated that they recruited 'worldwide'.

86% SCOTLAND

59% WIDER UK

34% EUROPE

4% NORTH AMERICA

5% WORLDWIDE

11% ASIA

SKILLS SHORTAGES

61%
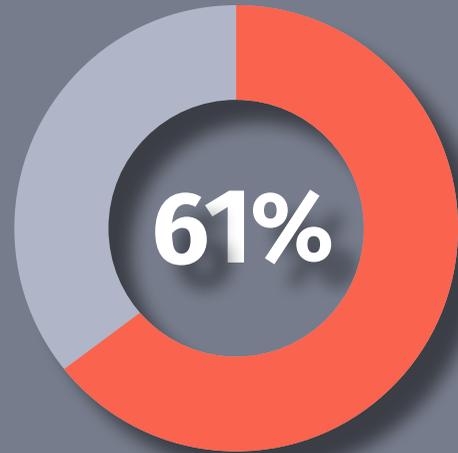
...OF BUSINESSES HAVE EXPERIENCED AT LEAST ONE SKILLS SHORTAGE VACANCY IN THE LAST 12 MONTHS.

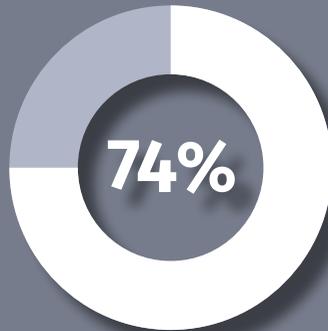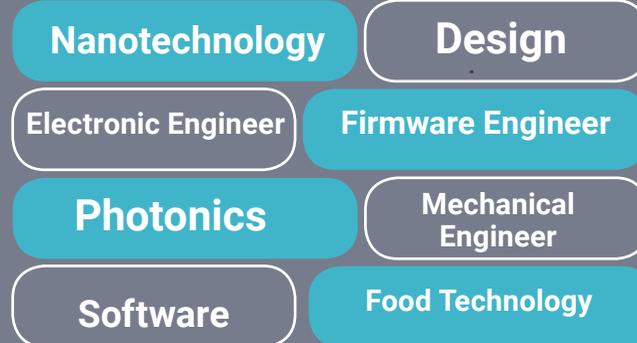**That is, a vacancy that has remained open for a period of 3 months or greater due to the lack of a candidate with the required skill set.**
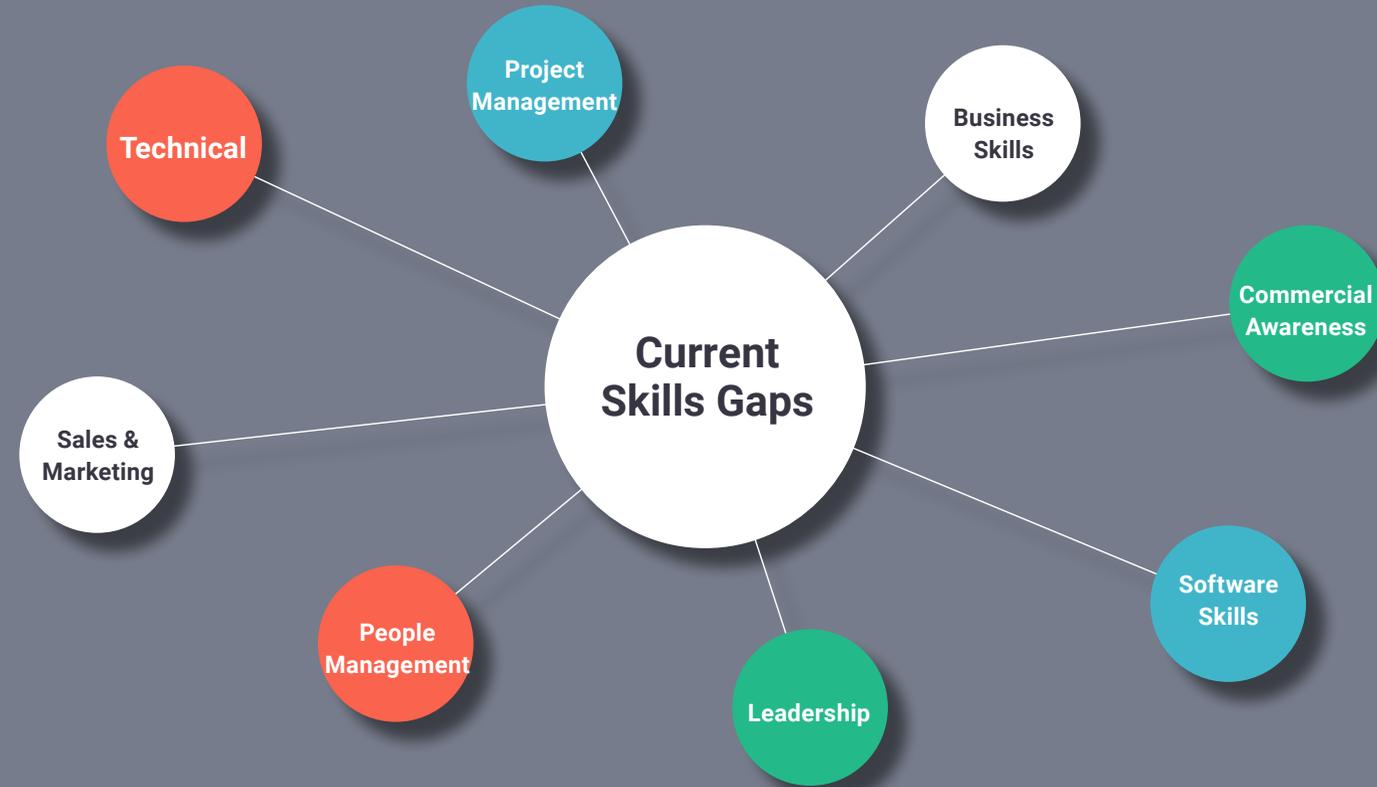
74%

74% of businesses would classify the skills shortage as 'technical', with areas including:

Nanotechnology	**Design**
Electronic Engineer	**Firmware Engineer**
Photonics	**Mechanical Engineer**
Software	**Food Technology**

Participants identified the following ways in which their skills shortages **impact business:**

74%
Increased workload for other members of staff

71%
Delay in developing new products/ services

31%
Loss of business

12%
Increased operating costs

67%
Difficulties meeting customer expectations

29%
Outsourcing work

OTHER
»Lack of R&D
»Recruitment costs
»Stress on employees

INTERNAL SKILLS

Technical

Project Management

Business Skills

Commercial Awareness

Current Skills Gaps

Sales & Marketing

People Management

Leadership

Software Skills

64%

...OF BUSINESSES BELIEVE THERE IS A CURRENT SKILLS GAP WITHIN THEIR ORGANISATION.

TRAINING

When surveyed about training, the majority of businesses reported that they have funded or facilitated external training for staff (77%).

34% had participated in an apprenticeship programme, with 88% believing it to be a 'very or somewhat successful' undertaking.

However, when it came to young graduates training on an internal program, 60% of businesses did not offer this, instead hiring directly from universities.

77%

77% of businesses have to fund or facilitate external training for staff

60%

But 60% of businesses do not run internal graduate training programmes

34%

and just 34% of businesses have offered apprenticeships or taken on a modern apprentice

RECRUITMENT

Businesses were asked at which level of experience their company/organisation requires additional expertise.

Although there is some requirement at all levels, this is mainly seen at Graduate/Middle Management level.
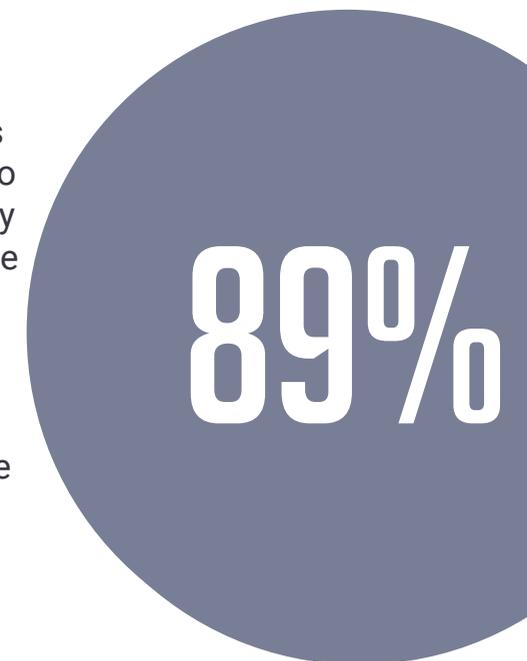
	High - Some Requirement	No Requirement
Modern Apprentice	44%	56%
Graduate	80%	20%
Middle Management	57%	43%
Senior Management	39%	61%
Director/CEO	28%	72%

In an attempt to reduce skills gaps within organisations, participants employed a number of measures:

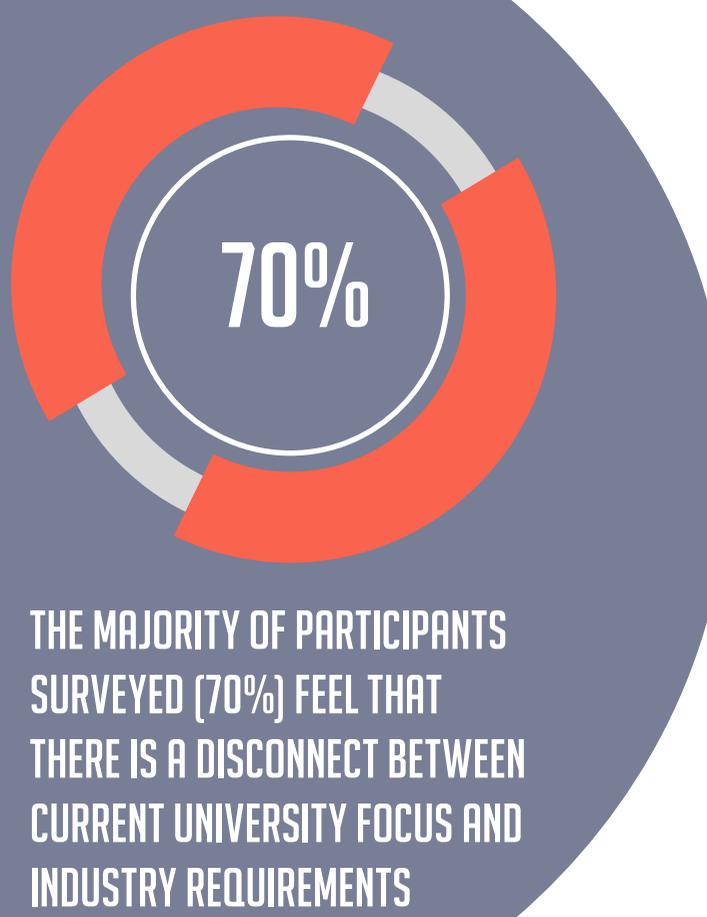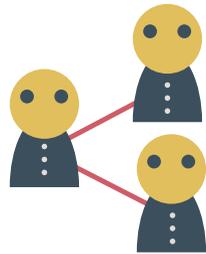|	
Increased recruitment costs	67%
Increased training costs	49%
Reallocation of work	40%
Mentoring schemes	35%
Increased supervision of staff	19%

RETENTION OF STAFF

89% of businesses said they do not typically have trouble retaining staff, however those that do cited the following reasons:

89%

Lack of long term funding

Current political climate

Lack of skills/interest

Lack of career progression

Competition

Geographical location

Long/unsociable hours

EDUCATION

70%

THE MAJORITY OF PARTICIPANTS SURVEYED (70%) FEEL THAT THERE IS A DISCONNECT BETWEEN CURRENT UNIVERSITY FOCUS AND INDUSTRY REQUIREMENTS

77% believe it is the responsibility of secondary & higher education to provide graduates with a diverse range of 'soft skills'

77%

56% of respondents believe that graduates do not have the necessary skills to add value to business upon leaving university
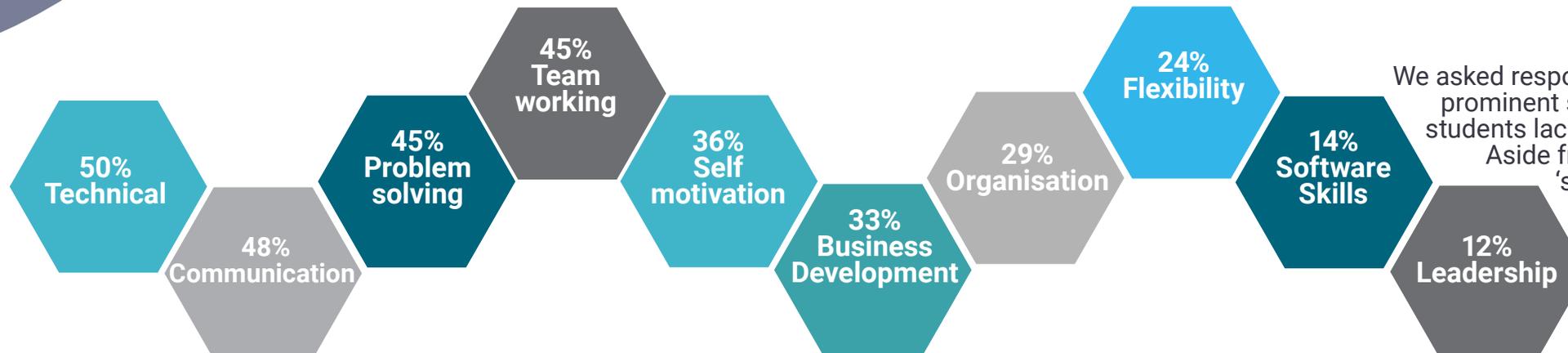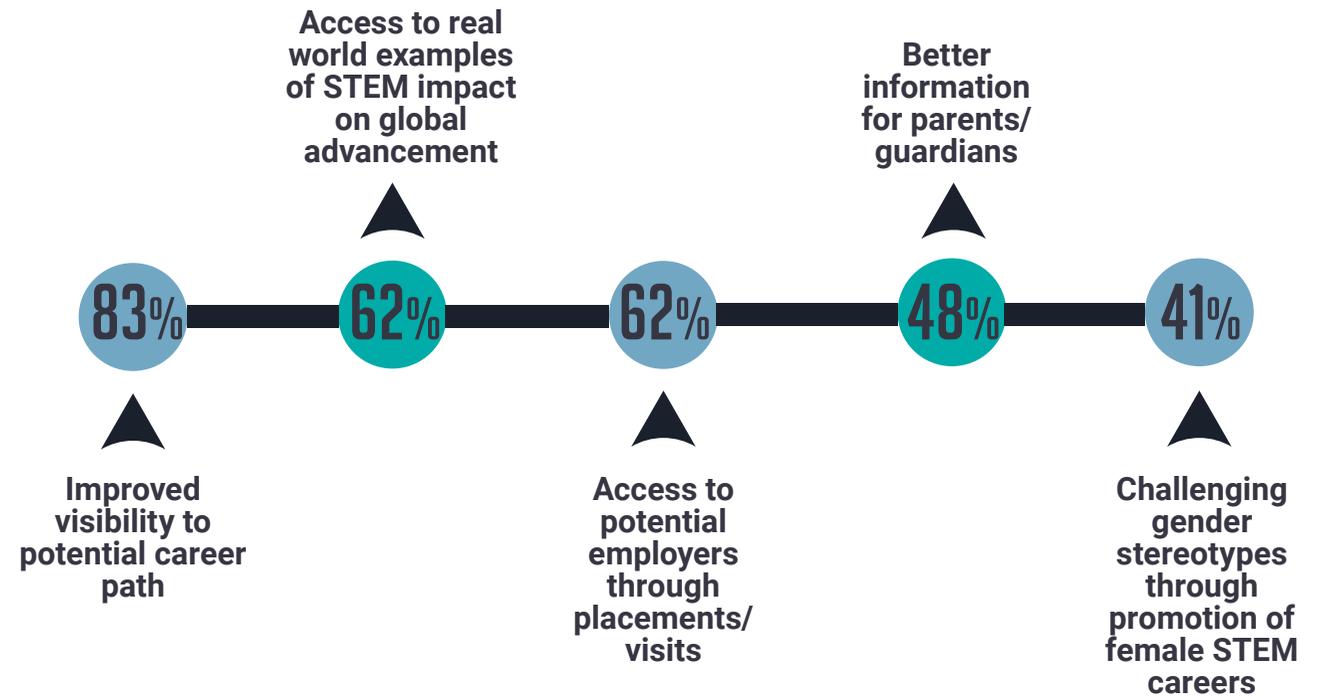
56%

It is acknowledged that attracting and retaining talent to STEM careers is challenging. A number of options were identified by respondents as potentially impactful on STEM uptake at school/university level

Access to real world examples of STEM impact on global advancement

Better information for parents/ guardians

83% — **62%** — **62%** — **48%** — **41%**

Improved visibility to potential career path

Access to potential employers through placements/ visits

Challenging gender stereotypes through promotion of female STEM careers

50% Technical

48% Communication

45% Problem solving

45% Team working

36% Self motivation

33% Business Development

29% Organisation

24% Flexibility

14% Software Skills

12% Leadership

We asked respondents to identify which prominent skills they think graduate students lack, ticking all that applied. Aside from technical, a range of 'soft skills' were identified

FUTURE OUTLOOK & KEY COMMENTS

To conclude, participants were asked to share any final thoughts they had on skills & recruitment for technology companies and organisations in Scotland.

The comments can be read below, grouped into popular themes which emerged.

POLITICAL INFLUENCE

"I see a real effect of Brexit today – I am trying to hire experienced engineers now but I see 2 things – (1) German & Italian engineers working in the UK leaving now to go back to central Europe, and (2) I can't attract engineers from central Europe to the UK"

EDUCATION, UNIVERSITIES & STEM

"To improve the skills set in Scotland, I believe universities must train STEM undergraduates for real STEM business roles, i.e….significant project management, operational and commercial education at STEM degree level"

"Our universities are more successful than our businesses, so we educate people but they work elsewhere"

"Availability - where are the graduates from Scottish universities?"

"To qualify for university engineering courses, candidates do not need to show any creative skills. We now have many engineers that can't create!"

"…the lack of information people have at school age about the opportunities in this sector. Although there is a lot of activity being done to address the gender imbalance, the proof lies in the tiny percentage of women in tech companies at executive level… they are the companies promoting it but not practising it"

"Need better promotion to English universities. Promotion within Scottish universities is OK but we as a sector need more visibility south of the border"

INVESTMENT & FUNDING

If there is a focus upon the development of technology…there has to be the same focus and investment made to ensure that the personnel are available…to fuel growth in companies. There appears to be a disconnect at the moment"

"Need more funding to support companies to provide access to external training. We don't have the financial resources to send staff on good quality, specific training to improve their commercial, management and 'soft' skills"

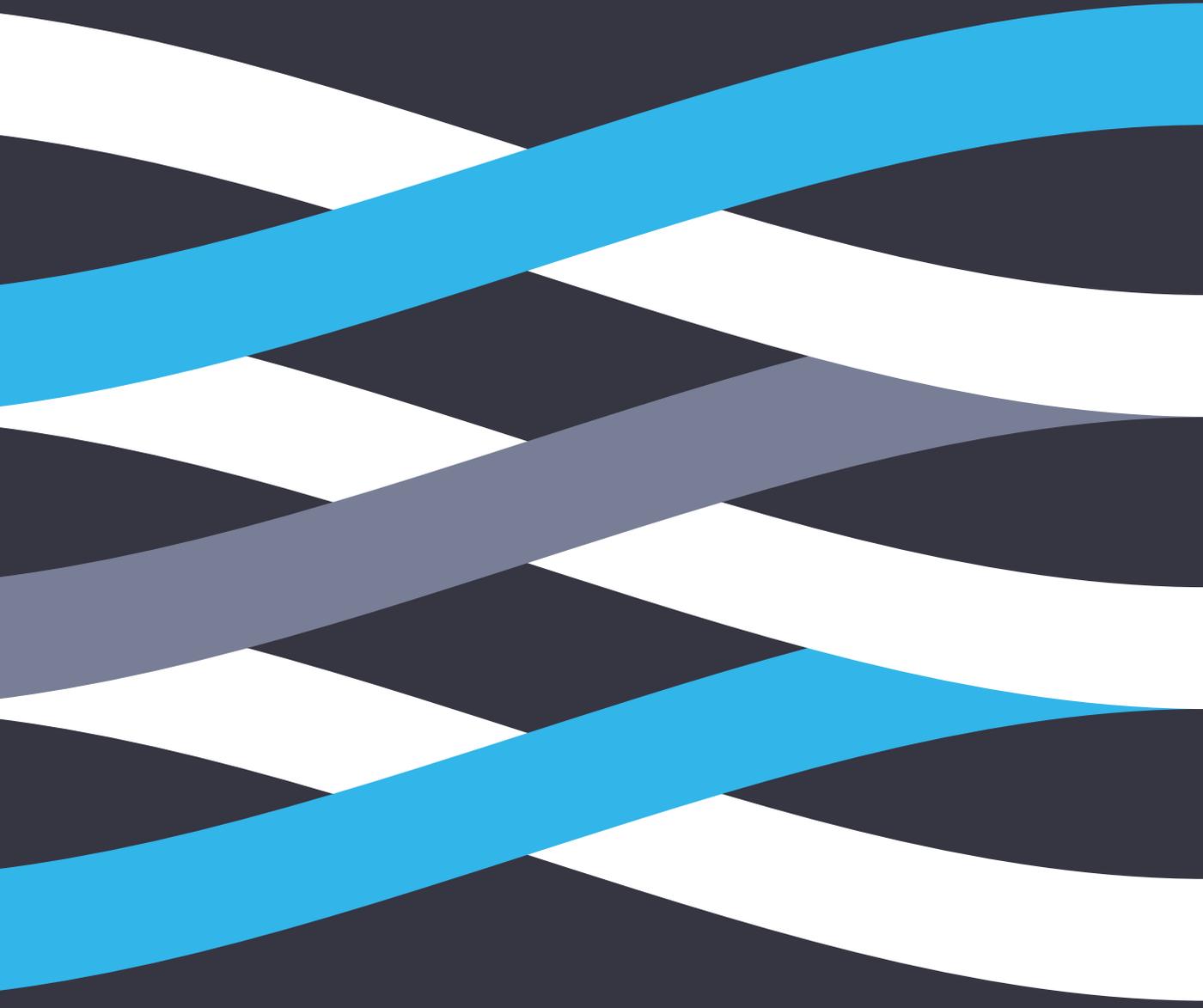"On the whole, industry does a patchy job investing in young people"

"[There is a] lack of funding to get new products…to market place"

87%
DESPITE THE SKILLS & RECRUITMENT CHALLENGES IDENTIFIED, 87% OF PARTICIPANTS BELIEVE THAT THE SCOTTISH TECHNOLOGY SECTOR REMAINS AN ATTRACTIVE PLACE TO DO BUSINESS