

# Upskilling Scotland

## The Future of Skills and the Fourth Industrial Revolution

SCDI's Skills & Employability Leadership Group | January 2020





---

# CONTENTS

Executive Summary	4
Introduction	12
High Performing Individuals	16
Future Skills & Meta-Skills	17
The Learning Ecosystem	31
The Talent Pipeline	38
Access to Talent & Migration Policy	41
High Performing Workplaces	45
Skills Recognition, Supply & Demand	46
Innovative, Inclusive Recruitment	55
Leadership & Management	61
Fair Work	67
In-Work Development	75
Reskilling & Upskilling	76
Work-Based Learning	84
Lifelong Learning	89
Summary of Recommendations	93
Acknowledgements	102

---

# EXECUTIVE SUMMARY



## The world of work is changing - and Scotland must change with it.

The new and emerging technologies of the Fourth Industrial Revolution – from automation and Artificial Intelligence, to digitisation and Big Data – are opening up a new human-machine frontier, which is already transforming our society and our economy by disrupting business models, workplaces, labour markets and communities across Scotland. Some are concerned that these changes could create new problems or exacerbate existing inequalities by displacing large numbers of jobs as workers are replaced by machines.

However, the balance of evidence suggests that alarmist predictions of mass unemployment are misplaced. Technology replacing people is not new. In every previous industrial revolution, inventions and innovations have disrupted the status quo and changed the way we live and work, leading to the transformation of most jobs, the elimination of some jobs and the creation of many new kinds of jobs in new sectors of the economy.

Work will not disappear, but it will change. The Fourth Industrial Revolution will result in disruption and evolving skills demand, but also gives Scotland opportunities to increase productivity, fuel innovation and improve the quality of learning and work if innovations are deployed in the right way.

This report sets out how Scotland's people, businesses and organisations can compete and thrive in this emerging global context. Our vision is of a high performing Scottish economy. An

inclusive, responsive and world-class learning ecosystem and labour market should empower our highly skilled workforce to perform at its highest level, driving high levels of productivity, wages, global competitiveness and inclusive and sustainable economic growth across all sectors and all geographies.

This will require a paradigm shift in how we think about and invest in learning, with a much greater commitment to lifelong learning for everyone at all stages of their life and career to accelerate reskilling and upskilling across the workforce. Upskilling Scotland is our route through the Fourth Industrial Revolution to social and economic prosperity for all.

The Scottish Government, the UK Government, public agencies, universities and colleges, employers and stakeholders therefore need to take bold and urgent action to fundamentally improve and change our learning ecosystem to tackle labour shortages, close skills gaps and better support employers and employees.

Our research identifies recommendations across the three key pillars of a high performing Scottish economy in the Fourth Industrial Revolution:

### 1. High Performing Individuals

*People with the skills to compete and thrive*



#### Future Skills & Meta-Skills

We cannot predict the jobs of the future. Our learning ecosystem, employers and workers will have to become more flexible, adaptable and resilient to change. Meta-Skills are timeless,

higher order and truly human skills in self-management, social intelligence and innovation which are resistant to automation by machines or imitation by AI. Workers will need these skills to compete and thrive whatever the future holds.

### The Learning Ecosystem

Scotland's learning ecosystem needs to respond to the imperative to develop Meta-Skills, and top-up technical skills which are task-, technology-, job- or sector-specific, in the workforce by developing a more diverse and flexible offer. Democratising knowledge of and supporting upskilling in new and emerging Fourth Industrial Revolution technologies should also be a national priority. There is increasing demand from both learners and employers for learning opportunities which are flexible to improve access and widen participation; tailored to employer, sector or personal needs and priorities; responsive to new and emerging trends and technologies; informed by enhanced engagement with industry; and delivered in short, modular or bitesize segments.

### The Talent Pipeline

Developing a talent pipeline is critical to the future growth and sustainability of any business or organisation. As the backbone of the Scottish economy, SMEs need distinct interventions and services from larger businesses or Scotland's enterprise and skills agencies which support them to build the next generation workforce by connecting smaller employers with student and graduate talent.

### Access to Talent & Migration Policy

Many employers report that they are struggling to secure the right people with the right skills. Labour shortages and skills gaps are barriers to growth and cost Scottish businesses and organisations £360 million every year. Scottish

employers need access to global talent, skills and labour to compete internationally. An open, welcoming and effective immigration system should meet Scotland's distinct employer needs and demographic profile.

- **Recommendation #1**

The Scottish Government should convene a Scottish Disruption Council of government, business, industry, academia, trade unions and citizens to inform, agree and coordinate Scotland's response to the Fourth Industrial Revolution which manages social and economic disruption and responds to public concerns.

- **Recommendation #2**

Developing Meta-Skills in the workforce should be a national priority for Scotland. Meta-Skills should be embedded in all learning. Skills Development Scotland, the Scottish Funding Council and the Scottish Qualifications Authority should work with employers, learners, workers and stakeholders to develop an accessible, intuitive language around Meta-Skills

- **Recommendation #4**

Universities and colleges should expand and develop their offer of flexible, tailored, responsive and modular learning opportunities underpinned by support and incentives from the Scottish Government and the Scottish Funding Council.

- **Recommendation #5**

The Scottish Government should work with industry and education partners to deliver a free-access online course on the fundamentals of AI based on Finland's successful 'Elements of AI' model with the

objective of upskilling 2% of the population by 2022.

- **Recommendation #10**

The UK Government should devolve the necessary powers to enable the Scottish Parliament and the Scottish Government to implement a differentiated migration system for Scotland within the UK framework to increase inward migration.

## 2. High Performing Workplaces

*Teams with the skills to compete and thrive*



### Skills Recognition, Supply & Demand

Expanding the talent pool will better support individuals to reach their full potential and employers to build successful teams. An ageing population and shrinking working-age population means that Scotland will need to widen labour market participation and improve skills recognition to prevent wasted talent, labour shortages and skills gaps.

Widening labour market participation will require action to address lower levels of employment and higher levels of economic inactivity, under-employment and skills underutilisation which are experienced by many women, young people and graduates, disabled people, migrants and refugees in Scotland. Greater equality for women in the labour market and the workplace will be needed to harness their full economic potential. More older workers will have to be supported to remain in the workforce for longer and to support young people with mentoring and coaching. Improving skills recognition will require a comprehensive national approach to the recognition of prior

learning developed through informal or non-formal learning or in other countries.

Improving the workforce's language skills could boost Scottish GDP by up to £6.3 billion by reducing linguistic and cultural awareness barriers to internationalisation. Scotland needs to invest in the language skills of the workforce and utilise its diverse international student population to connect export-ambitious businesses with key growth markets.

Employers should interpret skills as capabilities and competencies, rather than as qualifications necessarily. Qualifications will often be appropriate or necessary for many roles, but valuable skills are developed beyond the workplace or the classroom and do not always need to be assessed formally to be evidenced.

### Innovative, Inclusive Recruitment

Diverse teams are more successful. The evidence is clear that businesses and organisations which are more diverse in terms of gender, ethnicity, nationality, religion, sexuality, disability and class are more productive and more profitable. Teams in which a wide range of backgrounds and perspectives collaborate are proven to be more challenging, creative and adaptable and to understand their markets, partners and customers better. They are more resilient to disruption in the Fourth Industrial Revolution.

Innovative, inclusive recruitment practices can support and increase diversity by eliminating discrimination, challenging prejudicial attitudes, encouraging a diversity of applicants and making everyone feel safe, respected and valued in the workplace for who they are.

### Leadership & Management

Poor leadership and management is a significant drag on productivity and global competitiveness across the Scottish economy. Scotland faces a serious leadership skills gap at senior level and at middle manager level due to under-investment and emigration of talent. Training and development budgets have declined significantly across the Scottish economy over the past decade during the slow, weak and uneven recovery from the Great Recession, undermining the long-term foundations of our future prosperity. Many leaders and managers are not given the training, guidance or support that they need to build their capacity to get the best out of their teams. A lack of time, capacity and resources is a critical challenge for SMEs.

Many businesses and organisations are experimenting with radical new business models which empower people by transforming their approach to leadership and management. There is evidence that the openness, highly collaborative and decentralised decision-making of less hierarchical, more agile workplaces – including flat workplace models and employee ownership – improves team morale, collaboration and productivity.

### Fair Work

Record numbers of people in Scotland are in work, with unemployment at historically low levels. However, despite the quantity of work in the Scottish labour market, there are growing concerns about the quality of much of this work. Atypical work, including self-employment, zero-hours contracts and agency work, has never been more common.

Nearly 5 million people across the UK are self-employed, while an estimated 4% of those in

work in Scotland work in the gig economy. For some, this has meant greater flexibility or a better work-life balance; for others, a serious loss of time, control and trust. New digital platforms have helped fuel a surge in precarity, insecurity, low pay and in-work poverty due to the deterioration in the quality of work.

The Fourth Industrial Revolution also creates opportunities for employers to support their employees to increase their productivity and enjoy better working lives by deploying automation to remove dull, dirty, dangerous and dear tasks from their jobs. In line with the Fair Work Convention, all work in Scotland should offer Effective Voice, Opportunity, Security, Fulfilment and Respect. The Scottish Government and its agencies' commitment to extending Fair Work First criteria and conditionality is therefore welcome – but this could be taken further to stimulate further progress.

Poor physical or mental health and wellbeing as a result of work-related stress, depression, over-work or isolation appear to be increasingly common features of contemporary working life. Heightened precarity and insecurity, the ever-increasing use of technology and the impact of a decade of austerity have helped to facilitate the rise of burnout, longer hours and an always-on culture which seriously erodes workforce morale and productivity.

- **Recommendation #14**

The Scottish Funding Council and the Scottish Credit and Qualifications Framework Partnership should work together to develop a systemic, nationwide approach to the recognition of prior learning developed through informal or non-formal learning.

- Recommendation #18**  
 Scotland needs to take action to close its leadership skills gap. All employers should invest in their leaders and managers and commit to coaching and mentoring across their organisation. Skills Development Scotland, Scottish Enterprise and partners should develop flexible incentives and tailored, bitesize advice, training or support for upskilling leaders and managers, with a focus on SMEs and smaller third sector organisations
- Recommendation #21**  
 The Scottish Government should set a timeline for a transition to Fair Work First criteria and conditionality in all public sector contracts, procurement and licensing.
- Recommendation #22**  
 The UK Government should equalise employment rights and protections for all workers to ensure that self-employed, gig economy and precarious workers have equal access to the minimum wage, sick pay and holiday pay.

### 3. In-Work Development

*Reskilling, Upskilling, Work-Based Learning and Lifelong Learning for People and Teams*



#### Reskilling & Upskilling

As the Fourth Industrial Revolution gathers pace, workers will need reskilling, upskilling, work-based learning and lifelong learning opportunities to strengthen their resilience and increase their

adaptiveness to social and economic change. There will need to be a paradigm shift in the way we think about and invest in learning from our current focus on pre-employment and early-career stage education to a more holistic commitment to lifelong learning for everyone at all stages of their life, especially those in-work and at mid- or late-career stage.

New technologies will continue to change the way we live and work. Citizens and workers will therefore need to continually refresh, update and develop their skills to equip them to continue to compete and thrive in a challenging, dynamic and global economy. One third of required skills will be wholly new by 2030, according to the World Economic Forum. Workers whose jobs could be displaced will need reskilling opportunities to access new jobs. Workers whose jobs will be disrupted or transformed will need upskilling opportunities to work with new and emerging technologies to complete new tasks and fulfil new roles in new sectors or new markets.

Meeting the scale of this challenge will require significantly higher levels of investment in and support for the workforce from both government and employers. Scotland under-invests in its people compared to leading economies across Western Europe and Scandinavia with high-investment, high-skill, high-pay and high-productivity labour market models, undermining our long-term foundations of growth and competitiveness.

Two-thirds of employers do not have a training budget. Many SMEs report a lack of time, capacity and resources as key factors. Most workers are unable to fund their own learning opportunities. Driving increased investment in Scotland's SME workforce could deliver big gains

and increase Scotland's productivity by up to 30%.

### Work-Based Learning

There is growing recognition of the value of learning which is contextualised in and by the workplace from both learners and employers. Demand for formal, non-formal and informal and informal work-based learning opportunities from apprenticeships to mentoring is strong and growing. Work-based learning bridges the gap between education and work, develops Meta-Skills and delivers experiential learning, which is current, relevant and authentic.

The Graduate Apprenticeships model has achieved early success and will need to be scaled up significantly in more subjects across more sectors. However, a more flexible model of delivery and a more long-term model of funding are required to support improved access and widened participation for learners and better planning by employers and institutions.

### Lifelong Learning

Everyone in Scotland should have a lifelong entitlement to learning. Engaging older workers with lifelong learning, however, can be challenging. More complex life circumstances and lack of funding can create barriers to access. Estimates suggest that the level of adult participation in learning is substantially lower in Scotland than in leading European countries. There is a need for Scotland's learning ecosystem to innovate with flexible models of delivery, including online and part-time learning.

In an era of lower employer investment in workforce development and the growing personalisation of curated learning, individuals need to be empowered to direct their own

learning with support and funding which they can draw on at any stage of their life or career to reskill and upskill. A more significant intervention than previous smaller-scale experiments is required given the nature of the Fourth Industrial Revolution and the scale of the learning funding gap across Scotland's workforce.

Scotland should learn from more ambitious models in other countries. Through SkillsFuture in Singapore every adult aged 25 or over in every job receives credits which they can spend to partly or wholly fund training or education opportunities at every life stage. SkillsFuture has empowered tens of thousands of Singaporean workers to access and to take control of their lifelong learning. It has fuelled a radical and rapid increase in the supply of new, emerging or priority skills – from data analytics and cyber security, to entrepreneurship and advanced manufacturing – in its high skill labour market, closing skills gaps and reducing labour shortages.

A fund with similar objectives which reflects our distinct learning ecosystem, economy and society – and is in addition to existing funding and support – would be an important intervention to support and accelerate reskilling and upskilling across Scotland, empowering individuals to partly or wholly fund different kinds of learning opportunities at different stages.

For example, workers could utilise the fund to finance bitesize digital upskilling courses in their early career. They could then complete a further or higher education qualification to develop their leadership and management skills through part-time study in mid-career. They could then access online or distance learning from institutions globally to reskill in late career to keep pace with technological change or support career change,

perhaps in response to redundancy or sector growth and decline.

- **Recommendation #29**

The Scottish Government should reform the Flexible Workforce Development Fund to strengthen its impact by significantly increasing its flexibility, scale and ambition.

- **Recommendation #31**

The Scottish Government, the Scottish Funding Council and Skills Development Scotland should significantly and at pace scale-up provision of Graduate Apprenticeships across Scotland, working with employers to develop and deliver more flexible Graduate Apprenticeships in a wider range of subject areas and sectors.

- **Recommendation #33**

The Scottish Government should create an Adult Learning Innovation Challenge Fund to stimulate and support innovative national, regional and local projects which engage adults in lifelong learning.

- **Recommendation #34**

Everyone in Scotland should have a lifelong entitlement to learning. The Scottish Government should establish an ambitious, universal and flexible Upskilling & Lifelong Learning Fund which empowers every Scottish adult to partly or wholly fund reskilling or upskilling opportunities at any stage of their life or career.

# INTRODUCTION

## The Future of Skills, the World of Work and the Fourth Industrial Revolution



Scotland has a highly skilled population and a strong learning ecosystem. Our workforce has higher levels of education and training than any other in Europe. Our economy is home to global employers and innovative businesses who have chosen Scotland because of the skills and talent of our people.

Our labour market has proven resilient to macroeconomic turbulence and political uncertainty, with unemployment remaining at or near record lows, and employment at or near record highs, for several years. Our schools, colleges and world-leading universities are developing the next generation workforce.

## The Challenge



However, we cannot not be satisfied with the status quo. There is wide recognition of the need for improvement. In many sectors and geographies, employers face labour shortages and skills gaps which prevent them from growing and competing globally. Learners often struggle to access the skills, education or training they need, which prevents them from progressing and reaching their full potential. Increasing numbers of workers face a low skill, low pay labour market which can trap them in in-work poverty.

Scotland's population is ageing and our working-age population is shrinking. There are growing inequalities between regions and communities. The quality of work is under threat with the rise of precarious, insecure and atypical employment and the growth of the gig economy. We continue to face relatively low levels of productivity.

We believe that Scotland should raise its sights and increase its ambition. Although Scotland has many strengths, we still lag behind our competitor and comparator nations across Central and Northern Europe. This report highlights international case studies and models from leading countries and companies from which Scotland can learn.

The future of skills and the world of work are changing – and Scotland will have to change with it. The Fourth Industrial Revolution in automation, Artificial Intelligence, digitisation and other new and emerging technologies is already transforming our society and our economy. Our learning ecosystem will need to change to meet the challenges and grasp the opportunities of the future.

Skills demand and supply is not static, but rather evolves and fluctuates in response to ongoing changes in technology and in society, and vice versa. New technologies are disrupting workplaces, business models and labour markets across all sectors, reducing or even eliminating demand for some skills, increasing demand for others and creating new demand for entirely new skills. Climate change and the transition to net-zero carbon emissions will likewise affect the way we live, the way we work, the way we do business and, as a result, change the skills we need.

We cannot predict the jobs of the future. But we know that the era of the job for life is over. We know that we will have to equip workers with the skills to have several careers and many jobs during their working lives. Workers will also work for longer and increasingly alongside technologies like AI – what the World Economic Forum (2018) has called the “new human-machine frontier”

Some jobs will be displaced by the Fourth Industrial Revolution, while most are changed, and others are created. Work will not disappear.

## The Opportunity

There is consensus across government, our economy and our society that Scotland's strengths can be leveraged to build a high skill, high growth, high performing economy.

The Fraser of Allander Institute's Scotland in 2050: Realising Our Global Potential report in partnership with Shepherd + Wedderburn advocated a vision of Scotland as an "economy that harnesses and trades on knowledge" (Fraser of Allander Institute 2019: iii). The Scottish Trade Unions Congress recognised how skills and Fair Work are critical to improving living standards for workers (STUC 2019). The Scottish Government's Future Skills Action Plan (2019) articulated a vision of "Scotland's highly skilled workforce" as the cornerstone of an "ambitious, productive and competitive nation", which this report takes forward.

The Strategic Board for Enterprise and Skills (2018) set out a clear direction for Scotland's skills and education systems towards greater responsiveness, enhanced flexibility and closer alignment across agencies. Skills Development Scotland's new Strategic Plan (2019) sets out how it will strengthen its "collaborative, inter-agency approach" to support this vision and to respond to many of the challenges and opportunities set out in this report.

## Our Approach

SCDI's Skills & Employability Leadership Group was established in January 2019 to look towards the future. Its mandate has been to explore how Scotland should respond to these changes to ensure that our people have the skills they need to thrive – and that our businesses and organisations have the skills they need to compete and grow on the global stage. Skills are a key driver of productivity growth and inclusive growth.

SCDI's Skills & Employability Leadership Group Strategic Partners: Skills Development Scotland. Partners: OPITO, Scottish Credit and Qualifications Framework Partnership, Universities Scotland, Wheatley Group, The University of Edinburgh, The University of Strathclyde, Caledonian MacBrayne, The Wise Group, The Open University in Scotland, Future Proof Learning, the Scottish Institute for Enterprise.

The Leadership Group has drawn on the diversity and expertise of SCDI's membership. We have engaged with businesses and organisations from all sectors and all geographies of the Scottish economy to hear their challenges, experiences and priorities. We have listened to the views of business leaders, educators, trade unionists, workers and other key stakeholders. We have interrogated research, insights and forecasts from leading national and international experts on how the future of skills and the world of work are being impacted by social, economic and technological change.

This report is the result. It makes a series of

recommendations for policy innovations and solutions to the challenges Scotland faces today and will face in the future. It sets out the actions which we will need to take to fundamentally improve and change our learning ecosystem and facilitate transition to a high performing economy with higher levels of skills, productivity and inclusive growth to the benefit of better jobs and higher wages for workers. It speaks to the Scottish Government and its agencies, the UK Government, universities and colleges, employers and workers alike. Everyone has a part to play to help Scotland raise its game.

- Inclusive of all learners and all communities by improving access, widening participation and increasing diversity.
- Personalised wherever possible to individual needs and priorities.
- Informed in design and delivery by enhanced engagement with industry.
- Responsive to macroeconomic trends, evolving employer needs and social change.
- Integrates new technologies like Artificial Intelligence, Virtual Reality and Augmented Reality into curricula.

## Our Vision



Our vision is of a high performing Scottish economy in which an inclusive, responsive and world-class learning ecosystem and labour market empowers a highly skilled workforce to perform at its highest level, driving high levels of productivity, wages, global competitiveness and inclusive and sustainable economic growth across all sectors and all geographies.

By delivering more and better investment in the skills of the people of Scotland we can create jobs, scale-up and internationalise our businesses, attract inward investment, improve the quality of work and reduce inequalities across the country. Upskilling Scotland is our route through the Fourth Industrial Revolution to social and economic prosperity for all.

Scotland's learning ecosystem should be demanded, delivering a high-quality, diverse and flexible offer which is:

## Our Report



This report and its recommendations are therefore structured in the following pages around the three key pillars of a high skill, high productivity, high wage and high growth Scottish economy:

1. High Performing Individuals  
People with the skills to compete and thrive.
2. High Performing Workplaces  
Teams with the skills to compete and thrive.
3. In-Work Development  
Reskilling, upskilling, work-based learning and lifelong learning opportunities to strengthen the resilience of People and Teams to social and economic change.

# CHAPTER 1

## High Performing Individuals

The greatest asset of any business, organisation, community or nation is its people. Their skills lay the foundations for our future long-term social and economic prosperity. The World Bank's Human Capital Index (2018) powerfully illustrates that those nations who fail to invest in the skills of the workforce of today and the future will pay a heavy price in terms of lost productivity and lost growth. Scotland's learning ecosystem needs to support the workforce to develop the timeless, higher order Meta-Skills in self-management, social intelligence and innovation, topped-up with technical skills, through flexible, modular and personalised learning.



# Future Skills & Meta Skills

Scotland has been a global centre of creativity and entrepreneurialism for centuries, playing a leading role in the industrial revolutions of the past as the birthplace of world-changing innovations and inventions from the steam engine to the telephone, from the television to the ATM.

The First Industrial Revolution harnessed the power of steam and water to replace manual labour with modern manufacturing processes and machines. Mass production and greater efficiency fuelled rapid economic growth and rising living standards. The Technological Revolution of the late 19th to early 20th century represented the first wave of globalisation as new technologies like electricity, radio, railways and, ultimately, television fuelled mass transportation and mass communication. The massively reduced cost and time taken to transport people, goods and services fuelled global trade. The Digital Revolution of the mid to late 20th century heralded the beginning of the Information Age, as digital and information technology fuelled the rise of mass online communication and the knowledge economy.

**Today's Automation Revolution - the Fourth Industrial Revolution - is now bringing change of an unprecedented scale and at an unprecedented pace**

## The Fourth Industrial Revolution



Today's Automation Revolution – the Fourth Industrial Revolution – is now bringing change of an unprecedented scale and at an unprecedented pace, creating concerns about the impact on our economy and our society. Some question

whether these changes will lead to large-scale job losses as human labour is replaced or superseded by technology, known as technological unemployment.

But the idea that technology can replace people is therefore not new. Like the industrial revolutions of the past, its innovations and inventions are disrupting the status quo and changing the way we live and work. There are legitimate concerns, however in each industrial revolution of the past old jobs were lost and new jobs were gained thanks to technological progress.

## First Industrial Revolution

<b>Timeline</b>	Mid 18th to mid-19th century
<b>Trends</b>	Mechanisation, steam power, waterpower
<b>Technology</b>	Steam engine, machine tools, cement, gas lighting, chemicals
<b>Jobs Lost</b>	Manual labour in agriculture and manufacturing replaced by the spinning jenny, the steam engine and the seed drill
<b>Jobs Gained</b>	Mechanical engineers, factory workers, railway signallers, bank clerks, insurance agents, merchants

## Second Industrial Revolution

<b>Timeline</b>	Late 19th to early 20th century
<b>Trends</b>	Globalisation, electrification, mass production, mass transportation
<b>Technology</b>	Electricity, radio, cars, railways, petroleum, television
<b>Jobs Lost</b>	Horse-drawn carriages replaced by cars and trains, further job losses in agricultural industry as manual labour increasingly replaced by machines, artisanal craft production replaced by standardised mass production at scale
<b>Jobs Gained</b>	Production line workers, electrical engineers, drivers and mechanics for cars and trains, workers to manufacture and maintain new transport and communications infrastructure, new entertainment industry, trading merchants

## Third Industrial Revolution

<b>Timeline</b>	Mid-20th to early 21st century
<b>Trends</b>	Globalisation, computerisation, digitisation, mass communication
<b>Technology</b>	Computers, Internet, mobile phones, digital photography
<b>Jobs Lost</b>	Bank tellers replaced by ATMs, typists and secretaries replaced by computer software, switchboard operations automated, loss of retail jobs as online shopping challenges the high street
<b>Jobs Gained</b>	Information & Computer Technology specialists and technicians, manufacturers of new consumer goods and services, online traders and retailers, aviation industry

## Fourth Industrial Revolution

<b>Timeline</b>	21st century
<b>Trends</b>	Automation, robotisation, digitisation, Big Data, miniaturisation
<b>Technology</b>	Artificial Intelligence, Connected and Autonomous Vehicles, Big Data Analytics, Internet of Things, 3-D printing, nanotechnology, biotechnology
<b>Jobs Lost</b>	Taxi and lorry drivers replaced by Connected and Autonomous Vehicles in logistics and transportation, Acturaries, Credit Analysts and Insurance Appraisers replaced by AI programmed in financial and professional services, retail cashiers replaced by self-service machines
<b>Jobs Gained</b>	Green Design Professionals, Robotics Engineer, Ethnical Hacker, Big Data Analyst, Drone Pilot, Ethnical Sourcing Manager, Social Media Manager, User Experience Designer, Man-Machine Teaming Manager

The Fourth Industrial Revolution will fundamentally transform the world of work and the future of skills. It represents a fusion of the physical, the digital and the biological, blurring the lines between humans and machines in a hyper-connected, hyper-digital global society and economy. All jobs will be digital jobs in some form.

The Fourth Industrial Revolution is already here. Automation, AI and digitisation are disrupting business models and transforming the world of work in Scotland and across the world (Frost & Sullivan 2019). Some jobs will be displaced by these changes as some tasks are automated away or some skills are superseded. Low-paid and low-

skill jobs which involve less cognitive labour, less social and more physical labour are at highest risk of displacement. There is, therefore, a risk of a 'hollowing out' of the labour market, which would lead to higher levels of inequality and pose a challenge for Scotland's inclusive growth agenda.

There is some debate among academics, economists and technologists about the extent to which jobs may be lost in the future. Although estimates vary as to the scale of this disruption, we conclude on the balance of the evidence that the most alarmist predictions of mass technological unemployment are likely to be erroneous, because of the nature of work and the nature of the key technologies of the Fourth

### Key technologies of the Fourth Industrial Revolution



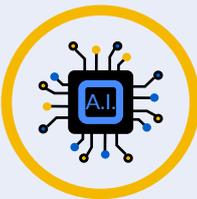
#### Automation

Automatic working of a machine, process, or system by mechanical or electronic devices without human intervention.



#### Big Data Analytics

Collection, organisation and analysis of large and varied data sets to systematically extract information or insights that can inform decision-making.



#### Artificial Intelligence

Capability of a machine to imitate intelligent human behaviour, such as decision-making, visual perception, speech recognition or translation.



#### Connected and Autonomous Vehicles

Vehicles which utilise advanced AI and sensors to undertake all aspects of dynamic driving tasks in all conditions without input from a driver, such as driverless cars, buses and lorries.

## Industrial Revolution.

Jobs which require fundamentally human Meta-Skills in self-management, social intelligence and innovation are resistant to being taken over by technology (Skills Development Scotland 2019, 2018). All jobs are a complex mix of tasks which involve different kinds of cognitive, social or physical labour. Technologies like AI expose specific tasks within jobs to the risk of automation, but not necessarily the complex and varied mix of technical skills which a single job is composed (Lee 2018).

For an office worker, while AI is adept at completing structured cognitive processes, it

struggles with social interactions with humans and creative or strategic thinking. For a construction worker, while automated machines can effectively replace repetitive, simple but strenuous physical tasks from mass production to lifting of parts, it struggles with highly dexterous or delicate tasks in varied or unstructured environments beyond the factory floor. For a social carer, while Big Data Analytics and the Internet of Things can be utilised to collect and analyse large amounts of rich quantitative data about patients or clients, these technologies can struggle to assess qualitative information, interpret insights to redesign care or provide emotional solidarity and support.



### Digitisation

Restructuring and transformation of processes or operations with digital technologies, such as computers, software or internet and cloud-based services.



### Internet of Things

Networked 'smart' devices or sensors embedded in everyday objects interconnected via the internet to collect, send and receive data, such as household appliances, consumer wearables or industrial equipment.



### Machine Learning

Kind of AI which automates the building of analytical models which enable systems to learn from data and do things they have not explicitly been programmed to do.



### Nanotechnology

Design, manufacture and application of materials on a very small scale for products such as electronic devices or medicines.

## Automating Tasks - Not Jobs

### Case Study - Peak Scientific



Peak Scientific is a leading innovator in the design, manufacture and support of high-performance hydrogen and nitrogen gas generators for analytical laboratories with its headquarters and factories near Glasgow.

It was founded in 1997 and has grown significantly to become a highly successful, truly global business with a high export footprint. It now employs around 500 people and supplies premium products and servicing from Scotland and 20 overseas offices.

With over 90% of its sales beyond Scotland, and the overwhelming majority beyond the EU to China, US, India and Australia, Peak Scientific needs to maximise productivity to remain competitive. Automation and semi-automation of some repetitive and manual processes in the firm's factory has greatly increased output and efficiency, but it has not been deployed to reduce staff numbers. In fact, the creation of an Automation Cell in its Glasgow factory in 2014 has enabled Peak Scientific to both protect existing jobs and to grow and take on more employees.

Distinct tasks in the manufacturing process to produce parts have been automated. For example, large numbers of wires and cables are required in the assembly of Peak Scientific's hydrogen and nitrogen gas generators. These wires and cables were previously cut and prepared by workers by hand in the electrical and mechanical sub-assembly team. These tasks are now completed by a machine which has been

modified to meet the company's needs.

No workers have been replaced by machines. People are now upskilled in-house to operate and work alongside these machines, which have enabled workers to increase output, consistency and productivity. The working environment is now safer and more rewarding for workers, with the risk of repetitive strain injury avoided. The machine has enabled Peak Scientific to free up floorspace and physical capacity in its factory a lift a ceiling on further growth.

Worker buy-in was initially challenging amidst instinctive suspicions or fears of job losses. But now that they have seen the benefits in the growth of their team and the improvement of their job, they now view automation overwhelmingly positively.

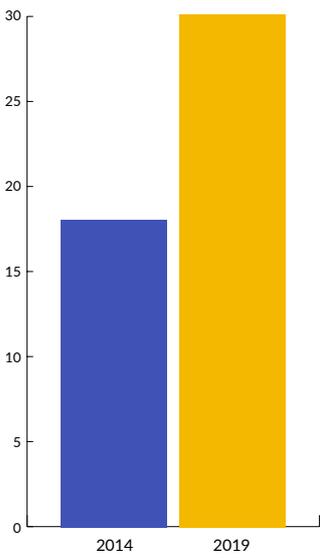
*"The Automation Cell has been a phased project of introducing semi-automated equipment to assist our technicians by removing the most labour intensive and repetitive tasks. Each machine has required capital investment and careful integration into our production process with the area subject to multiple continuous improvement activities. This area has been key to our ability to grow and remain competitive and will remain crucial in our future."*

Fraser Dunn  
New Product Integration Manager  
Peak Scientific

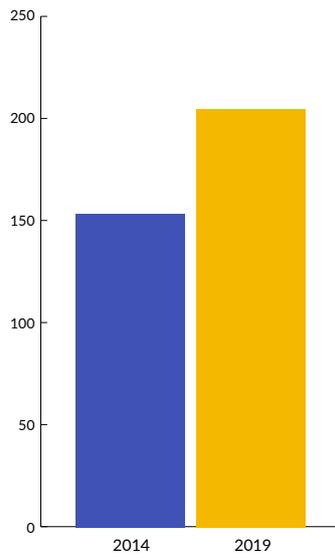


### Impact

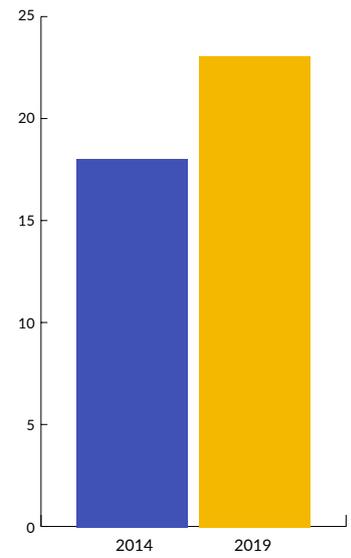
Average labour saving of 50%



Daily throughput, electrical sub-assembly



Daily throughput, mechanical sub-assembly



Employees in electrical and mechanical sub-assembly

## 'Task vs Job Automation'



*"In most cases, AI and robotics will automate individual tasks rather than whole jobs. And because jobs usually encompass a range of functions, the automation of one task means workers will be able to pivot into new roles. No machine can wholly substitute for retail assistants, care workers, hotel receptionists, warehouse workers or building labourers. These occupations are more likely to evolve than be made obsolete."*

[RSA Future of Work Centre \(2017\) The Age of Automation: Artificial Intelligence, Robotics and the Future of Low-Skilled Work](#)

Most jobs will be changed or transformed by new technology, creating increasing demand for new and emerging digital- and data-related technical skills. Indeed, to date technological progress has not prevented jobs growth with over 3.1 million jobs created in the UK since 2011.

Some jobs will be lost, delivering productivity gains for businesses and organisations and the need for reskilling opportunities to support individuals to transition into new roles, new careers and new sectors. The Labour Force Survey illustrates that among the fastest-growing occupations in the UK are programmers and software developers and care workers, while among the fastest-shrinking occupations are retail cashiers and checkout operators, bank and post office clerks and administrative personnel.

But we cannot predict the jobs of the future. Many new jobs – even entire new sectors of the economy – will be created. New kinds of jobs will be created which we cannot even imagine now. Not long ago, it would have been impossible to

anticipate that our labour market would feature Big Data Analysts, Drone Pilots or Social Media Managers. Most jobs will remain but will be transformed by new technologies as individual tasks are automated away or more closely integrated with AI. There will be a symbiotic relationship between humans and machines.

*"Every business now faces a choice over how it wishes to blend two utterly unavoidable forces of change – the degree to which it must use technology to enhance the productivity of its employees and the degree to which it will, in the name of enhanced productivity, use technology to replace employees. For most businesses, both will feature strongly."*

[Andrew Murphy, Partner & Chief Information Officer, The John Lewis Partnership – SCDI Forum 2019](#)

Although we cannot predict the jobs of the future, we do know that we have some existing and emerging key skills gaps, which this report will discuss further. We also know that we will need human skills. The pace of change means that the workforce of the future – the high performing individuals of Scotland's high performing, 21st economy – will need to be flexible, adaptable and resilient. They will need to face the future with confidence, prepared for change and ready to embrace it. They will need to be empowered to manage disruption and harness innovation. They will need to be lifelong learners. They will need to be supported by government, employers, educators and colleagues to reskill and upskill in response to new technologies, new demand and emerging trends.

This will require coordinated collective action to manage the risk of social and economic disruption. Concern about the future of skills and the world of work is widespread across our

society. Many people in Scotland are anxious about what automation, AI and digitisation might mean for their jobs and their communities (Scottish Government & STUC 2018). 58% of UK adults are worried that automation is putting jobs at risk (PwC 2019). Indeed, although young people are often presumed to be 'digital natives' who are sanguine about the future, the evidence suggests the opposite. Global research by the International Labour Organisation indicates that young people view their "future working life with fear or uncertainty" (ILO 2017).

## Concern about the future of skills and the world of work is widespread across our society. Many people in Scotland are anxious about what automation, AI and digitisation might mean for their jobs and their communities

It is therefore important that employees and employers are informed and educated about the opportunities and realities of new, complex and sometimes misunderstood technologies like automation or AI. 73% of UK workers would like to improve their understanding or use of technology if they were given the opportunity (PwC 2019) and this may allay their concerns.

Managing the risk of disruption requires enhanced capacity for political and strategic leadership, including through global dialogue and partnerships. The new AI Strategy for Scotland will be an important element of Scotland's response.

## Developing an AI Strategy for Scotland

The Scottish Government has tasked The Data Lab Innovation Centre to be an impartial convenor in the process of developing an AI Strategy for Scotland, which was a key recommendation of SCDI's Automatic... For the People? (2018) report. A co-ordinated AI strategy is needed to build on Scotland's strength as a destination for the tech industry, its vibrant start-up ecosystem and world class universities. SCDI is participating in this work alongside a range of partners.

Denmark has created a 'Techplomacy' Ambassador with offices in California, Copenhagen and Beijing to influence and collaborate with the global tech industry. The United Arab Emirates appointed the world's first Fourth Industrial Revolution Ambassador in November 2019 to attract investment and support trade in the emerging tech sector.

Denmark also established the Danish Disruption Council in 2017 to provide strategic direction to its response to technological change. The Council was established in 2017 by the then Prime Minister of Denmark Lars Løkke Rasmussen as a 'Partnership for Denmark's Future' to analyse the future labour market and suggest reforms. It is headed by the Prime Minister and comprises eight government ministers and 30 other members, including CEOs, social partners, trade unions, researchers and experts. Its tripartite-plus structure is enabling it to reach and drive forward a consensus strategic direction for the Danish response to the Fourth Industrial Revolution.

## Meta-Skills for the Future



In the Fourth Industrial Revolution, workers will need to 'manage the now', 'connect with the world' and 'create our own change'. Skills Development Scotland has defined the skills which they will need as 'Meta-Skills' (Skills Development Scotland 2019, 2018).

Meta-Skills are timeless, higher order skills in self-management, social intelligence and innovation. Meta-Skills are truly human skills which cannot be automated or replaced by AI. The Meta-Skills framework recognises that the workforce will need to develop these fundamental skills as a foundation – regardless of our future labour market, economy or society – while also developing 'top-up' technical skills which are task-, technology-, job- or sector-specific through work-based learning, lifelong learning, reskilling and upskilling.

In engaging with SCDI members throughout this project, we have found employers to respond overwhelmingly positively to the underlying ideas, key principles and pedagogical approach of the Meta-Skills framework. Businesses and organisations across all sectors and all geographies of the Scottish economy agree strongly that self-management, social intelligence and innovation will be essential to the future of skills and the future of work. Employers agree that the future workforce will need to manage and respond to a fast-changing, uncertain world. They believe that developing Meta-Skills in children, young people and all learners will support the future workforce to meet their future skills needs. They know that Meta-Skills empower individuals with the tools and capabilities to

develop more specific or specialised technical skills.

Building on our current strengths to develop Meta-Skills across our workforce should be a national priority. The pedagogical principles and approach of the Curriculum for Excellence for learning between ages 3 and 18, for example, provide a positive and complimentary platform for Meta-Skills to be developed in the next generation.

**Meta-Skills are timeless, higher order skills in self management, social intelligence and innovation. Meta-Skills are truly human skills which cannot be automated or replaced by AI**

Skills Development Scotland committed in its Strategic Plan 2019-21 to embed Meta-Skills within apprenticeships and encourage the effective development and reward of Meta-Skills throughout wider learning and skills provision. There will be a key role for employers to engage with the agency to support this.

We believe that the principles and approach of the Meta-Skills framework are strong. In our engagement with SCDI members, it is clear that Scottish employers agree that the high performing individuals of the future will require Meta-Skills in self-management, social intelligence and innovation.

Developing Meta-Skills in the workforce should

## Skills for the future: Meta Skills

Timeless, higher order skills that support the development of additional skills and promote success in whatever content the future brings

### Self management

Taking responsibility for your own behaviour and wellbeing

### Focussing

The ability to manage cognitive load by filtering and sorting information in order to maintain a sense of focus in an age of information overload and constant

Sorting  
Attention  
Filtering

### Integrity

Acting in an honest and consistent manner based on a strong sense of self and personal values

Self awareness  
Ethics  
Self control

### Adapting

The ability and interest to continue to enlarge knowledge, understanding and skills in order to remain adaptive and resilient as circumstances change

Openness  
Critical reflection  
Adaptability  
Self learning  
Resilience

### Initiative

Readiness to get started and act on opportunities built on a foundation of self belief

Courage  
Independent thinking  
Risk taking  
Decision making  
Self belief  
Self motivation  
Responsibility  
Enterprising

### Social intelligence

Awareness of others' feelings, needs and concerns in order to effectively navigate and negotiate complex social relationships and

### Communicating

The ability to openly and honestly share information in a way that creates mutual understanding about others' thoughts, intentions and ideas

Receiving information  
Listening  
Giving information  
Storytelling

### Feeling

Considering impact on other people by being able to take a range of different thoughts, feelings and perspectives into account

Empathy  
Social conscience

### Collaborating

The ability to work in coordination with others to convey information and tackle problems

Relationship building  
Teamworking & collaboration  
Social perceptiveness  
Global & cross-cultural competence

### Leading

The ability to lead others by inspiring them with a clear vision and motivating them to realise a vision

Inspiring others  
Influencing  
Motivating others  
Developing others  
Change catalyst

### Innovation

The ability to define and create significant positive change

### Curiosity

The desire to know or learn something in order to inspire new ideas and concepts

Observation  
Questioning  
Information sourcing  
Problem recognition

### Creativity

The ability to imagine and think of new ways of addressing problems, answering questions or expressing meaning

Imagination  
Idea generation  
Visualising  
Maker mentality

### Sense making

The ability to determine the deeper meaning or significance of what is being expressed and to recognise wider themes and patterns in information

Pattern recognition  
Holistic thinking  
Synthesis  
Opportunity recognition  
Analysis

### Critical thinking

The ability to evaluate and draw conclusions from information in order to solve complex problems and make decisions

Deconstruction  
Logical thinking  
Judgement  
Computational thinking

therefore be a national priority for Scotland's skills and enterprise agencies, employers and educators. Meta-Skills should be embedded across the Scottish skills and education system and integral to the activities of its agencies, institutions and providers. Meta-Skills should be embedded within Foundation, Modern and Graduate Apprenticeships, and the effective development and reward of Meta-Skills throughout wider learning and skills provision should be encouraged. Employers should also engage with Skills Development Scotland's Meta-Skills framework by encouraging discussion in their organisation about what Meta-Skills mean for them; educating their employees on Meta-Skills; and integrating Meta-Skills into their recruitment practices, training programmes and future workforce planning.

There are substantial challenges to the nationwide roll-out of the Meta-Skills framework and advancing this agenda. The learning ecosystem in Scotland is a complex, crowded and competitive landscape, with an array of largely aligned but nonetheless confusing frameworks which profess to outline the future of skills in Scotland. Each framework has its own divergent vocabulary and its own siloed activities in support. Each has relatively low levels of employer awareness or understanding – and even lower levels of public awareness or understanding. There is a plethora of different terms in use and in circulation for the same or similar concepts, excluding much of the workforce from opportunities and posing a challenge for Scotland's inclusive growth agenda.

All learners and workers need to be able to understand and articulate their skills capabilities. All employers need to be able to understand and articulate their skills needs. A joined-up, national

approach with aligned communications and co-ordinated action based on a single national framework is therefore vital to support the democratisation of awareness and understanding of Meta-Skills across our economy and our society.

**All learners and workers need to be able to understand and articulate their skills capabilities. All employers need to be able to understand and articulate their skills needs**

Skills Development Scotland, the Scottish Funding Council and the Scottish Qualifications Authority should therefore work with employers, learners, workers and stakeholders across the learning ecosystem to develop an accessible, intuitive language around Meta-Skills. Up-skilling teachers, educators and career advisors by 2025 in Meta-Skills to empower them to educate and support learners to understand, value and focus on developing their Meta-Skills will also be a critical part of this approach to democratising knowledge about Meta-Skills.

Enhancing Careers Information,  
Advice & Guidance



The importance of high-quality careers information, advice and guidance in schools, colleges, universities and beyond is rightly reflected across numerous policies and strategies in Scotland. Scotland now has an all-age, multi-

channel careers service delivered by Skills Development Scotland. It is focused on engaging and inspiring young people at an earlier stage in their development and equipping them with the career management skills they require throughout life. Careers information, advice and guidance is also provided by local authorities in schools and by Jobcentre Plus in communities.

There is a recognition, however, of the need for further improvement and an opportunity to achieve progress with the upcoming publication of the Scottish Government's revised Careers Strategy. There is a need to help young people and adults across Scotland to make better informed decision-making about learning and employment opportunities in a fast-changing labour market.

It is clear from our engagement with SCDI members across Scotland that careers advice at all stages and from all providers is in need of significant improvement. Employers often report that careers advice services lack close links to employers or do not provide truly up-to-date knowledge of the labour market. Learners often report that careers advice from schools, colleges and universities can fail to help them navigate the contemporary labour market or prepare for the world of work. Employees often report a lack of access to - or a lack of awareness of opportunities for - services to support career progression or career change.

There is a need for Scotland to learn from global best practice to improve its performance and to enhance support for all people at all stages of their life and career, including to address the relative lack of support and services for mid-stage or mid-career adults. Careers advice at this stage is crucial to support reskilling and inform career

transitions.

The Scottish Government's revised Careers Strategy should enhance focus on lifelong learning in Meta-Skills and up-to-date awareness of skills, labour market, technology and sector trends for careers advisors, guidance teachers and Jobcentre Plus advisors to deliver fit-for-purpose, all-age careers information, guidance and advice. It should also underline the need for employers to provide appropriate careers information, advice and guidance to support their employees to develop and progress.

Since 1971, Germany's Federal Employment Service – the Bundesagentur für Arbeit – has acted as an external agency providing personal career guidance and advice in schools which reinforce and are complementary to schools-based programmes. The Organisation for Economic Co-operation and Development has highlighted this as a world-leading model of best practice which ensures closer links to the labour market; deeper knowledge of macroeconomic, skills demand and skills supply trends; and closer links to employers to facilitate work-based learning opportunities (OECD 2004). The success of the model is predicated on strong, close ties and frequent interaction between schools and the agency, including regular visits, in-depth personal interviews, online chat functions and placement offerings.



# The Learning Ecosystem

Scotland has a proud heritage as the birthplace of universal education and a beacon of the Enlightenment. Today it is home to world-leading, world-renowned institutions of higher learning at the cutting edge of research, innovation and teaching. There are more world-class universities per head of population in Scotland than in any other country in Europe. Our workforce is the highest educated in Europe – nearly half of Scots have a tertiary education. Our colleges are rooted in and serve the needs of individuals and employers in communities across Scotland. Our skills and education systems are diverse and strong.

But Scotland's skills and education systems – our learning ecosystem – also contribute to a complex, crowded and competitive landscape. The proliferation of providers, courses, modes and pathways has created a significantly diversified offer which has increased choice for learners and employers.

However, there is a growing sense that this proliferation has also created a learning ecosystem which is increasingly challenging and confusing for learners and employers to navigate. Many of our young people face complex, challenging learner pathways and career journeys. Those in rural or isolated communities in particular report difficulty in accessing training, development and education opportunities which are right for them and which support their personal and professional ambitions. Skills Development Scotland's Skills Action Plan for Rural Scotland: 2019 – 2021 is an important first step

## A Vision for the Future



Our ambition is that Scotland continues to develop a learning ecosystem which is demand-led, delivering a high-quality, diverse and flexible offer:

- Inclusive of all learners and all communities by improving access, widening participation and increasing diversity;
- Personalised wherever possible to individual needs and priorities;
- Informed in design and delivery by enhanced engagement with industry;
- Responsive to macroeconomic trends, evolving employer needs and social change; and,
- Integrates new technologies like Artificial Intelligence, Virtual Reality and Augmented Reality into curricula.

It is important that this offer is strengthened through enhanced industry engagement. Employers should be at the heart of the design and delivery of skills and education provision, as indicated by the direction of the Strategic Board for Enterprise & Skills to fully implement the five-stage skills alignment planning model, aligning provision with industry needs. The Scottish Apprenticeship Advisory Board, for example, is employer-led in the design and delivery of apprenticeships, demonstrating the value of engaged industry leaders influencing provision.

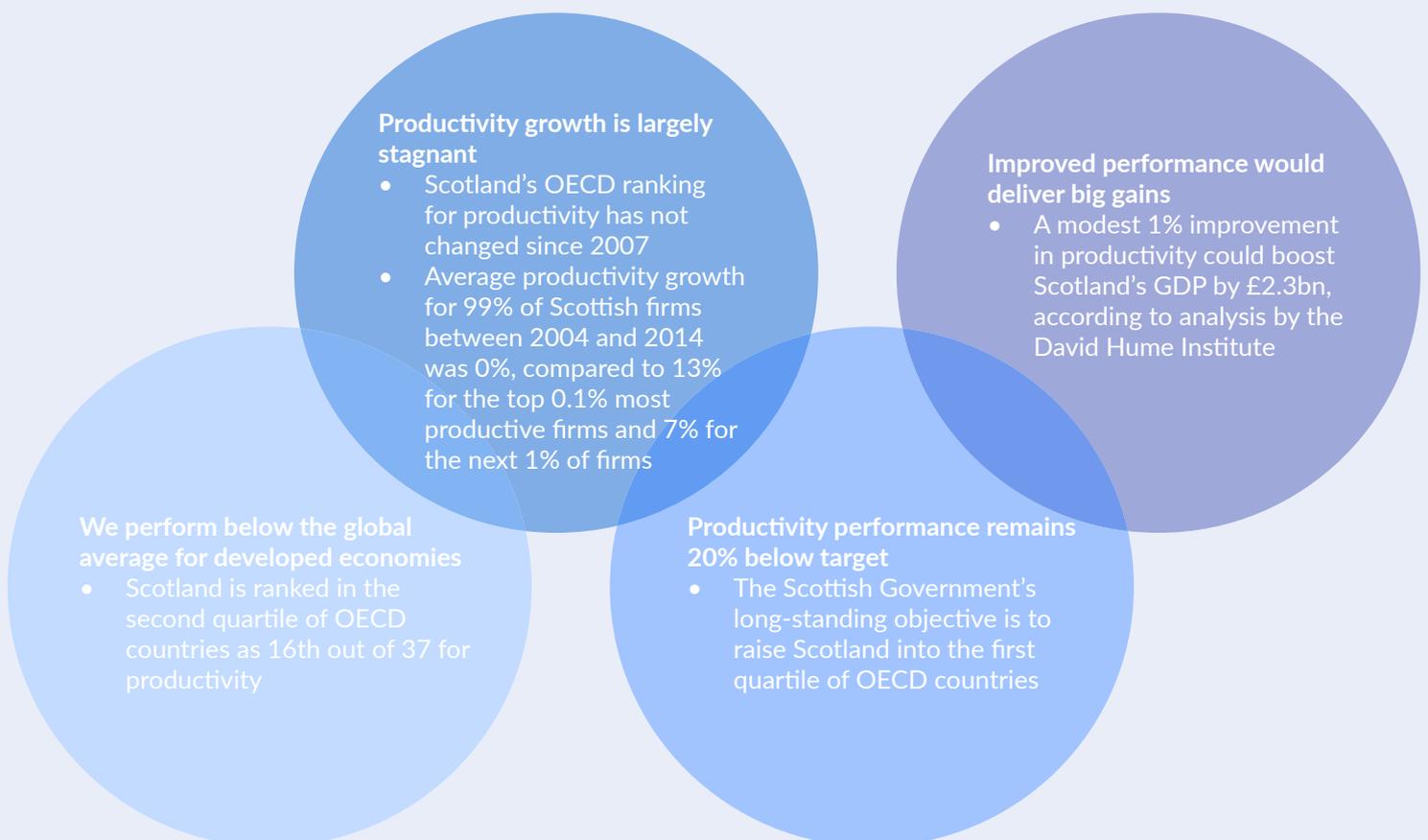
New technologies offer an opportunity to

transform education to make it more accessible for learners, more authentic to the world of work and improve standards. Many businesses, organisations and sectors recognise the need to change their approach to skills in response to these trends. Some are already acting. For example, as the global skills and training body for the energy sector, OPITO has developed a plan for the sector's "multi-skilled, technology-enabled workforce" which accelerates its plans to "supplement traditional teaching methods with simulation, augmented reality, virtual reality and online training" (OPITO 2019).

## High Skill Workforce, Low Skill Work?

Despite our highly educated and highly qualified workforce, the Scottish economy underperforms against international competitors and comparators in terms of productivity. Scotland's high skill workforce is facing a low skill labour market in many sectors and geographies.

### Scotland's Productivity Challenge



### Productivity Club Scotland

Productivity Club Scotland is a pilot project being developed to strengthen networking and peer-to-peer learning for businesses and being delivered by SCDI. The industry-led Club is free and open to all. It is supporting businesses who want to improve their own performance and share their advice and experiences to help others. Its focus includes recruitment, digital adoption, future planning and strategy, leadership and management, employee wellbeing and signposting to support, funding and training opportunities.  
[www.productivity.scot](http://www.productivity.scot)

Low skill jobs and precarious work are a significant and growing feature of the Scottish economy. Political instability, economic uncertainty and the cost of labour relative to capital has encouraged businesses and organisations to postpone investment and deploy cheap labour to fill gaps. The flexibility of UK labour market laws and regulations compared to our northern European neighbours has also fuelled the rapid growth of the gig economy. The gig economy boom has created large number of jobs, but mostly low-pay, low-skill and precarious work with a lack of security and opportunities for progression and upskilling.

There is a significant challenge around over-qualification and under-employment. The Chartered Institute of Personnel and Development found in 2018 that 30% of the UK workforce believes that although their job was advertised as requiring a degree, it in reality does not and/or requires a lower set of skills. The Office for National Statistics estimates that 31% of graduates are overeducated for

their job. A large proportion of jobs in the UK economy require low or no qualifications – 17% of employees say their current role requires no qualifications.

Nonetheless, the number of higher skill jobs is also growing, underlining the need to continue to invest in upskilling and for employers to properly identify graduate-level jobs. 79% of UK businesses expect to increase the number of higher-skilled jobs in their workforce, but 66% are concerned that they will not be able to fill these positions (CBI 2019).

### Flexible, Modular & Personalised Learning



Scotland's highly educated but low productivity economy suggests that skills supply is not aligned to skills demand. Our engagement with SCDI members across all sectors and all geographies of the Scottish economy suggests that there are two key reasons for this. Firstly, as discussed above, there is an opportunity to better and further develop the Meta-Skills – the timeless, higher order skills of the high performing individuals of the future – of Scotland's workforce.

Secondly, skills demand from employers is evolving, as is learners' demand for discipline, skills and mode of education. Expectations are changing towards increasingly flexible, modular and personalised learning. There is significant demand for learning which is tailored and bespoke to individual or employer needs and priorities, empowering Scots to top-up their Meta-Skills with specific, specialised or technical skills, as envisaged by Skills Development Scotland's Meta-Skills framework.

In response, universities and colleges are increasingly developing their capacity to offer short courses in a flexible way to enable more people to have opportunities to reskill and upskill (Universities Scotland 2019; Independent Commission on the College of the Future 2019; Colleges Scotland 2018). Current funding models for higher and further education will need to be reformed to support and incentivise further progress. Modules from existing undergraduate and postgraduate qualifications, for example, could be unbundled to offer short courses at a high level and of a high quality.

Increasingly, universities are using their expertise to offer shorter-term opportunities for learners to gain specific skills. The Scottish Funding Council has supported this in higher education through its new Upskilling Fund. Data from the Scottish Funding Council also shows that in 2017/18, 31,965 people benefitted from Continuous Professional Development opportunities delivered by Scottish universities and this number has been increasing year on year. Institutions should be encouraged to credit rate these new programmes onto the Scottish Credit and Qualifications Framework to assist with skills recognition for employees.

There will be a growing need for flexible, modular and personalised learning, but there remains a continued imperative to recognise

**Scotland's highly educated but low productivity economy suggests that skills supply is not aligned to skills demand**

There will be a growing need for flexible, modular and personalised learning, but there remains a continued imperative to recognise and strengthen the value of the acquisition of knowledge through sustained study in more conventional or traditional form. Employers continue to highly value higher and further education. The four-year Scottish Honours Degree remains a globally recognised and widely coveted benchmark of quality of learning.

Likewise, there is also a need for greater flexibility to deliver bespoke skills solutions at City Region level. The City Region Deals and Growth Deals which are currently being implemented or negotiated across Scotland provide an opportunity to meet the diverse skills challenges and skills demand which vary across the regions. City Region partners need to work together to coordinate skills provision and funding.

#### **Scottish Funding Council's Upskilling Fund 2019-20**

The Upskilling Fund is a new stream of funding responds to the aspirations of the Strategic Board for Enterprise and Skills' Strategic Plan. It supports Scottish universities to develop their capacity to offer short, flexible provision to allow people to upskill or reskill, including:

- Short courses utilising parts of existing courses/provision
- Provision aimed at career changers
- Specific academy models in a specialist area of expertise offering flexible and intense training models
- Work with specific employers or industry bodies to meet specific needs within their workforces
- Upskilling linked to existing interventions

## The Revolution Will Be Democratised

Technologies like Artificial Intelligence will increasingly affect the way we live and work, but there is a lot of mythology and public concern around how. Workers need the skills to understand and make the most of these new technologies. Democratising knowledge of and supporting upskilling in new and emerging Fourth Industrial Revolution technologies should be a national priority

The Government of Finland launched an ambitious scheme on AI in May 2017 in partnership with the University of Helsinki. 'Elements of AI' is a free-access online course in Finland which is open to a global audience and educates learners on the fundamentals and foundations of AI. The objective was to reach 1% of the total Finnish population with the purpose of disseminating and democratising digital, data and tech skills to upskill and empower workers.

Elements of AI has been highly successful with over 220,000 participants since its launch – over 3% of the country's population. It has contributed to Finland developing a competitive advantage in this space and its status as a leading destination for tech spin outs and inward investment. Estonia has recently released an Estonian-language version, with Germany and other nations set to follow their lead.

It is clear that there is a shortage of such skills and knowledge in Scotland's workforce. Nine in 10 organisations across the UK say that they lack the digital skills they need. These skills are largely related to cyber security, cloud-based development and management, and

emerging technologies like AI. Around half of employers report that this digital skills gap has already negatively affected the productivity and profitability of the business, with this trend set to worsen (Open University 2019b). In its review of "digital progress across the public sector", Audit Scotland (2019) highlighted that a "shortage of specialist digital skills" was hampering the public sector's ability to transform service delivery, improve services and reduce costs through digitisation.

## Improving Access & Widening Participation



For Scotland to thrive and compete in the Fourth Industrial Revolution, we will have to harness the skills and talent of all of our people. Everyone will need to be supported to develop their skills, perform at their highest level and play their part in Scotland's future.

Due to entrenched social and economic inequalities there are barriers to access and participation in skills and education across all geographies of the Scottish economy. These barriers can be particularly high for those who have a disability or live in rural, immigrant or deprived communities. As noted by SCDI's Rural Commission, residents of rural Scotland often face issues of poor digital and transport connectivity to link them to education and employment opportunities. Disabled people and ethnic or religious minorities in Scotland are substantially more likely to live in poverty, reducing their ability to finance education opportunities (Scottish Government 2019).

Improved access to re-skilling and upskilling

opportunities for learners and employers in deprived and rural communities is essential to support inclusive growth and to ensure that no one is left behind as the Fourth Industrial Revolution gathers pace. Technology enables flexible solutions and flexible models of delivery to improve access, like distance learning or Massive Open Online Courses (MOOCs).

### The Rural Commission

The Rural Commission was established to look at the challenges and opportunities that exist outwith central urban Scotland and ensure we harness the future economic potential of all of Scotland. This independent Commission was launched in April 2018 and published its final report with 42 recommendations on People, Place and Productivity in September 2019.

[www.scdi.org.uk/ruralcommission](http://www.scdi.org.uk/ruralcommission)

There is a welcome and renewed focus on the widening participation agenda by universities and colleges with a strong commitment from the Scottish Government to drive progress (Universities Scotland 2019). Delivery models will have to be increasingly flexible with expanded part-time provision to improve accessibility, especially for women. There is also an opportunity for universities based in our largest cities to partner with colleges to utilise their deep roots in smaller towns and rural communities across the country. As the Independent Commission on the College of the Future (2019) has noted, colleges are “central anchor institutions” which are “deeply rooted in their communities”, often in rural or deprived neighbourhoods. Rural employers and learners

have distinct needs which universities and colleges can best meet in partnership.

Universities are continuing to widen participation and improve access to ensure equal access to learning opportunities. Some institutions like the Open University do not have entry requirements as part of their commitment to improve access and widen participation. However, the use of Scottish Index of Multiple Deprivation postcodes as directed by the Scottish Government by other institutions to determine eligibility for contextual or reduced entry tariff admissions decisions can erect barriers to access to disadvantaged people. Few rural areas have such postcodes, which are concentrated in urban areas. Many disadvantaged individuals in rural and urban neighbourhoods are ‘hidden’ in otherwise affluent postcodes. There is a need for an alternative data proxy for deprivation and disadvantage to be developed to further improve access and more accurately measure progress. We welcome the work which the Access Data Working Group has initiated to examine alternatives.

### OpenLearn

OpenLearn is a free learning platform delivered by The Open University. Since its launch in 2006, OpenLearn has attracted more than 69 million visitors to engage with its bite-sized learning experiences designed to fit easily into daily life. OpenLearn originates, commissions and develops content that unites faculty and University priorities with areas of topical and general interest to delivery quality assets openly available for teaching and learning.

[www.open.edu/openlearn](http://www.open.edu/openlearn)



# The Talent Pipeline

Developing a talent pipeline is a critical aspect of future planning and future proofing for any business or organisation, laying the foundations for future growth. However, it requires investing in the human capital of the workforce through reskilling and upskilling; developing internal and external relationships; and prioritising long-term and strategic thinking.

Developing a talent pipeline can be challenging for SMEs, which are the backbone of the Scottish economy. 95% of Scotland's businesses have fewer than 50 employees and only 1% are large employers with 250 people or more. Interventions which leverage improved performance among SMEs will therefore deliver the most positive impact on national outcomes for Scotland.

## Developing a talent pipeline can be challenging for SMEs, which are the backbone of the Scottish economy

But this will require a distinct approach. SMEs have distinct skills needs and require distinct interventions compared to large employers. SMEs are likely to invest less in their people, especially during periods of economic difficulty or uncertainty, damaging the foundations of long-term growth and preventing productivity gains. They are also more likely to face knowledge barriers to engaging with young people and talent, in addition to familiar challenges of limited

resources and capacity.

Our engagement suggests that many SMEs face particularly urgent digital and data skills gaps, and issues around an ageing workforce or succession planning, as a result. It will be increasingly important for employers to retain the expertise and experience of older workers to develop talent pipelines, utilising their skills to mentor, coach and upskill their younger colleagues.

## SMEs have distinct needs and require distinct interventions compared to large employers

SMEs need to be supported to understand and navigate the skills support available to them. There is also growing demand for more intense and direct skills consultancy support via initiatives such as Skills for Growth and engagement with Skills Development Scotland's regionally dispersed Employer Engagement Advisers. Engaging with Foundation Apprenticeships may be another route for employers build a talent pipeline in key skill areas by engaging young people still at school. The web portal which is under development and will provide businesses of all sizes with a single point of entry to support by Scotland's skills and enterprise agencies – as recommended by the Strategic Board for Enterprise & Skills and advocated by SCDI – is very welcome.

To support their talent pipeline, businesses need to invest in improving the digital, management and leadership skills of their workforce with simplified and intensified support from Scotland's skills and enterprise agencies, including the single online portal under development. This is

especially critical for SMEs. Digital and remotely accessible services and support fit for the 21st century are also essential for employers in rural, isolated or island communities across Scotland.

## Achieving Sustainability



There are examples of interventions in Scotland which are already successfully supporting SMEs to develop a talent pipeline with the skills they need to scale-up – including those provided directly by universities, ScotGrad, the Robertson Trust’s Scholars or the Santander Universities SME Internship Programme. The Santander Universities SME Internship Programme is delivered in partnership with Scottish universities to match employers with students or graduates, providing financial support for a limited period which fully funds the internship. Paid interns work on a full-time or part-time basis across a variety of sectors. They are often tasked with completing specified projects, such as creating a new website, redesigning a product or conducting market research.

The Santander scheme is highly regarded by employers, universities and students with a strong track record of success and high levels of satisfaction. Significant numbers of interns go on to take up further or permanent roles in the same SMEs. In 2018, for example, 59% of interns facilitated by the University of Strathclyde were offered further employment. This programme, like the aforementioned similar schemes, is assisting small numbers of SMEs to construct talent pipelines, while also developing the skills of young people through meaningful work-based

learning and supporting their transition from higher education to employment.

Other parts of the private sector should explore replicating the model to support their SME supply chain. By supporting their partners to develop a talent pipeline which upskills their business and improves its productivity, larger businesses can enhance their own competitiveness. The Scottish Government and its agencies could also explore how to fund or incentivise similar schemes on a larger scale or at the national level, drawing on universities’ expertise and access to young talent to support SMEs.



# Access to Talent & Migration Policy

Immigration has been good for our economy and our society. SCDI has always believed that Scotland must be an open, inclusive and globally connected nation. Internationalisation over the past several decades through exports, imports, global supply chains, research collaborations, business partnerships, student exchanges and migration have been good for our economy and society. Scotland has become a more diverse, globally minded nation thanks to its increasingly diverse, globally minded workforce.

It is vital that this progress is not undermined by the UK's withdrawal from the European Union. Access to talent from across the EU thanks to freedom of movement – and from across the world thanks to increasing globalisation – has supported access to labour and skills for employers at all levels and in all sectors. Scotland must remain an attractive destination for workers, entrepreneurs, investors, students and tourists.

## Labour Shortages & Skills Gaps



Scotland's economy and society have a distinct profile and needs from the rest of the UK. Scotland needs immigration. To compete internationally, and tackle our demographic challenges, Scottish employers need access to global talent, skills and labour via an open, welcoming and effective immigration system. Employers need to access the right people with the right skills regardless of their nationality or background.

Access to global talent is increasingly important for Scotland, because of our historically tight labour market and changing demographics. Scotland faces significant and escalating labour supply challenges (David Hume Institute 2019). Unemployment has been near record lows for several years, creating labour shortages and skills gaps which have inhibited business growth for many employers across the Scottish economy who are struggling to secure the right people with the right skills.

## Access to global talent is increasingly important for Scotland, because of our historically tight labour market and changing demographics

Inward migration also remains critical to reversing the trend of Scotland's ageing population and shrinking working-age population. Scotland continues to lose young talent, especially high skilled graduates, to global cities like London and beyond across Europe, North America and East Asia. Scotland also has one of the lowest fertility rates in the OECD and is forecast to age faster than the rest of the UK.

In 1947, there were seven workers for every retired person; by 2030, there will be just three. The number of people aged over 75 in Scotland has increased by 31% since 1998, while the number of people under 15 has decreased by 8%. Our pensioner population will increase by

2.9% or 240,000 people by 2035, compared to a 1.7% increase across the UK. Scotland's working age population is expected to shrink from 64% of the total population in 2018 to 62% in 2043. Scotland's share of the total UK population could fall from 8.2% to 7.7% by 2043.

The challenge is especially acute in many rural communities, which is recognised by Skills Development Scotland's Skills Action Plan for Rural Scotland: 2019 – 2021. The population is ageing in some rural areas as much as five times faster than in urban central Scotland. By 2022, over 75s could increase by 50% in Orkney compared to 10% in Glasgow and Dundee. There remains a threat of depopulation in some places, which need new arrivals to secure a sustainable local future.

Official projections from the National Records of Scotland suggest that all of Scotland's future population growth will come from immigration. Today, around 5.2% of Scotland's total workforce are EU nationals. One in 10 of Scotland's small businesses is led by an immigrant entrepreneur, creating over £13 billion and over 107,000 jobs.

## Reforming the UK Immigration System

The Home Office's Immigration White Paper outlines the UK Government's proposals for the immigration system after the UK departs the EU. It includes some positive policies. It proposes to allow overseas citizens who study in the UK to remain for two years after graduation, reinstating the post-study work visa as strongly and consistently advocated by SCDI since its abolition in 2012. It also proposes to remove the annual

cap on the number of work visas issued and to end the requirements for labour market tests by employers who wish to sponsor an individual worker. These reforms are welcome.

However, the overall policy direction of the rest of the White Paper is towards reducing levels of inward migration to the UK. Its major proposals would clearly create more restrictive immigration laws and processes intended to achieve this objective. We have serious concerns about this approach and its potential impact on Scotland's economy and society. Changing attitudes and approaches in the UK to improve the integration of migrants in the labour market would deliver significant economic benefit and support community cohesion (IPPR 2019).

The current immigration system requires urgent and radical reform. The current system is widely seen across our economy and society as hostile and unwelcoming. Its processes are highly complex, imposing high and often prohibitive costs and administrative burdens on individuals, families and employers.

The current minimum salary threshold for most work visas for individuals coming from non-EU countries is £30,000 per annum. The White Paper initially proposed that this threshold would apply to all EU and non-EU nationals after Brexit. It is welcome that the Home Office is reviewing this proposal, including the potential for flexibility within the UK to reflect the divergent circumstances of its nations and regions.

## The current immigration system requires urgent and radical reform

A minimum salary requirement of £30,000 does not reflect Scottish labour market conditions and would not meet Scottish employer needs. Wages are substantially lower in Scotland, and increasing at a lower rate, than the UK as a whole. The median gross salary in Scotland for all employees is £23,150, compared to £28,677 across the UK. Between 2017 and 2018, gross median weekly earnings for full time employees in Scotland increased by 3%, compared to a 3.5% increase across the UK as a whole.

Moreover, there are significant labour shortages and skills gaps in several sectors in Scotland which are highly reliant on migrant labour and where pay in many roles is usually considerably below the level of £30,000. This includes key strategic or growth sectors like agriculture, construction, food processing and health & social care. High skill roles, or high demand skills, do not always correlate to high pay. The social and economic value of an individual, including their level of skills or their level of productivity, is not necessarily reflected in their salary. Highly talented researchers in academia and highly skilled individuals in the digital and technology sector, especially those at early career stage, are likely to not command £30,000 in salary. Inward migration at all levels of the labour market is critical to meeting the distinct needs of Scotland's demography and economy to support productivity growth and business growth.

Migration policy also needs to better support the social and economic integration of refugees and asylum seekers, who represent a relatively small but important untapped pool of talent and underutilised skills. There are around 3,000 asylum seekers in Scotland. At present, asylum seekers in the UK are only permitted to apply for the right to work after twelve months. Those who

are eventually given permission to work are only permitted to take roles which are specified by the highly prescriptive Shortage Occupation List. Other European and North American countries do not enforce such strict waiting periods for asylum seekers seeking employment.

### A Differentiated Migration System for Scotland

A number of federal and devolved polities around the world operate successful and long-standing differentiated systems to reflect the different profile and needs of their diverse geographies and economies. Lessons can be learned from the Australian, Canadian and Swiss models. This work has already begun with recent research by the independent Expert Advisory Group on Migration and Population (Scottish Government 2019c).

For example, Canada is a highly diverse society and high skill economy supported by high levels of immigration. Provinces can negotiate with the federal Canadian government for the allocation of extra points in the national points-based visa system to immigrants who agree to live at least initially within their territory. It enables provincial governments to create programmes with distinct provincial rules that favour the kind of skills they need. A differentiated migration system for Scotland within the UK framework could be tailored to meet the needs of Scotland's distinct economic and demographic profile and supported in its design and implementation by Scotland's distinct political capacity and devolved institutions.



# CHAPTER 2

## High Performing Workplaces

High performing individuals need to be part of great teams which enhance and harness their skills through collaboration and progression. High performing workplaces are built together by government, educators, employers and employees through increased alignment of skills supply with demand and enhanced recognition of skills; innovative and inclusive recruitment to create and nurture a diverse workforce; progressive leadership and management approaches which empower people; and a commitment to Fair Work.



# Skills Recognition, Supply & Demand

Many employers in Scotland report increasing difficulties identifying the right people with the right skills for their business or organisation. As discussed previously, this is often the result of Scotland's tight labour market or the UK's restrictive immigration system, which reduce the supply of labour and limit access to talent. In addition, new skills demand, especially key Fourth Industrial Revolution skills in data or digital, can emerge and surge rapidly in response to the pace of technological change, compelling the learning ecosystem to play catch-up.

This is a challenge facing all nations, not just Scotland. How future innovation may or may not change specific, specialised and technical skills demand is unforeseeable. According to the Open University's Business Barometer (2019a) skills gaps cost Scottish businesses and organisations £360 million every year. Our labour market needs to improve to meet the needs of our businesses and organisations to support their growth. In response, Scotland must continue to take action to widen labour market participation and to improve skills recognition by both employers and employees.

## Scotland's 7 Key Skills Gaps & Future Skills Needs

Informed by the current context and the emerging challenges which we face, this report has identified seven key skills gaps and future skills needed for Scotland.



### Meta-Skills

The Fourth Industrial Revolution is disrupting all sectors of the economy. People will need timeless, higher order skills in self-management, social intelligence and innovation to thrive and compete in a world which requires resilience to change.



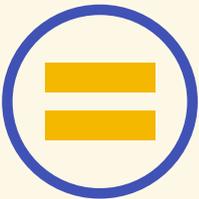
### Net-Zero

Scotland's target of net-zero carbon emissions by 2045 will require industrial transformation on a massive scale. Businesses will need knowledge and skills in decarbonisation, energy efficiency and the circular economy.



### **Leadership**

Scotland faces a leadership skills gap. Leaders and managers need to have the skills to scale-up, innovate and internationalise their business and get the best out of their people.



### **Equality**

Scotland needs to create and nurture a more inclusive learning ecosystem and labour market. Recruitment and workplaces must be free from discrimination. Businesses with diverse workforces have a competitive edge.



### **Digital, Data and STEM**

Every job and every business will be digital. Big Data will be key to growth. The technology sector is Scotland's second fastest growing and faces a growing shortage of key skills.



### **Childcare and Health & Social Care**

Childcare is the fastest growing sector of the Scottish economy, fuelled by Scottish Government policies to expand funded provision. Skills gaps and labour shortages are looming. Our demographics mean that demand in health & social care will also continue to rise as our population continues to age.



### **Internationalisation**

Scotland faces a linguistic and cultural awareness skills gap. A lack of language skills across society is a barrier to many businesses exporting and the further internationalisation of the Scottish economy.

## Young Engineers and Science Clubs (YESC)

YESC is the Scottish Council for Development & Industry's Scotland wide nursery, primary and secondary school education programme. Supported by government and industry partners, it plays a key role sparking enthusiasm in Science, Technology, Engineering and Mathematics (STEM) subjects, inspiring the next generation of engineers and scientists in Scotland.

It upskills teachers to deliver innovative, engaging and topical STEM activities in schools, growing teacher confidence and capacity, which are often raised as a significant barrier to STEM learning in Scotland's schools and a factor in our STEM skills gap.

In collaboration with our industry partners we deliver events and programmes to address key government initiatives including the STEM and Digital Strategies. Its activities also have a major focus on improving increasing gender diversity in education and industry.

YESC is an important part of SCDI's commitment to developing the skills of Scotland's next generation and preparing them for the economy of the future.

[www.scdi.org.uk/yesc](http://www.scdi.org.uk/yesc)

## Widening Labour Market Participation

Widening labour market participation will require action to address lower levels of employment and higher levels of economic inactivity, under-employment and skills underutilisation which are experienced by many women, young people and graduates, disabled people, migrants and refugees in Scotland. Greater equality for women in the labour market and the workplace will harness their full economic potential. More older workers will also have to be supported to remain in the workforce to prevent severe labour shortages in the future given Scotland's ageing demographics. Expanding the talent pool available to employers will better support businesses and organisations to access the people and skills they need.

Childcare and more equal parental leave are

recognised as key means of supporting increased labour market participation by women. Childcare supports many women – upon whom the domestic and caring burden still tend to rest disproportionately and unequally in Scotland as across the world – to return to work after the birth of a child. Countries with world-leading, progressive policy approaches to childcare achieve the highest levels of labour market participation and career progression by women.

The Swedish model of childcare and parental leave has supported the development of a significantly more equal and effective labour market. Heavily subsidised public childcare provision is guaranteed to all with fees capped at 3% of parental income. Children between three and six are entitled to free childcare for up to 15 hours per week. Both parents are eligible for 240 days' parental leave each after the birth of a child at generally 80% of their salary followed

by a statutory minimum. 90 days are reserved for each parent, but they can choose to transfer their remaining 150 days to the other parent. Single custody parents are entitled to a total of 480 days leave.

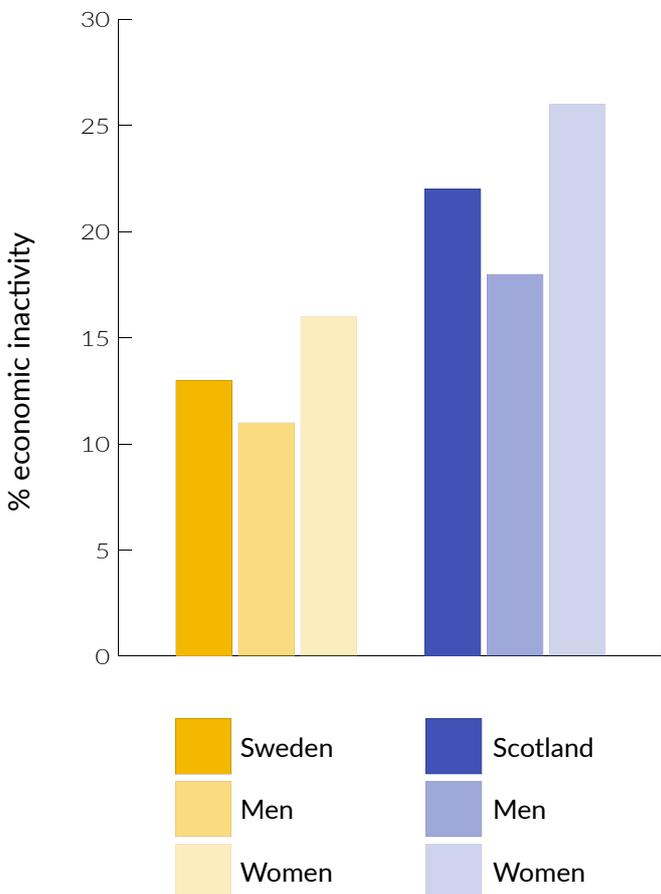
Conversely, in the UK mothers are eligible for up to 52 weeks – 26 weeks of Ordinary Maternity Leave and 26 weeks of Additional Maternity Leave. Fathers are entitled to up to two weeks Statutory Paternity Pay. They can choose to take an additional two to 26 weeks off work, but each extra week is subtracted from the allocation of their partner. Less than 10% of UK fathers choose to exceed two weeks, however, compared

to Swedish men who take an average of three months of leave.

## Childcare and more equal parental leave are recognised as key means of supporting increased labour market participation by women

The Scottish Government's ambitious and ongoing expansion of funded childcare is therefore very welcome in its support for increasing numbers of families across Scotland. All three- and four- year olds and eligible two-year olds are currently provided with 600 free hours of early learning and childcare each year. This will increase to 1,140 hours from August 2020. However, there are implementation issues and challenges given that the childcare sector is the fastest growing sector of the Scottish economy (Skills Development Scotland 2019c).

The National Day Nurseries Association found that less than 1 in 3 private nurseries in Scotland expect to be able to offer the extra hours and meet the target. A key concern or barrier is a lack of available staff as expanding the childcare workforce becomes a vast emerging challenge for Scotland's labour market. It is estimated that 11,000 new workers will be required by 2020 alone. Beyond 2020, the workforce will need to continue to expand at a significant rate. There will need to be a strategic focus on attracting new labour and talent into the childcare sector building on Skills Development Scotland's Investment Plan for the Early Learning and Childcare sector. Meeting emerging and future skills demand will require the development of



a highly skilled, increasingly diverse workforce, including tackling the highly gendered nature of job roles in the sector. This should be a priority because a failure to adequately staff the Early Years, Early Learning and Childcare sector would have significant and negative knock-on effects across the rest of the economy, including restricting efforts to widen labour market participation.

Better integrating many migrants and refugees into the labour market is perhaps more complex and challenging. Migrants and refugees often face distinct barriers to participation in the labour market which require distinct policy interventions. The difficulty faced by employers in seeking to recognise prior learning – such as experience or qualifications gained abroad in an often very different educational or legal context – is a frequent barrier to employment and career progression for many newcomers to Scotland. This has resulted in endemic under-employment and under-utilisation of skills for migrants across the Scottish labour market. Anecdotal evidence of experienced engineers labouring on construction sites, qualified social workers fulfilling low-level roles in social care or highly educated graduates with low-skill jobs in retail or hospitality are an all too familiar story of wasted talent.

The Scottish Government is supporting a pilot initiative led by Glasgow Caledonian University, and supported by the SCQF Partnership, with funding to develop an approach to support employers to help migrants, refugees and asylum seekers transfer training or experience gained in other countries into UK-recognised qualifications. The initiative has launched with a focus on key sectors such as construction, engineering, hospitality, IT and social care. It has already successfully helped small numbers

of migrants and refugees to transition into work. Scotland needs to build on this work to implement a comprehensive national approach to the recognition of prior learning developed in other countries to ensure that employers can fully harness the skills and talent of the migrant workforce.

### Skills as Capabilities



Nonetheless, recognition of skills and prior learning is a challenge across the workforce, not only for newcomers to Scotland. There is a pressing need to improve the evaluation and recognition of skills, and the articulation of skills demand, by both employers and employees.

It is clear from our engagement with SCDI members that employees may not always be able to articulate the skills which they possess in a way which makes sense to or is compelling for employers. They need to be supported to understand the future of skills and their own skill profile.

Equally, employers may not always be able to clearly or precisely articulate the skills required in a particular role. Most employers in the Scottish labour market still tend to recognise skills as qualifications. Most job adverts, for example, still feature narrow, highly prescriptive qualifications requirements, such as Highers, HN or degree-level qualifications, which prospective candidates are expected to meet in cases where this is not necessary. Such an approach immediately narrows the talent pool for employers by discouraging applications from a more diverse range of candidates and by pre-screening others from consideration.

We believe that employers should interpret skills as capabilities and competencies, rather than necessarily as qualifications. The highest qualified candidate is not always the highest skilled candidate. Employers should recognise that individuals can develop their skills to a high level through informal and non-formal learning, or in the context of the workplace, without formal accreditation. Individuals should be recognised and rewarded for the skills they have. This is particularly important for young people entering the labour market for the first time or older workers transitioning into a new career or a new sector.

## Employers should interpret skills as capabilities and competencies, rather than necessarily as qualifications

Qualifications will often be appropriate or even strictly necessary for many jobs. But skills which are developed beyond the workplace in a personal, community or voluntary environment are also important and can be missed by qualifications-based pre-screening, in interview scenarios or in decisions about internal progression and development. Thinking about skills as capabilities should also challenge the notion that those in low pay or low status roles are necessarily 'low skill' individuals. Such roles in social care, for example, require individuals to be highly skilled in the profoundly important, higher order meta-skill of social intelligence. Skills also do not always need to be assessed formally to be evidenced or valuable.

Many Scottish employers have developed a more inclusive and progressive approach to skills recognition, including moving from exclusively

qualifications-based specifications to job specifications based on role and tasks, and from job specifications to person specifications based on attitudes, values and skills as capabilities. However, a lack of a consistent, coherent approach by all has led to significant divergence in application and interpretation across Scotland.

### Become an SCQF Inclusive Recruiter

When recruiting staff, how you specify the level of skill or competence that you need applicants to have is important. Qualifications in Scotland have changed a great deal over the past few years. Job applicants can now take a variety of routes to their ideal career. So, it is important for employers to understand the broad range of qualifications available. The aim of SCQF Inclusive Recruiter is to help employers understand that many different qualifications have the same worth and to encourage use of SCQF Levels in the recruitment process to offer clarity around skills and experience.

[www.scqf.org.uk](http://www.scqf.org.uk)

### Linguistic Skills for Internationalisation

In an increasingly global economy and society, demand for language knowledge and skills and socio-cultural awareness will only increase to better understand customers and markets. The Scottish Government's Export Growth Plan (2019) notes that language barriers are a significant barrier to the key objective of further internationalisation of the Scottish economy. Scottish businesses are often unable to maximise opportunities for increasing their exports to key

target markets from Brazil to China to France due to a lack of linguistic skills or socio-cultural awareness in their workforce.

Academic research concludes that our exports performance is below the benchmark set by Brazil, China, France, Germany and Japan, among others, due to a disproportionately low level of knowledge of foreign languages in our workforce at a cost of 3.5% of UK GDP or £48 billion (Foreman-Peck & Wang 2013). Improving

the language skills of Scotland's workforce could therefore boost the Scottish economy by up to £6.3 billion.

**Improving the language skills of Scotland's workforce could boost the Scottish economy by up to £6.3 billion**

### 5 Top Tips for Making Languages Your Business

# 1

*Conduct a Language Needs Analysis:* Identify linguistic strengths and weaknesses in your organisation and define current and future language needs. This helps create clear goals and measurable outcomes for attaining the necessary language capacity.

# 2

*Create and maintain an inventory of the linguistic and cultural competencies of your workforce.*

# 3

*Make languages a strategic focus throughout the recruitment process:* Set hiring targets for employees with additional language skills based on your organisational goals. Prominently communicate interest in employees with multilingual and cross-cultural competencies in all recruiting resources and corporate communications.

# 4

*Train talented candidates and employees who lack the required level of language proficiency.* Immersive training, private coaching, online programs and blended learning methods are viable options. Consider personalised, sector-specific training. Not all roles require full proficiency. Many require a working knowledge of a language within a specialised domain.

# 5

*Identify and cultivate a pipeline of multilingual talent:*

- Partner with colleges and universities with international studies, language and study abroad programmes.
- Offer internships and job opportunities for qualified students and recent graduates with the linguistic and global competencies your organisation requires.

---

In Germany, the world's biggest per capita exporter, 62% of 15 and 16 year olds learn two or more foreign languages and there is a focus on early years language education. At present, the Scottish Government's '*Language Learning in Scotland: A 1+2 Approach*' is being implemented in around 80% of primary schools and around 70% of secondary schools, with a target of full coverage by 2021. Mandarin, Spanish, French and German should be among the priority languages as global languages of business and trade.

Scotland needs to further leverage the socio-economic impact of our diverse and international student population, which presents us with a unique opportunity to support export growth into key global growth countries. For example, there are over 10,000 Chinese students in Scotland every year, and a substantial deficit of Mandarin speakers in Scottish business to raise our Chinese exports to the level of our competitors. By connecting this kind of young, multilingual talent with internship and employment opportunities in export-ambitious SMEs, Scotland could increase its attraction and retention of student and graduate talent and improve our national export performance. Such a scheme could also learn from the success of the aforementioned Santander Universities SME Internship Programme.

---

### **Recommendation #12**

The UK Government should urgently add Early years, Early Learning and Childcare workers to the Scotland Only Shortage Occupations List.

### **Recommendation #13**

Scotland needs to implement a comprehensive national approach to the recognition of prior learning developed in other countries to fully harness the skills and talent of its migrant workforce.

### **Recommendation #14**

The Scottish Funding Council and the Scottish Credit and Qualifications Framework Partnership should work together to develop a systematic, nationwide approach to the recognition of prior learning developed through informal or non-formal learning. Employers should also develop more flexible, holistic methods of recognising the skills of their employees and candidates as capabilities, rather than qualifications necessarily.

### **Recommendation #15**

The Scottish Government, local authorities and employers should escalate investment in Modern Languages education and linguistic skills in the workforce to close the linguistic skills and cultural awareness gap which is impeding Scottish export and business growth.

### **Recommendation #16**

Scotland needs to better engage its diverse international student population to achieve its export ambitions. The Scottish Government, universities and colleges should develop a dedicated internship and employment programme to connect multilingual international students with export-ambitious SMEs.

---

# Innovative, Inclusive Recruitment

Recruitment is the means by which employers renew the lifeblood of their business or organisation. As the Fourth Industrial Revolution gathers pace, identifying the right people with the right skills will be “mission critical” for all employers (LinkedIn 2019).

But many recruitment practices which are pervasive across the Scottish labour market are stuck in an economy and society of the past. Workplaces in various key sectors of the Scottish economy, from construction to childcare, remain highly gendered to the exclusion of many potential workers (Campbell & Thomson 2016; Sawers 2015). Many disabled people face negative perceptions and prejudicial attitudes when looking for work (Scope 2018). Many LGBT workers do not feel valued for or safe being who they are in the workplace (National LGBT Survey 2018). 82% of Scottish employers with a vacancy could not identify any specific action they had taken to attract or encourage a diversity of applicants (Scottish Employer Perspectives Survey 2019).

**As the Fourth Industrial Revolution gathers pace, identifying the right people with the right skills will be “mission critical” for employers**

Innovative, inclusive recruitment is therefore essential to build innovative, inclusive workforces which sustain high performing workplaces.

In addition to recruiting with a greater focus on skills as capabilities as outlined above, employers will also need to recruit with a much greater focus on diversity. The Fourth Industrial Revolution will demand it.

## The Power of Inclusive Workplaces

There is extensive evidence from across the world that businesses and organisations which are more diverse in terms of gender, ethnicity and nationality, sexuality and gender identity, disability and class background are more productive and more profitable. In *Delivering through Diversity* (2018), McKinsey outline their research which has analysed global business performance and found that companies with more diverse workforces and leadership teams achieve financially outperform their competitors.

### How Inclusion & Diversity Can Support Business Performance

- Win the war for talent
- Improve the quality of decision-making
- Increase innovation and customer insight
- Increase employee satisfaction
- Improve a company's global image and license to operate

**McKinsey & Company (2018) *Delivering through Diversity*, p.23-24**

## The Business Case for Inclusion & Diversity

- The relationship between diversity and business performance persists: the statistically significant correlation between a more diverse leadership team and financial outperformance demonstrated three years ago continues to hold true on an updated, enlarged, and global data set
- Leadership roles matter: companies in the top quartile of gender diversity on executive teams were 21% more likely to outperform on profitability and 27% more likely to have superior value creation. The highest performing companies on both profitability and diversity had more women in line roles than in staff roles on their executive teams
- It's not just gender: companies in the top quartile for ethnic/cultural diversity on executive teams were 33% more likely to have industry-leading profitability. That this relationship continues to be strong suggests that inclusion of highly diverse individuals – and the myriad ways in which diversity exists beyond gender (e.g., LGBTQ+, age/generation, international experience) – can be a key differentiator among companies. There is a penalty for opting out. The penalty for bottom-quartile performance on diversity persists. Overall, companies in the bottom quartile for both gender and ethnic/cultural diversity were 29% less likely to achieve above-average profitability than were all other companies in our data set. In short, not only were they not leading, they were lagging.
- Local context matters: On gender, while there is plenty more to do, some companies lead the way in both absolute average diversity and representation in top-quartile.

McKinsey & Company (2018) *Delivering through Diversity*, p.1-2

## Four Imperatives for Delivering Impact through Inclusion & Diversity

- Commit and cascade: CEOs and leaders must articulate a compelling vision, embedded with real accountability for delivery, and cascade down through middle management.
- Link to growth strategy: The I&D priorities must be explicitly defined based on what will drive the business growth strategy. Leading companies do this in a data-driven way.
- Craft an initiative portfolio: Initiatives in pursuit of the I&D goals should be targeted based on growth priorities, and investments made to both hard- and soft-wire the programs and culture of inclusion required to capture the intended benefits.
- Tailor for impact: Initiatives should be tailored to the relevant business area or geographic region context to maximize local buy-in and impact.

McKinsey & Company (2018) *Delivering through Diversity*, p.26-28

Workforces which convene a wide range of backgrounds and perspectives are proven to mutually develop and reinforce Meta-Skills – Stonewall calls it “the power of inclusive workplaces”. Diverse teams understand their markets, partners and customers better. They are more challenging, creative and flexible. Diverse businesses and organisations will therefore be more resilient to disruption in a fast-changing world shaped by the Fourth Industrial Revolution and social, political, economic and technological change. The diverse workplaces of today are the high performing workplaces of tomorrow. Thinking about diversity and working to support and increase it in the workplace is not a ‘nice to have’. It should be an indispensable element of business as usual. It is the right thing to do and it makes cold, hard, commercial sense. Inclusion and diversity mean social justice, competitive advantage and growth.

## Employees who cannot be themselves in the workplace cannot be their best

Employees who cannot be themselves in the workplace cannot be their best. According to the National LGBT Survey, 56% of LGBT people in the UK have avoided being open about their sexuality in the workplace, fearful of being verbally abused, harassed, discriminated against for opportunities and promotions or physically abused. 18% say that they have been discriminated against because of their sexuality or gender identity while trying to get a job in the last year. 18% have been the target of negative comments or conduct from work colleagues in the last year. 12% of trans people have been physically attacked by customers or colleagues in

### Assess your organisation’s achievements and progress on LGBT equality

Stonewall’s UK Workplace Equality Index is a useful benchmarking tool for employers to measure their progress, understand their employee’s experiences and build a plan of action for improvements on LGBT equality. It helps build an annual picture of the UK’s top 100 employers for LGBT inclusion.

[www.stonewall.org.uk](http://www.stonewall.org.uk)

the last year because of who they are.

Progress is often slow, especially in leadership and management where diversity remains relatively low. There are more women than ever before on company boards in Scotland, the private sector has still to catch up with the achievements of the public sector. The Gender Representation on Public Boards (Scotland) Act 2018 set a target for 50% of all non-executive members of boards of public authorities – including health boards, colleges, universities and other public agencies – to be women by 2022. This target was met successfully in 2019 well ahead of schedule. Meanwhile, less than 1 in 5 directors of Scotland’s top 50 companies are women. There is a lack of data in Scotland about representation of ethnic minorities, religious minorities or LGBT people at leadership

level. Our engagement suggests that there is a growing appreciation of these realities from businesses and organisations across Scotland. 51% of Scottish employers with a vacancy have monitored the diversity of applicants, 26% of those subject to Gender Pay Gap legislation have changed their recruitment practices to improve

diversity and 8% have used 'blind' or 'no name' recruitment (Scottish Employer Perspectives Survey 2019).

Increasing numbers of employers are choosing to move away from traditional, rigid recruitment models towards more innovative, inclusive practices. Progressive employers conduct step-by-step, root-and-branch reviews of how they recruit to ensure that it is screened for conscious or unconscious bias. For example, job adverts are written in gender-neutral, accessible language; websites, social media and digital processes are accessible for people with disabilities; interview panels and recruitment decision-makers are as diverse and as gender balanced as possible; and organisational rules and procedures to support equality and diversity in the workplace are robust and visible.

### **Increasing numbers of employers are choosing to move away from traditional, rigid recruitment models towards more innovative, inclusive practices**

Some employers have moved from exclusively qualifications-based specifications to job specifications based on role and key tasks. Others have moved further, replacing job specifications with person specifications based on attitudes, values and skills as capabilities. Some employers have adopted a values-based recruitment model, finding value in replacing formal competency-based interviews or assessment centres with informal 'get to know you' conversations. Employers should be prepared to identify and

invest in talent. Numerous large employers have signed up, including Accenture, Barclays and Virgin Trains. By doing so, employers can demonstrate a progressive approach to business and increase their access to a pool of skilled, experienced and talented workers.

### **Large employers are increasingly integrating technologies of the Fourth Industrial Revolution into their recruitment processes**

Large employers are increasingly integrating technologies of the Fourth Industrial Revolution into their recruitment processes. It is increasingly common for AI or automation to be deployed to screen candidates based on key words related to qualification or experience. But there are particular concerns about moving towards increasingly automated or semi-automated recruitment. There should be caution around these new technologies given the significant ethical and practical concerns which have been raised about their effectiveness and reliability, especially in relation to entrenched bias.

New technology could be used against individuals and groups who have traditionally been excluded from or discriminated in the labour market. Employers often consciously narrow the talent pool in recruitment through pre-screening which requires prospective candidates to disclose any previous convictions in their application. Most job application forms require disclosure through a tick box. Anecdotal evidence suggests that some employers use this information to informally discriminate against candidates, even though most are irrelevant to the job in question or were

obtained as a result of a minor offence.

Half of UK employers say that they would not consider employing offenders or ex-offenders. Nearly 2 in 5 men and nearly 1 in 10 women in Scotland have a previous conviction. This means that up to 1.2 million Scots may be unnecessarily denied employment opportunities or career progression based on their actions in the past, not their skills in the present, or the talent for the future.

### **Ban the Box**

The Ban the Box campaign works with UK employers to create a fair opportunity for people with convictions to compete for jobs. It calls on employers to remove the tick box from application forms and ask about criminal convictions later in the recruitment process to ensure that irrelevant previous convictions are discounted whenever possible and appropriate. Over 135 employers have signed up to Ban the Box, covering about 910,000 roles, including Accenture, Barclays, Boots, the UK Civil Service, Fujitsu, Lloyds Banking Group, Sir Robert McAlpine and Virgin Trains.

### **Recommendation #17**

Employers should adopt innovative, inclusive recruitment models which support and increase diversity in the workforce, because diverse teams are more successful. They should also conduct step-by-step, root-and-branch reviews of their recruitment practices to screen for conscious or unconscious bias.

# Leadership & Management

Leadership is key to creating and nurturing high performing workplaces. Great leaders utilise their leadership and management skills to maximise the skills of, and get the best out of, their people.

Leaders and managers have direct power and indirect influence over the policies, norms and culture of their businesses and organisations. Policies, norms and culture shape workforce attitudes, behaviours and morale, which in turn affect levels of business productivity and growth. Individuals are more likely to utilise their full set of skills, and more likely to perform at a higher level, if they feel valued, motivated and supported as an individual and as a member of a team. High performing workplaces are positive, purposeful and people centred with happy, healthy workforces.

The literature on productivity increasingly recognises the fundamental role of enhancing the management of people and teams, rather than large-scale, disruptive technology or equipment interventions, in raising performance. There is clear evidence that poor leadership and management is a significant contributory factor to the underperformance of businesses and organisations in the long tail of low productivity across the world (Bloom, Sadun & Van Reenan 2017) and in the UK (Haldane 2017, Institute for Employment Studies 2016).

It is clear that Scotland faces a serious leadership skills gap at senior level and at middle manager level. Emigration of emerging talent continues to prematurely deprive many Scottish businesses and organisations of future leaders, especially in

finance, technology and professional services. Scotland faces an urgent challenge to retain and attract talent to expand its indigenous business leadership base to support its businesses to scale-up and compete on the global stage. A higher number of global, continental or UK corporate headquarters located in Scotland would significantly expand the opportunities to develop and retain future leaders here.

A lack of opportunities for progression and a lack of access to investment in Edinburgh or Glasgow draws many of Scotland's future leaders and leading entrepreneurial talent primarily towards London and Manchester, but also increasingly beyond the UK to East Asia, North America and Scandinavia, where they can gain more senior experience and develop world-class leadership skills. Scotland needs to articulate a clear and compelling offer – and provide appropriate support – to attract leaders to return to live, work and lead businesses or organisations here.

**Scotland faces a serious leadership skills gap at senior level and at middle manager level. Emigration of emerging talent continues to prematurely deprive many Scottish businesses and organisations of future leaders**

## Closing Scotland's Leadership Gap

Many employers have neglected or found themselves unable to invest in their future leaders.

Businesses and organisations in Scotland under-invest in their people relative to our competitors. Countries across Central and Northern Europe like Denmark, Sweden and Switzerland pursue a high skill, high investment model (IPPR Scotland 2018).

Training and development budgets have declined significantly across the Scottish economy over the past decade during the slow, weak and uneven recovery from the Great Recession. A lack of capacity and resources is a critical challenge for SMEs. Scottish employers and employees are perhaps under-utilising the expertise and opportunities of Scotland's world-leading universities on their doorstep. Domestic take-up of MBAs from Scotland's Business Schools is relatively low, for example. Where appropriate, employers should encourage and facilitate their staff to consider MBAs in Scottish higher education as a valid, highly valuable route for Continuous Professional Development, with universities playing a role in stimulating increased domestic up-take. However, we recognise that the focus of the learning ecosystem should be on more flexible, agile provision of flexible, modular, personalised learning for leaders.

Scotland's under-investment in its people has exacerbated our middle management skills gap, undermining the long-term foundations of Scotland's future skills and future prosperity. There is a need for a focus on developing high

performing leaders with the skills to create and nurture high performing individuals, workplaces and teams. Employers need to create a learning environment in their workplaces, providing opportunities for and a culture of coaching, mentoring and collective continuous professional development. It will be increasingly important for employers to retain the expertise and experience of older workers, utilising their skills to mentor, coach and upskill others, especially young people entering the workforce at the beginning of their careers.

Many leaders and managers are not given the training, guidance or support that they need to build their capacity to productively manage people and teams. Most individuals ascend into middle management with little or no dedicated training to support them in their transition to a new kind of role with new responsibilities. Some are so-called 'accidental managers'. This support is especially critical with the rise of the "expert as leader" across our economy, as technological complexity and subsequent reliance on technical expertise in leadership roles increases (Gifford & Finney 2011).

Our engagement with SCDI members has highlighted that smaller organisations in the third sector face specific leadership skills gaps. Many local charities or trusts are increasingly affected by a critical lack of leadership capacity and governance skills which, exacerbated by a highly challenging funding climate, has led to an elevated risk of business failure across the sector. Some SMEs face similar challenges in the context of the private sector. Chief Executives, Chairs, Trustees and other leaders do not always have the fundamental knowledge and skills to effectively run an organisation, such as engaging with and managing Boards, facilitating meetings,

understanding regulatory and legal requirements, providing appropriate HR, creating Risk Registers and so on.

There is a need to increase diversity of leadership groups and for tailored, bitesize support which is specific to their organisation, reflective of the ethos of their sector and not generic or high level. This could include 'consultant CEOs', 'governance project managers' or 'emergency advisers' to provide practical and direct advice, training or support to diagnose issues, review organisational processes and structures, manage complex projects and support change management. This resource could be provided through expertise from Scottish universities' Business Schools or through trusted industry sources like the Scottish Council for Voluntary Organisations.

### Transforming Business Models to Empower People



The Fourth Industrial Revolution is disrupting traditional business models in all sectors of the economy. The increasing integration of automation, AI and digitisation into workplaces is compelling but also facilitating increasing numbers of businesses and organisations to change the way they work.

There is extensive and growing evidence from academic research and real-world organisational case studies that business models which are transformed to empower people improve their performance. The rigid, hierarchical and command-and-control approach to leadership and management closely associated with the Second and Third Industrial Revolutions of the 20th century is now widely recognised as unfit

for the society and technologies of the 21st century (Laloux 2014).

The Fourth Industrial Revolution will require a more flexible, humane approach which empowers people work alongside humans and machines, getting the best out of their skills and out of technology.

The high performing workplaces of the future will reflect Meta-Skills needs and contemporary values of adaptability, collaboration, empowerment and openness. The model of a 'flat' and agile workplace with a minimised hierarchy and maximised flexibility will spread from its pioneers in the tech sector to become increasingly widespread. The rise of non-linear agile project management, flexible hours, remote working and digital global teams across all sectors of the economy are part of this digital-fuelled trend towards a more modern workplace.

Flat workplaces are characterised by their openness and flexibility; high levels of communication and collaborative working; a culture of experimentation and a lack of fear of failure; and a lack of hierarchy and decentralised decision-making which empowers employees. Such a model could prove rewarding for many employees and employers.

### Employee Ownership



Increasing numbers of businesses and organisations are going further and experimenting with models of employee ownership. Employees rather than external stakeholders hold a significant or majority stake in employee-owned businesses, often collectively

through an Employee Ownership Trust. It is often a solution to issues of succession in family-owned businesses.

Employee ownership represents a paradigm shift in power and purpose in an organisation. It gives everyone who works for it a significant and meaningful stake in the success and running of the business. The 2012 Nuttall Review of Employee Ownership for the UK Government detailed the beneficial effects of employee ownership, including improved business performance, increased economic resilience and enhanced employee wellbeing. Businesses become self-sustaining, with a greater focus on building long-term, sustainable success rather than chasing short-term dividends. The data and the academic literature are clear that those who work for employee-owned firms tend to be markedly more committed to their jobs, achieving higher levels of productivity and lower levels of absenteeism. In short, empowering people is good for business.

Employee ownership is not a new business model – it has proven highly successful for engineering firm Arup since 1964 and retailer John Lewis & Partners since 1929 when John Spedan Lewis began his “experiment in industrial democracy”. However, growth has accelerated in recent years. Employee owned firms now deliver 4% of UK GDP every year and 1 % of UK jobs, employing over a quarter of a million people.

Five of the UK's top 100 private companies are owned by their workers. Scotland punches above its weight with around 14% of the UK's employee-owned businesses. There are now over 100 employee- or worker-owned businesses in Scotland – from Auchrannie Resort in Arran to audio-visual tech supplier Mediascape in Glasgow

– with 7,000 employee-owners generating a combined total turnover of nearly £1 billion.

The Scottish Government's Economic Action Plan targets growth to 500 such firms by 2030. The Scottish Government and Scottish Enterprise are now supporting employee ownership through the new industry leadership group Scotland for Employee Ownership and its Employees CAN DO Ownership campaign. The First Minister has also announced that the Scottish National Investment Bank will play a role in supporting employee ownership.

### Google's Project Aristotle - Five Dynamics of a Success Team

Recognising the importance of collaborative teams to their future success, Google set out to explore what makes a successful team. Project Aristotle was launched in 2013 and took its name from the ancient Greek philosopher's maxim that "the whole is greater than the sum of its parts."

After two years of analysis of more than 180 teams and interviews with hundreds of people, researchers concluded that the most successful teams have five dynamics:

1. **Psychological safety** - team members feel safe take risks and be vulnerable in front of each other
2. **Dependability** - team members can rely on each other to get things done
3. **Structure and clarity** - team members have clear roles, plans and goals
4. **Meaning** - team members have a sense of purpose in the team's work or its output
5. **Impact** - team members believe that their work makes a difference and will bring about change

### Cornerstone's Self-Organising Team

Social care provider Cornerstone is radically restructuring its business model to transform its services. Local, self-organising and horizontal teams are being created across Scotland to deliver person-centred care which is co-designed and co-produced by staff and the person being cared for under the innovative Buurtzorg Model. Employers are empowered to make decisions based on their values, knowledge, skills and experience, allowing them to spend more time with the people they support and less time on paperwork and processes.

Traditional recruitment practices like competency-based interviews have been exchanged for a values-based framework of short applications followed by informal chats. As an employer, Cornerstone have determined that this supports a more accurate and holistic judgement of whether candidates have the right Meta-Skills in empathy, communication and creativity. Early evidence suggests that this transformation is delivering higher rates of user satisfaction and staff retention.

## Recommendation #18

Scotland needs to take action to close its leadership skills gap:

- All employers should invest in their leaders and managers to develop their leadership skills and capacity to empower, protect and support others.
- All employers should have a formal, organisation-wide commitment to coaching and mentoring.
- Skills Development Scotland, Scottish Enterprise and partners should develop flexible incentives and tailored, bite-size advice, training or support for upskilling leaders and managers, with a focus on SMEs and smaller third sector organisations.

## Recommendation #19

Employers should consider less hierarchical, more agile workplace models which empower their people to make the most of their skills.

## Recommendation #20

Scottish Enterprise and Scotland CAN DO should continue to raise awareness of, promote and provide support for employee ownership across Scotland.

# Fair Work

On the headline measures of unemployment and employment, the Scottish labour market is performing strongly at record levels. However, this does not reflect the full picture. Despite the quantity of work in Scotland, there are increasingly strong concerns about the quality of work. The Scottish Government has recognised this in the National Performance Framework, the Fair Work Action Plan and its Health and Work Strategy Review.

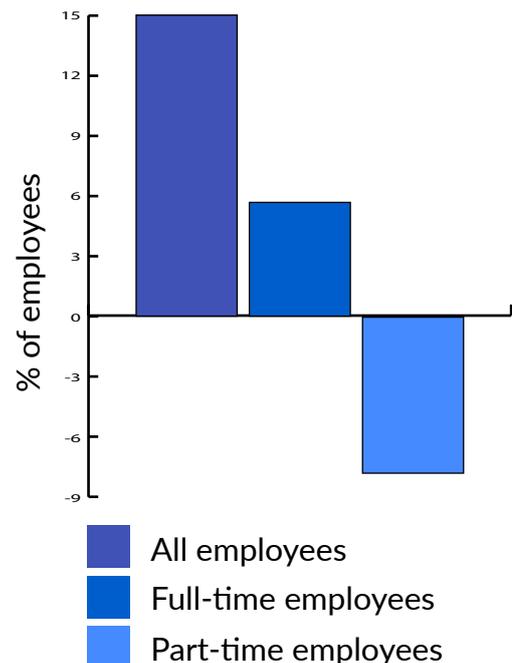
Precarious, insecure and low pay employment remains pervasive in the UK's labour market. Atypical work – self-employment, freelancing, zero-hours contracts, short-hours contracts, part-time employment, temporary and agency work – is facilitated by new technologies and platforms and is on the rise.

Over 1.1 million people are employed in the gig economy across the UK through digital platforms like Uber (transport), Deliveroo (food delivery), UpWork (services), TaskRabbit (odd jobs) and Vimeo (creatives). 1 in 10 people across UK between 16 and 34 do platform work at least once a week. As many people now work in the gig economy as work for the NHS. There are now a record 4.93 million self-employed people in the UK. Large numbers of people seeking full-time employment are stuck in part-time jobs. There are over 321,000 self-employed people in Scotland, representing 12.2% of the workforce. 72,000 Scots are on volatile zero-hours contracts and 118,000 are in unstable temporary work. Estimates suggests that nearly 4% of those in work in Scotland work in the gig economy (Johnes 2019).

Meanwhile, poverty and inequality are on the rise in Scotland, including in-work poverty. Due to the deterioration in the quality of work for many, education and employment are not always a route out of deprivation. 58% of those who live in poverty, including 70% of children in poverty, live in a household where someone is in employment. Almost 1 in 5 people in Scotland live in poverty, including nearly 1 in 4 children. After years of progress, especially among pensioners, levels of deprivation have been increasing since 2009 (Joseph Rowntree Foundation 2019). There also needs to continue to be action to close the gender pay gap and achieve full equality for women in the workplace and in the labour market.

## Closing Scotland's Gender Pay Gap

Gender pay gap, Scotland, 2018:



Men and women in the same employment performing equal work must receive equal pay under the Equal Pay Act 1970 and the Equality Act 2010. Unequal pay which breaks the law is a relatively small component of the gender pay gap. The divergence is largely the result of the underrepresentation of women in senior roles or high-paid STEM sectors and the overrepresentation of women in low-paid or part-time work.

### Fair Work in the Future of Work



There are legitimate concerns across society about what the Future of Work in the Fourth Industrial Revolution might mean for Fair Work. Fair Work is defined as work that offers Effective Voice, Opportunity, Security, Fulfilment and Respect. It balances the rights and responsibilities of employers and workers and generates benefits for employees, employers, the economy and society.

The Fair Work Convention argues that Fair Work ensures individuals' are properly recognised and rewarded – and that they perform better when this is the case. Pay is an important factor, but not the only one. Efficiency Wage Theory certainly suggests that higher wages can lead to higher labour productivity. Such a correlation could be explained by increased employee loyalty, motivation or health as a result of higher pay. Higher pay, along with opportunities for up-skilling and progression, is also likely to attract higher skilled individuals.

There needs to be action to raise the wages of the lowest paid workers to address in-work poverty and increase productivity. Research

commissioned by HM Treasury suggests that the impact of higher minimum wages on employment is “relatively muted”, while the benefits for low-paid workers are sizeable (Dube 2019). When the National Minimum Wage was introduced in the UK in 1999, 830,000 people were covered. Now over 2 million people are paid today’s National Minimum Wage or National Living Wage. An estimated 439,000 people were paid below the legal minimum in 2018.

The commitment by the Scottish Government and its enterprise and skills agencies to Fair Work First is welcome. Fair Work criteria and conditionality will be attached to large Scottish Enterprise job-related grants and, subsequently, “every type of grant, funding stream, and business support budget” open to the Scottish Government by 2021. There is an opportunity for this to be taken further to embrace all public sector contracts, procurement and licensing to stimulate further progress on Fair Work across the economy and reward progressive businesses. However, there should also be recognition of the need for a sensible transition which allows public agencies and bodies with an often-limited number of potential suppliers and contractors, especially those based or operating in rural communities, to adapt to this new set of duties.

**There are legitimate concerns across society about what the Future of Work in the Fourth Industrial Revolution might mean for Fair Work**

## Fair Work Convention

[www.fairworkconvention.scot](http://www.fairworkconvention.scot)

### 1. Effective Voice

People have a say at work.  
Dialogue with employees  
makes a difference.

### 2. Respect

People are respected and  
treated respectfully, whatever  
their role and status. Work  
enhances individual health,  
safety and wellbeing to protect  
workers from work-related  
illness, injury, bullying or  
harrassment.

## FAIR WORK

### 5. Opportunities

Everyone has access to work,  
employment and progression.  
Work is inclusive and diverse.

### 4. Security

People have security of income  
and employment. Work  
supports greater individual and  
family stability and promotes  
more effective financial  
planning.

### 3. Fulfillment

People have positive and  
supportive workplace  
relationships promoting  
a sense of belonging and  
happiness. Work is a fulfilling  
part of life.

## Tackling Precarity & Insecurity



Atypical work means greater flexibility for some workers, but also heightened insecurity for many others. Technology and a flexible labour market have already transformed work for many people, giving some workers increased personal control, improved work-life balance and enhanced access to customers or employers. Some voluntary zero hours contracts, for example, will remain necessary and desirable for some workers who require or value greater flexibility, including consultants, locums, freelancers and independent contractors. Technology has made it easier for many workers to find work and manage their work-life balance.

However, technology and a flexible labour market have also deprived many other workers, including those on exploitative and inappropriate zero hours contracts, of their employee status and rights, which has reduced their pay and eroded their job security and working conditions. Many employees in the gig economy are treated as self-employed workers, independent contractors or 'franchisees'. This 'bogus self-employment' means that they are not entitled to important benefits like sick pay or holiday pay.

Research by the STUC lays bare the stark reality for many workers in Scotland. Collectivising in *Precarious Work: Time, Control, Trust* (2019) assembles first-hand evidence and testimonies from gig economy workers like parcel distributors, couriers, freelance creatives with extensive experience on the frontline of this growing sector. They reported that their lack of stable hours, lack of reliable income and erratic scheduling leads to high levels of stress and

anxiety. Workers report being often compelled to work long and unsociable hours – despite promises of flexibility and choice – leading to a severe lack of leisure time. Many have taken on roles to top-up low incomes from other part-time or even full-time work. The STUC concluded that precarious work is leading to precarious lives and that workers have lost time, control and trust at work.

**The Fourth Industrial Revolution should provide opportunities for employers to support their employees, increase their productivity and improve their working lives.**

The Taylor Review of modern employment practices made a number of proposals for labour market reform in 2017. The UK Government announced that it would give zero-hours agency workers the right to request a fixed-hours contract, review whether those on zero-hours contracts should receive a higher minimum wage and consider repealing laws which allow agencies to employ workers on cheaper rates. However, this was widely seen as an inadequate response to the scale of the challenge. Inappropriate and exploitative zero hours contracts are already illegal in Denmark, France, Spain and Poland.

Technology is also increasingly used to subject workers to intensive and intrusive monitoring. Some sectors of the labour market are dominated by low-autonomy jobs, such as courier roles in the gig economy. The level of micro-management and monitoring to which they are subjected can harm their health and undermine their

sense of value and agency. Anxiety about such interventions which are overly intrusive or involve a loss of control are among workers' most frequent concerns about the potential impact of the Fourth Industrial Revolution on their lives.

Nevertheless, the Fourth Industrial Revolution should provide opportunities for employers to support their employees, increase their productivity and improve their working lives. Automation can be deployed to remove "dull, dirty, dangerous and dear" tasks, especially those which are manual or repetitive (MacAfee & Brynjolfsson 2017). Workers should be liberated to upskill to focus on more interesting, rewarding tasks or fulfil higher value, higher productivity roles. Digitisation of processes can be exploited to expand opportunities for workers to choose flexible working arrangements and improve their work-life balance. 47% of Scottish employers now offer flexible working (Scottish Employer Perspectives Survey 2019).

We believe that all work in Scotland should be Fair Work. Employers should utilise and deploy Fourth Industrial Revolution technologies to support their workers, increase their productivity and improve their working lives.

## Mentally Healthy Workplaces



Precarious, insecure and low pay employment in the Scottish labour market appears to be closely linked to growing reports of work-related problems with workers' physical and mental health and wellbeing. Stress, burnout, over-work and isolation all appear to be increasingly common features of professional life for many workers.

## It is estimated that poor mental health costs Scottish employers up to £9 billion every year

Employment is generally good for mental health – people out of work are more likely to report poorer mental health. But most people with mental health problems are in employment. Some workplaces can precipitate or aggravate physical or mental health problems for employees (Mental Health Foundation 2019), resulting in higher levels of sickness absence, lower levels of staff retention and lower levels of productivity. Happier, healthier employees will, of course, perform better. It is estimated that poor mental health costs Scottish employers up to £9 billion every year (Scottish Government 2019e).

In addition to ensuring that the workplace is physically safe, it is clear that employers need to take action to develop and nurture mentally healthy workplaces which safeguard their employees and support their wellbeing. 1 in 3 people in Scotland are affected by a mental health problem each year, with 1 in 6 experiencing mental ill-health in the workplace. Nearly half do not tell their employers of any mental health issues for fear of losing their job. The UK Workplace Stress Survey has charted its rise in recent years – 59% of adults report work as a cause of stress and 21% report moderate to high levels of work-related stress several times every week. Around 1.5 million working days are lost every year in Scotland due to work-related stress, 50% of all working days lost to ill-health. Analysis suggests that full-time employees in the UK work longer hours than anywhere else in the EU (Scottish Government 2019e).

This is a significant problem in the public sector after nearly a decade of austerity. The NHS, local authorities and others have continued to face stretched resources as a result of budget reductions and increases in demand, putting staff under ever greater psychological and emotional pressure. The 2017/2018 Local Government Benchmarking Framework report found that mental health was responsible for nearly one-third of absenteeism. 3.5m working hours in NHS Scotland were lost to sickness absence caused by stress or anxiety or for mental health-related reasons, representing 1 in 4 of all lost sickness hours and an increase of over 50% since 2014. No NHS Board in Scotland currently meets the Scottish Government's requirement of a sickness absence rate of less than 4%, with stress-related absences rising. The Mental Health Foundation has called on the public sector to introduce a minimum of two mental health days for every public sector worker.

## **1 in 3 people in Scotland are affected by a mental health problem each year, with 1 in 6 experiencing mental ill-health in the workplace**

According to the UK-wide Labour Force Survey, 602,000 workers suffered from work-related stress, depression or anxiety in 2018/19 at a cost of 12.8 million lost working days. Its most common causes were workload (44%), lack of support (14%), violence, threats or bullying (13%) and changes at work (8%). 45% of workers say that their workplace has no support or policies in place to help reduce employees' stress levels or improve their mental wellbeing.

Under the Equality Act 2010, employers are required to make reasonable adjustments for employees who have diagnosed physical or mental health conditions. All employers have a legal duty to protect employees from work related stress by completing a risk assessment and acting to tackle or remove any identified risks. Progressive, pro-active employers could take further action to maximise the skills of their people.

There should be parity of esteem and equality of support between physical health and mental health in education and in employment across Scotland. This should include clear, fair and accessible policies on mental health from employers which are informed by and respond to the needs and priorities identified by ongoing assessments of organisational health and wellbeing.

Employers should also invest in mental health upskilling to ensure that mental health literacy, awareness and support are core competencies of all leaders and managers. Awareness training, support signposting and confidential counselling should be available to staff. As with physical first aiders, trained mental health first aiders should be present throughout every workplace.

Employers could also explore offering 'mental health days' or 'wellbeing days' for employees to take off work when experiencing high levels of stress and anxiety or suffering from a mental health issue such as depression. Scotland's public sector should lead the way by introducing two mental health days annually for every worker.

Employers can harness the opportunities of technology and flexible working to empower employees to achieve a better work-life balance.

All UK employees have the legal right to request flexible working hours and arrangements. However, technology has facilitated the rise of an 'always on' culture which seriously erodes morale and performance. People in Scotland completed 115 million hours of unpaid overtime in 2017, an average of 7.7 hours per week per worker. The resultant drag on employee morale, wellbeing and productivity is bad for our economy and our society. Analysis by the Institute for Employment Studies illustrates that long working hours are closely correlated in the UK with lower productivity and negative effects on motivation, absence and turnover.

## **Employers should invest in mental health upskilling to ensure that mental health literacy, awareness and support are core competencies of all leaders and managers**

A shorter working week or reduced working hours are increasingly being discussed as a potential means of improving employee health and wellbeing, achieving a better work-life balance and improving business productivity (Autonomy 2019). SCDI's World-Leading AI and Data Strategy for an Inclusive Scotland (2019) report recommended that the Scottish Government "should keep under review the potential for a four-day working week". Lord Skidelsky's 2019 report for the Progressive Economy Forum gave recommendations on how to achieve shorter working hours but deemed the proposal for a four-day working week to be unachievable. However, some employers have moved to, or are experimenting with, a four-day

working week with often highly positive results for wellbeing and productivity.

Since 2017, employment law in France has required employers with over 50 employees to guarantee their 'right to disconnect'. Employers are required to agree with employees on their rights to switch off from work activities, emails and calls to reduce its intrusion into their private lives. If there is no mutual agreement, employers are required to publish a charter making explicit their demands on, and the rights of, employees out-of-hours.

The UK Government should legislate to give workers in the UK a 'right to disconnect' out of their agreed working hours. Prior to any future legislation, employers in Scotland should establish open and meaningful dialogue with their employees to agree parameters for flexible and out-of-hours working – and to define working hours with flexibility for individual employees – which are as clear as reasonably possible. Scotland's public sector should lead the way by granting its workers a right to disconnect.

### **Microsoft Japan's 'Work-Life Choice Challenge' Summer 2019**

Full-time employees were given five consecutive Fridays off in August with pay. Meetings during the rest of the week were also restricted to a maximum of 30 minutes, while online chats were encouraged. The result was productivity increased, while costs decreased.

- Sales per employee - 40% increase
- Electricity consumption - 23% decrease
- Pages printed - 59% decrease

### **Recommendation #21**

The Scottish Government should set a timeline for a transition to Fair Work First criteria and conditionality in all public sector contracts, procurement and licensing.

### **Recommendation #22**

The UK Government should equalise employment rights and protections for all workers to ensure that self-employed and gig economy workers have equal access to the minimum wage, sick pay and holiday pay.

### **Recommendation #23**

The UK Government should ban exploitative and inappropriate zero hours contracts. Some voluntary zero hours contracts will, however, remain necessary and desirable for some workers who genuinely require or value greater flexibility.

### **Recommendation #24**

There should be parity of esteem and equality of support between physical health and mental health in education and employment:

- Employers should develop, implement and maintain clear, fair and accessible policies on mental health.
- Employers should invest in mental health upskilling for their workforce and define mental health literacy as a core competency of all leaders and managers.
- Employers should explore offering 'mental health days' or 'wellbeing days' for employees suffering from stress, anxiety or a mental health issue. Scotland's public sector should lead the way by introducing two mental health days annually for every worker.

### **Recommendation #25**

The UK Government should legislate to give workers a 'right to disconnect' out of their agreed working hours. Employers should define parameters for flexible and out-of-hours working after dialogue with their employees. Scotland's public sector should lead the way by granting its workers a right to disconnect.

# CHAPTER 3

## In-Work Development

The Fourth Industrial Revolution will require a paradigm shift in how we think about and invest in learning, with a much greater commitment to lifelong learning and work-based learning for everyone at all stages in their life and career to accelerate reskilling and upskilling across the workforce. We will have to build on and move beyond our narrow current focus on pre-employment and early-career stage education to a more holistic commitment to lifelong learning for everyone at all stages of their life, especially those in-work and at mid or late-career stage.



# Reskilling & Upskilling

Many Scottish workers will need to be re-skilled or upskilled for new jobs, new tasks and new technologies in new sectors and new markets. Many mid- or late-career workers will be especially vulnerable. McKinsey (2017) project that up to 375 million workers worldwide, or 14% of the global workforce, will need to completely change their skill sets by 2030. Over two-thirds of European business leaders believe that they will need to retrain or replace more than a quarter of their workforce by 2022. The World Economic Forum forecasts that one third of required skills in 2030 will be wholly new. We must ensure that our people and our economy have the skills they need to ensure that they are ready for the future.

Like every industrial revolution before it, the Fourth Industrial Revolution will inevitably result in the displacement of significant numbers of jobs. As in previous centuries, new technologies will precipitate the decline of some sectors and change skills demand in every other sector. Repetitive, administrative, clerical, production, menial and manual tasks will be automated to increase productivity. Few occupations are fully automatable, but around a third of tasks in 60% of all current occupations are likely to be automatable in technical terms according to one estimate (McKinsey 2017).

Automation will also liberate workers from “dull, dirty, dangerous and dear” tasks, enabling them to upskill to focus on more interesting tasks or fulfil higher value roles (MacAfee & Brynjolfsson 2017). Jobs which are largely or wholly composed of such tasks are at a much higher risk of being

displaced, especially in retail, transportation or manufacturing. Many low pay or low-level roles which currently exist in the Scottish labour market may therefore disappear over time as a result. The rapid proliferation of self-service machines in shops and supermarkets is one of the most visible everyday examples of this emerging trend.

## Reskilling vs. Upskilling

- **Reskilling** = Learning new skills typically applied to a new job often in the context of a new career. Reskilling is a means of facilitating a transition to new employment opportunities, perhaps in response to the threat of technological unemployment, sector decline, redundancy or skills gaps.
- **Upskilling** = Learning new skills typically applied to an individual's career progression, enhancing their capabilities and enabling them to apply them at a higher level of a likely similar profile often but not necessarily within the same organisation. Upskilling is a means of progressing individuals up the workplace value chain and increasing their productivity.

Estimates vary as to the scale of the disruption. However, SCDI's *Automatic... For the People?* (2018) report, informed by analysis by the Fraser of Allander Institute, concluded that the most alarmist, pessimistic predictions are likely to prove incorrect. The robots are not coming to take all of our jobs. For most, we anticipate that automation will automate away tasks rather than jobs. As in all previous industrial revolutions,

new jobs will also be created, many of which we cannot even envision today (Frey 2019; World Economic Forum 2018; McKinsey 2017).

The sectoral share of total employment in developed economies has changed radically over the centuries since the Second Industrial Revolution, as the size of the job footprint in agriculture, manufacturing and mining has declined sharply. Meanwhile, the number of jobs in trade, professional services, healthcare, education, government and financial services has expanded massively, fuelled by technological innovation (McKinsey 2017).

We believe that the Fourth Industrial Revolution creates enormous opportunities for the Scottish economy and the Scottish labour market. Forward-thinking businesses, organisations and individuals will harness automation, AI and digitisation to get the best out of their people, increasing their productivity, supporting innovation and fuelling inclusive growth. New technologies will precipitate the emergence of new sectors of the economy and support the expansion of others. New technologies could be deployed to improve existing jobs and improve the workplace, expanding access to good jobs and Fair Work, as outlined in the previous chapter. Over the long-term, it can make us more productive and more prosperous.

Nevertheless, we also recognise that the Fourth Industrial Revolution will pose substantial challenges for the Scottish economy and labour market. Scotland will need to respond to prevent a 'hollowing out' of its labour market and a rise in technological unemployment, especially at the lower end of the labour market – lower skill, lower paid jobs are more likely to be displaced. The nature of sectoral growth and decline could

### Jobs of the Future

What new, previously unheard-of jobs might emerge over the next 10 or 20 years as a result of technological progress? Global digital technology providers Cognizant made some predictions...

Data Detective, Ethical Sourcing Manager, Chief Trust Officer, Man-Machine Teaming Manager, Personal Data Broker, Augmented Reality Journey Builder, Machine Risk Officer, Algorithm Bias Auditor, Chief Purpose Planner, Smart Home Design Manager, Head of Machine Personality Design.

**Cognizant (2018) 21 Jobs of the Future / Cognizant (2017) 21 More Jobs of the Future**

exacerbate gender inequality – those STEM sectors of the economy which are fastest growing have largely male-dominated workforces, while many of those which are experiencing a shrinking job footprint, such as retail, have largely female-dominated workforces.

There is a danger that these changes could lead to higher levels of inequality and lower levels of inclusive growth without intervention. Those who could lose their jobs will have to reskill and upskill to find new jobs. There will be a need, as acknowledged by the Enterprise and Skills Strategic Board, to integrate and expand existing reskilling and upskilling interventions and align this with the work of the National Retraining Partnership with employers, unions, colleges and universities, and training bodies.

There must be a just transition which ensures that no community in Scotland, whether deprived or rural, is left behind. Employers will need

support and guidance to upskill their workers. Individuals who lose their jobs in a declining sector will need to be supported to reskill to find work in a growth sector. Higher skill individuals and high skill business models will be more resilient to displacement and disruption given the nature of technological change and the future of work.

The creation of Fair Start Scotland as a new devolved employment service to provide support to those struggling to find work provides an opportunity to enhance their employability in the Fourth Industrial Revolution by re-orientating and re-focusing services towards long-term upskilling rather than short-term or immediate transitions into work.

There is a diversity of providers across Scotland delivering short, digital skills focused course – not least colleges and universities – but CodeClan is widely recognised as one model of best practice. It provides a highly respected model for re-skilling and upskilling workers in Scotland. The SQA accredited skills academy is an industry-led partnership established in 2015. It delivers intensive, industry-relevant, short courses in digital and coding skills, such as Software Development, Data Analysis and Programming. It also offers bespoke, flexible courses tailored to the needs of employers to reskill or upskill their workforce and works with a number of large employer partners, including PwC.

**Repetitive, administrative, clerical, production, menial and manual tasks will be automated to increase productivity**

It has a high success rate, with 93% of CodeClan graduates finding work after six months. The UK Government has announced £20 million for a similar initiative based on this model in England. We applaud the early success of CodeClan in its mission to re-skill and up-skill hundreds of Scottish workers and bridge the digital skills gap. The value and impact of this industry-led skills model is clear and significant. Given the scale of the digital skills gap in Scotland and anticipated future demand, CodeClan will need to continue to explore opportunities to expand its provision and to scale-up its activities with increased industry and government support.

There could be significant value in businesses and organisations in other key sectors of the Scottish economy to consider establishing industry-led partnerships to replicate the CodeClan model, where appropriate. By developing and delivering intensive, industry-relevant, short courses which reskill and upskill workers with high level technical skills, these sectors could take action to reduce the labour shortages and skills gaps which threaten their future growth and sustainability.

## Investing in People



To meet the scale of this reskilling and upskilling challenge, Scotland needs to raise the level of our investment in our people. Investing in people is essential for filling existing or emerging skills gaps; for future workforce planning by developing young people into a talent pipeline; and for increasing business resilience to disruption and change.

70% of Scottish employers provided training for their staff in 2018 (Scottish Employer

Perspectives Survey 2019). Although employers in Scotland are more likely to invest in training for their employees than those in England, Wales or Northern Ireland, they still tend to under-invest in their people compared to their international counterparts. This divergence is particularly stark in comparison to high-investment, high-skill, high-pay and high-productivity economies like Denmark, Germany, Sweden and Switzerland. Higher skill, higher productivity business models will be more resilient in the face of the Fourth Industrial Revolution.

## **To meet the scale of this reskilling and upskilling challenge, Scotland needs to raise the level of our investment in our people**

Since the Great Recession of 2008, there has been a decline in workforce training, development and upskilling which has undermined the long-term foundations of business growth in Scotland. As the forces of automation, digitisation and globalisation gather pace, investing in the reskilling and upskilling of our people will only become more urgent.

Current education provision in Scotland is focused on pre-career and pre-employment learning for younger people, with significant gaps in upskilling opportunities for those in mid- or late career. Too many employers in Scotland adopt a low-skill business model or under-utilise the skills of their workforce – 54% do not have a training plan, 66% do not have a training budget, 67% claim their staff are fully proficient in their roles (Employer Skills Survey 2017).

## **Current education provision in Scotland is focused on pre-career and pre-employment learning for younger people, with significant gaps in upskilling opportunities for those in mid or late career**

Most training which small businesses currently offer is job specific training, induction training or health and safety/first aid training. In parallel, some firms, especially those in the Retail & Wholesale sector, are devoting increasing proportions of their training budgets to help staff implement an expanding range of public policies – such as alcohol minimum unit pricing or sales of age-restricted products. This has constrained their capacity to invest in their people to support their reskilling and upskilling.

UK businesses commonly cite a lack of funds (59%) or a lack of time (52%) as barriers to upskilling their staff (CBI 2019). This under-investment is especially pronounced in smaller businesses with less capacity and resources in an uncertain and challenging political, economic and consumer climate. There are various causes for this chronic under-investment. Many owners, leaders and managers of SMEs struggle to invest in the training and development their people need due to a lack of time. The priority for small organisations is to manage their day-to-day operations and survival. With levels of economic growth and consumer spending relatively subdued over the past decade, many SMEs lack the financial capacity to invest in their staff, which highlights the need to improve awareness

### Skills for Growth

Skills for Growth is a free, tailored service, delivered by Skills Development Scotland and Remarkable, which provides a full skills audit and action plan to businesses with between 5 and 250 employees to help them understand their skills needs.

[www.ourskillsforce.co.uk](http://www.ourskillsforce.co.uk)

of and access to funding opportunities provided by Scotland's skills and enterprise agencies. Some SMEs also do not invest in their staff for fear that they will struggle to retain higher skilled individuals once they are more attractive to larger employers.

Levels of investment in employee skills development is often concentrated in larger organisations. But the biggest gains for our people, for business and for the Scottish economy as a whole will be focusing on and escalating investment in people in SMEs, especially those perceived as being in lower skilled roles. According to the Strategic Board for Enterprise and Skills, raising SME investment in their people could increase Scotland's productivity by as much as 30%.

### Flexible Workforce Development Fund

The Flexible Workforce Development Fund could be a key policy lever to support the reskilling and upskilling of Scotland's workforce. It was established by the Scottish Government in 2017 to distribute funds raised by the UK

Government's Apprenticeship Levy to large employers with annual salary bills of over £3 million to cover or partially cover training and upskilling of their employees.

Its aim is to support businesses and organisations address priority skills gaps, increase productivity and prepare their people for the future. Colleges are developing bespoke training opportunities in partnership with employers. The Scottish Government announced in its Future Skills Action Plan that it would double its investment in the Fund administered by the Scottish Funding Council to £20 million each year.

In principle, the Fund is a welcome initiative. Many colleges have proven their ability to respond flexibly to evolving employer demand thanks to the Fund's incentives and support. It has benefited employers across Scotland with substantial economic impact. We recognise its value to both employees and employers and support its extension and expansion. Employers across the private, public and third sectors have utilised the Fund to invest in their people and support their reskilling and upskilling, while also developing new, sustainable and symbiotic relationships with local colleges.

**The underperformance of the Flexible Workforce Development Fund is due to, firstly, a lack of flexibility in its parameters; secondly, a lack of scale; and, thirdly, a lack of capacity in some areas**

---

However, many Scottish employers have expressed concern that the Fund does not meet their needs or expectations given the level of investment which they have made through the Apprenticeship Levy, which the Scottish Government has agreed is “unwelcome”. There is a need to ensure Levy-payers are getting best value from the Fund, which does not represent the full revenue from the Apprenticeship Levy in Scotland. Substantial numbers of firms are simply absorbing the cost of the Levy (CBI 2019).

The underperformance of the Flexible Workforce Development Fund is due to, firstly, a lack of flexibility in its parameters; secondly, a lack of scale; and, thirdly, a lack of capacity in some areas. The Fund sets narrow and restrictive parameters for its use and is only available to large firms. Courses which are currently provided locally by colleges are not always what is needed locally by employers. Employers can only apply for up to £15,000 – many large employers do not engage for such a relatively small level of support. There is a lack of flexible, bespoke provision as originally envisioned from some local colleges.

Some employees have not benefited from recognition of this learning, as not all colleges have credit rated their bespoke training onto the Scottish Credit and Qualifications Framework. There is a need for reform.

---



# Work-Based Learning

## Creating a Nationwide Culture of Work-Based Learning

There is growing recognition from employers and learners of the value of social, experiential and collective learning contextualised in and by the workplace. Work-based learning opportunities bridge the gap between the physical or digital classroom and the workplace, learners and employers and education and the labour market.

Individuals develop Meta-Skills in self-management, social intelligence and innovation in addition to technical, sector-specific and job-specific skills through formal (e.g. apprenticeships, internships, part-time learning-working), non-formal (e.g. work placements, job shadowing) or informal (e.g. on-the-job training, mentoring, coaching) work-based learning opportunities.

There is likewise significant value in work-informed learning in schools, colleges and universities, where learning can be addressed to work-based challenges, curriculum can be designed with employer input or supplemented with work-related projects, placements or interactions. Schools, colleges and universities need to continue to cultivate close relationships with the local business community in order to provide these kinds of opportunities for students.

Work-based learning enables individuals to access learning which is highly relevant, authentic and current, earning while they learn and building their labour market, employer and career

knowledge and awareness. This experiential learning greatly enhances their employability. Many learners of all ages balance part-time work with part-time study to develop new skills and practical experience alongside each other and to . Meanwhile, employers access new skills and labour, enabling them to build a talent pipeline to improve the sustainability and productivity of their business and workforce. Skills also do not always need to be assessed formally to be evidenced or valuable.

There is fast-increasing demand for work-based learning opportunities from learners and employers across Scotland. The Centre for Work-Based Learning was established to further encourage this trend and respond with increased supply. The Centre for Work-Based Learning is a partnership between Skills Development Scotland, the University of Strathclyde, Heriot-Watt University and Robert Gordon University. It works closely to advise the Scottish Apprenticeship Advisory Board, which develops

### Foundation Apprenticeships - 'Find your future employees early'

Foundation Apprenticeships were launched in 2014 to provide employers with get early access to future talent, by connecting school pupils with real experience of the world of work. The programme helps them achieve an industry-recognised qualification and helps employers develop their talent pipeline.

[www.apprenticeships.scot](http://www.apprenticeships.scot)

apprenticeships with employers. The number of Scottish employers offering apprenticeships is steadily increasing and hit 16% in 2019 up from 12% in 2014. However, there is still significant work to do, as fewer than half of all Scottish employers are even aware of Foundation and Graduate Apprenticeships (Scottish Employer Perspectives Survey 2019).

The learning ecosystem should be re-balanced to provide more work-based learning opportunities. Work-based learning should be redesigned to provide a balance of benefits for learners, employers and the Scottish economy by ensuring that provision and learning content are directly linked to the realities of work. Employers should support more of their workforce to access – and engage more closely with government and its enterprise and skills agencies to design – high-quality work-based learning opportunities, including but not limited to apprenticeships.

## Fast-increasing demand for work-based learning opportunities from learners and employers across Scotland

We support the ambition of the Scottish Government and Skills Development Scotland to strengthen industry ownership of the skills system and to ensure work-based learning is efficient, responsive and future-focused through a strategic vision and approach for the design and delivery of apprenticeships in Scotland. The objective to develop a single standards architecture for work-based learning in Scotland is therefore highly positive. This architecture should be accessible, easy to navigate and

informed by models in Austria, Germany and Switzerland where such courses are mainstream, highly valued, well-structured, closely co-designed with industry and embed a strong focus on mentoring.

### Graduate Apprenticeships



Apprenticeships are the most common and well-known form of formal Work-Based Learning. Skills Development Scotland works with industry and employers to support the Scottish Government target of 30,000 new apprenticeship starts each year by 2020. Working with industry and partners across the skills and education system, Skills Development Scotland jointly supported more than 3,100 Foundation Apprenticeships for pupils in the first three years of the programme, and almost 1,200 Graduate Apprenticeships since they were introduced in 2017.

Graduate Apprenticeships were introduced in 2017 and are changing the way businesses and organisations can recruit, re-skill and upskill employees to respond to their evolving needs. Graduate Apprenticeships are industry-recognised, degree-level work-based qualifications offered in key sectors where there is a real need for skilled employees. The award is delivered through partnerships between employers and universities, where the apprentice is in employment for the duration of their studies.

Employees remain in paid employment and earn as they learn while progressing through their new work-based qualifications. Graduate Apprenticeship programmes are structured to provide a streamlined approach which ensures

that academic skills either build upon existing knowledge of procedures or are developed in parallel with them.

Graduate Apprenticeships are fully funded with no cost to the apprentice. Students spend approximately 80% with 'on the job' learning at work and 20% with 'off the job' learning on or off campus. Programmes are for anyone aged over 16 with no upper age limit. Feedback has been highly positive with widespread recognition of its value and a consensus that Graduate Apprenticeships are delivering 'job ready' talent.

Employer and learner demand for Graduate Apprenticeships are strong and increasing. Already, more than 400 employers across Scotland are offering new and existing employees the opportunity to undertake a Graduate Apprenticeship. Demand is exemplified by the 1,199 apprentices who have already opted to undertake a Graduate Apprenticeship job. The number of starts have more than trebled from year 1 to year 2. The Graduate Apprenticeships model has achieved early success and provision should be scaled up significantly across the Scottish economy to meet strong and growing demand.

Nonetheless, there are two key areas which provide opportunities for improvement. Graduate Apprenticeships are currently delivered on a full-time basis over a period of four years. This model does not work for part-time workers, unpaid carers, parents and many others. A more flexible model should be developed to support improved access and widened participation.

Moreover, Graduate Apprenticeships are part funded at present by the European Social Fund through an annual bidding process. With the

uncertainty around UK's preparations to leave the EU, the scale or vehicle of successor funding has not been clarified. It is important that the Scottish Government, the Scottish Funding Council and Skills Development Scotland clarify the position and secure the programme's future as soon as possible. There also needs to be further support for both higher education institutions and employers to improve their future planning by confirming funding for the long term, rather than on an annual basis.

## Employer and learner demand for Graduate Apprenticeships are strong and increasing

Achieving 'parity of esteem' among learners, parents and employers between traditional higher education and Work-Based Learning opportunities also remains an ongoing challenge. Fourteen of Scotland's nineteen universities now deliver Graduate Apprenticeships, up to Masters degree level in Civil Engineering, Cyber Security, Data Science, Early Learning & Childcare and more. All partners, employers and stakeholders should work together to promote and achieve a parity of esteem for all learner and career pathways, including between higher education and further education or technical training. Young people should be encouraged and supported to find purpose, worth, value and progression in the learner or career pathway that is right for them.

## Brewdog – Investing for Growth, Investing in Apprenticeships

BrewDog is a great Scottish scale-up success story. Since its foundation in Aberdeenshire in 2007, the craft beer company has gone from strength to strength, raising millions through equity crowdfunding, internationalising its business and becoming one of the fastest growing Food & Drink businesses in the UK.

Back in 2015, Skills Development Scotland's Skills for Growth initiative helped BrewDog identify priorities for its talent pipeline which led to the recruitment of 20 Modern Apprentices across the business. Now BrewDog are supporting 31-year-old Louise Wyllie through a four-year Graduate Apprenticeship in Business Management at Robert Gordon University.

Louise is employed as a senior customer service specialist by the multinational brewery. Her apprenticeship will see her complete an honours degree within the workplace, with the support of a dedicated mentor at BrewDog and support staff at the university.

Louise had been working as a senior UK customer service specialist for three years, before becoming the company's UK customer service team lead. She sees her apprenticeship as a key part of her career progression.

Andrew Marrins, BrewDog's Head of Learning and Development, said: *"Supporting the development of our crew at our HQ in Ellon is critical to our people strategy, therefore it made absolute sense to get our workforce on board with gaining qualifications to benefit them both personally and professionally."*

Brewdog's Planning Manager, Gary MacTaggart, Louise's mentor, said: *"In the fast-paced, frenetic workplace that BrewDog is, it can often be difficult to take a step back and consider the wider context or impact, but this programme is a great opportunity to further develop our talent."*

*"Louise has already started to think and approach situations differently, with a greater understanding of how other businesses work, along with the processes and theories of business management."*



# Lifelong Learning

## Lifelong Learning for All



The era of the 'job for life' is over. Over their lifetime, workers are now likely to do many jobs and have several careers. The pace of macroeconomic change, societal change and technological change fuelled by the Fourth Industrial Revolution means that what we do, the way we do it and the skills we need to thrive will be in a state of almost continual evolution.

We are now in an era of education for life. Workers do not and should not stop learning when they decide to leave school, college or university. As technology continues to disrupt the workplace, people will need lifelong learning support to re-skill and up-skill throughout and across their personal and working lives – as some have suggested, “learning is the new pension” which prepares us, protects us and stores up value for our future (McGowan 2019).

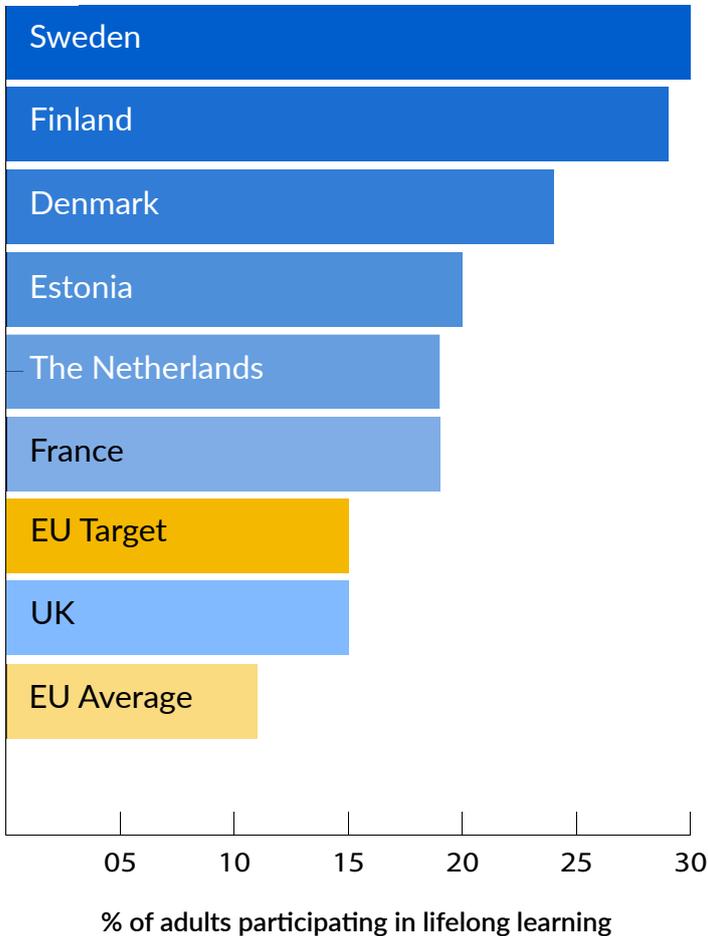
Our education and skills system will have to support lifelong learning by all of our people at all stages of their life and their career – from early years to elderly, from early to mid- to late career. All of Scotland's people should have access to high-quality learning and education opportunities. As our working-age population continues to decline, we will have to support increasing numbers of older workers to stay in work.

Engaging older workers with lifelong learning can be challenging. They are more likely to have

complex life circumstances which create barriers to access – particularly those from deprived or geographically isolated communities and those in long-term unemployment furthest away from the labour market. There is a need for our learning ecosystem to deliver skills and education opportunities flexibly, including online and part-time learning, to overcome financial and time constraints related to family, caring or job responsibilities.

The data suggests that the number of adults in learning or training across the UK may have declined in recent years. According to the UK Adult Participation in Learning Survey 2018, only 19% of UK adults say that they are “currently learning”. 37% say that they “have not learnt since leaving full-time education”. However, there is an uneven picture across the UK given the devolution of education and divergent approaches to maintenance and support. For example, the implementation of the Diamond Review (2016) in Wales – including the expansion of maintenance loans and grants and the realisation of parity of esteem between part-time and full-time education support – has significantly increased participation in flexible and adult learning in Wales.

The proportion of adults in education or training varies greatly across the EU, with many Central and Eastern European countries performing substantially worse than the UK. On average, 11.1% of EU adults participate in lifelong learning. Eurostat estimates participation in the UK at just below 15%, the EU target rate. However, participation is substantially higher in the higher skill, higher productivity economies of Sweden (30%), Finland (29%), Denmark (24%), Estonia (20%), the Netherlands (19%) and France (19%). There is no Scotland-only measure of



adult participation in lifelong learning to act as a benchmark and comparator to assess our performance.

To overcome barriers to older workers engaging with lifelong learning, the National University of Singapore is keeping all undergraduates and postgraduates enrolled for 20 years from the point of admission, making all current and future students eligible for over 500 continuing education courses. Alumni also have been a personalised online profile illustrating their skills

and where they can improve.

Building on the success of the CivTech model supporting innovation solutions for the public sector, the Scottish Government should create an Adult Learning Innovation Challenge Fund to stimulate and support innovative national, regional and local projects which engage adults in reskilling, upskilling and lifelong learning. The purpose of such a Fund should be to fuel new, original approaches which increase the accessibility of adult learning to hard-to-reach groups, under-represented demographics and marginalised communities. Eligibility for grants should be open to a diverse range of groups, including universities, colleges, training providers and community groups. The Fund should be additional to core funding for adult learning.

### Funding Reskilling, Upskilling & Lifelong Learning



Perhaps the most significant challenge for Scotland in increasing reskilling and upskilling opportunities, and the greatest barrier to lifelong learning across the country, is funding. A lack of access to finance for individuals or employers is often a barrier to accessing the skills and education system which entrenches Scotland's inequalities.

Many individuals are not personally able to fund their learning, whether that is a four-year MBA or a one-day training course. This prevents them from pursuing and directing their own reskilling, upskilling and lifelong learning opportunities. Policy solutions and innovations to bridge Scotland's skills funding gap are increasingly urgent in the current context of stagnant wages,

plateaued living standards, rising living costs, declining employer investment in training and subdued or even negative economic growth.

Some funding is available but does not meet everyone's needs. For example, the Part-Time Fee Grant enables some part-time learners to cover the cost of their tuition fees for undergraduate study of 30+ credit courses – however, only those earning under £25,000 a year are eligible and it does not cover maintenance costs. Everyone in Scotland should be able to access personalised, flexible, modular reskilling, upskilling and lifelong learning opportunities which are of a high quality and support their progression and productivity.

Individuals need to be empowered to direct their own learning, their own place in the labour market and their own future with support from funding which they can draw on at any time during their lifelong learning journey. This would be an important response to Scotland's skills funding gap and to the growing personalisation of curated learning.

Scotland has experimented with a similar, albeit much less ambitious, approach. From 13 January 2020, Skills Development Scotland will replace Scotland's longstanding Individual Learning Accounts with new Individual Training Accounts (ITAs) open to up to 10,000 new applications. ITAs provide up to £200 towards the cost of a single course or training episode per year for those aged 16 or over who are not in education, unemployed or earning less than £22,000, increasing their employability and skills of those out of work or in low paid work. There have been proposals to build on this to target an enhanced ITA at a larger number of low earners (IPPR Scotland 2018).

However, it is our judgement that this does not go far enough. We believe that a much more significant intervention is required given the scale of the upskilling funding gap across all of Scotland's economy and across all of Scotland's workforce.

There is an opportunity for Scotland to learn from precedents in other countries and to attempt to emulate the success of more ambitious, more universal models, such as that in place in Singapore (OECD 2019a). Nevertheless, there will be no one size fits all. It is important to note that the differences between Singapore and Scotland's learning ecosystem, economy and society are significant and will require different approaches to meet the different culture and expectations of government, employers, institutions and individuals.

Singapore's approach, known as SkillsFuture, aims to "encourage individuals to take ownership of their skills development and lifelong learning" by financially supporting individual-initiated training, rather than employer-initiated training. The system focuses on developing "skills mastery", which it defines as "more than having the right paper qualifications and being good at what you do currently; it is a mindset of continually striving towards greater excellence through knowledge, application and experience".

SkillsFuture funding is available to "every Singaporean, every job, at every life stage". All Singaporeans aged 25 and above received an opening credit of S\$500 (or £282) from January 2016. The credit does not expire. The government provides periodic top-ups. Individuals can accumulate credit. Credit can be used to fund approved courses in Singapore, including MOOCs from foreign-based

institutions.

*“Singapore’s only resource is its people. The government knows it has to invest in its workers, which is why it puts so much into education.”*

Professor Tan Eng Chye

President, National University of Singapore

There is also a curated SkillsFuture Series list of short, industry-relevant training programmes that focus on “emerging skills” in data analytics, finance, tech-enabled services, digital media, cyber security, entrepreneurship, advanced manufacturing and urban solutions. In 2016, 126,000 Singaporeans used their credits to access around 18,000 courses. This approach has

enabled Singapore to develop a highly responsive and competitive supply of labour and skills, especially in key high-growth sectors, by investing in the accelerated reskilling and upskilling of a significant proportion of its workforce.

An Upskilling & Lifelong Learning Fund in Scotland with similar objectives – but which reflects our distinct learning ecosystem, economy and society and is in addition to existing funding and support, such as the Part-Time Fee Grant – would be an important intervention to support and accelerate reskilling and upskilling across Scotland, empowering individuals to partly or wholly fund different kinds of learning opportunities at different stages.

## SkillsFuture Singapore

### *What is SkillsFuture?*

SkillsFuture is a national movement to provide Singaporeans with the opportunities to develop their fullest potential throughout life, regardless of their starting points. Through this movement, the skills, passion and contributions of every individual will drive Singapore’s next phase of development towards an advanced economy and inclusive society.

### *Who Is It For?*

No matter where you are in life – schooling years, early career, mid-career or silver years – you will find a variety of resources to help you attain mastery of skills. Skills mastery is more than having the right paper qualifications and being good at what you do currently; it is a mindset of continually striving towards greater excellence through knowledge, application and experience. With the help of the Future Economy Council, education and training providers, employers, unions – you can own a better future with skills mastery and lifelong learning. Your skills. Your asset. Your future.

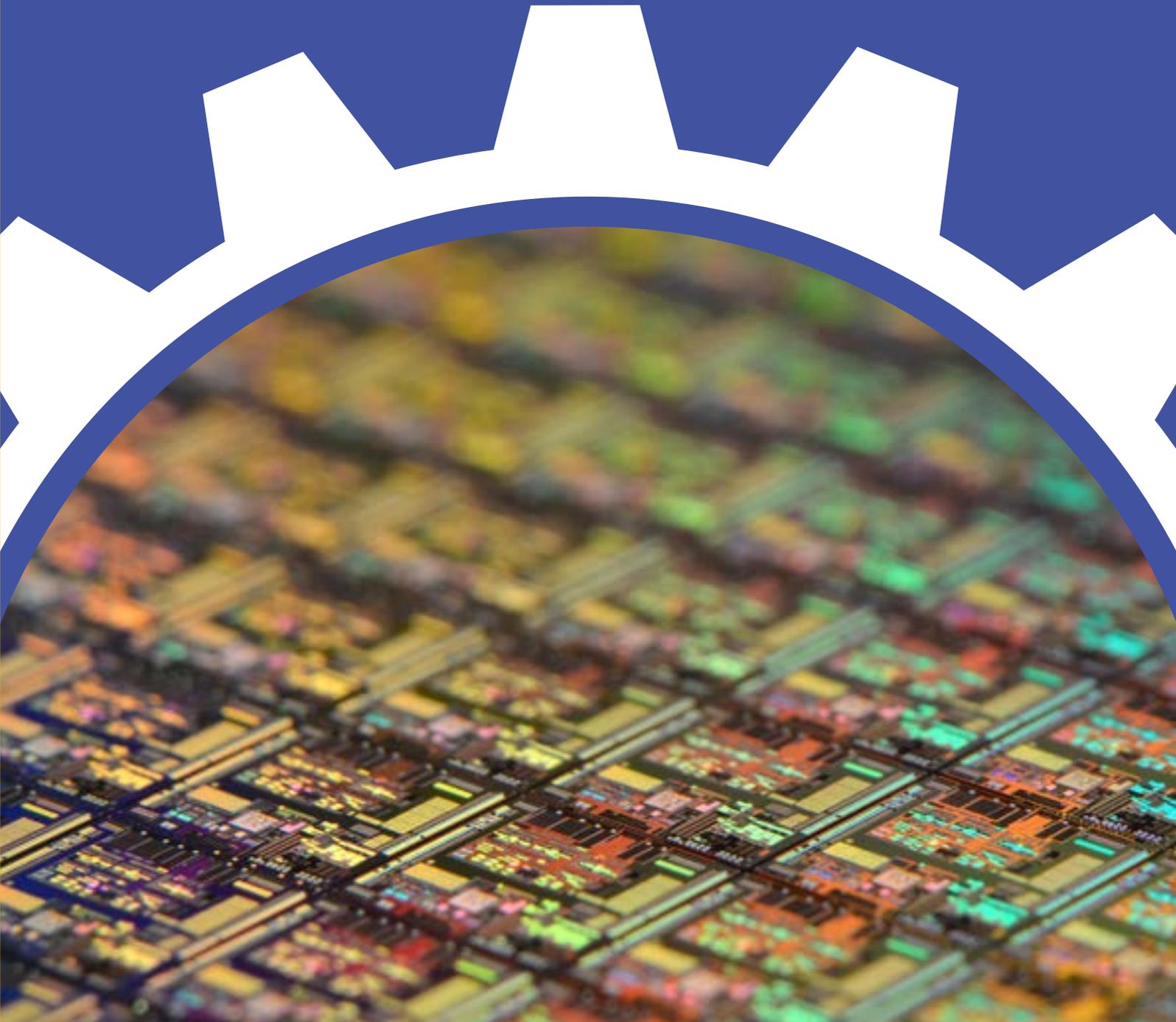
### *Objectives:*

- Help individuals make well-informed choices in education, training and careers.
- Develop an integrated high-quality system of education and training that responds to constantly evolving needs.
- Promote employer recognition and career development based on skills and mastery.
- Foster a culture that supports and celebrates lifelong learning.

[www.skillsfuture.sg](http://www.skillsfuture.sg)



# SUMMARY OF RECOMMENDATIONS



# High Performing Individuals

## Future Skills & Meta-Skills

### Recommendation #1

The Scottish Government should convene a Scottish Disruption Council of government, business, industry, academia, trade unions and citizens to inform, agree and coordinate Scotland's response to the Fourth Industrial Revolution which manages social and economic disruption and responds to public concerns.

The Scottish Disruption Council could play an important role to:

- Support, commission and conduct analysis of how Scotland's labour market, employers and workers will be affected.
- Provide an important feedback loop to future-proof public policy.
- Facilitate and accelerate coordinated action across the public, private and third sectors.
- Act as a trusted source of information and analysis in an urgently needed national conversation about the challenges, opportunities and ethical questions posed for our economy and our society.

### Recommendation #2

Developing Meta-Skills in the workforce should be a national priority for Scotland:

- Meta-Skills should be embedded in all learning across the skills and education system and its framework should form the basis of a single national approach.
- Skills Development Scotland, the Scottish Funding Council and the Scottish Qualifications Authority should work with employers, learners, workers and stakeholders across the learning ecosystem to develop an accessible, intuitive language around Meta-Skills.
- Employers should engage with the Meta-Skills framework, educate their employees on Meta-Skills and integrate Meta-Skills into their recruitment practices, training programmes and future workforce planning.
- The Scottish Government should fund its agencies, local authorities, universities and colleges to up-skill all teachers, educators and career advisors in Meta-Skills by 2025 to empower them to educate and support all learners.

### Recommendation #3

The Scottish Government's revised Careers Strategy should enhance focus on lifelong learning in Meta-Skills and up-to-date awareness of skills, labour market, technology and sector trends for all practitioners involved in the delivery of career related learning and support, such as, careers advisors, guidance teachers and Jobcentre Plus advisors to deliver fit-for-purpose, all-age careers information, guidance and advice.

---

## The Learning Ecosystem

### **Recommendation #4**

Universities and colleges should expand and develop their offer of flexible, module and personalised learning opportunities, including unbundling existing qualifications into micro-credentials, underpinned by support and incentives from the Scottish Government and the Scottish Funding Council.

### **Recommendation #5**

Democratising knowledge of and supporting upskilling in new and emerging Fourth Industrial Revolution technologies should be a national priority. The Scottish Government should work with industry and education partners to deliver a free-access online course on the fundamentals of AI based on Finland's successful 'Elements of AI' model with the objective of upskilling 2% of the population by 2022.

### **Recommendation #6**

Universities and colleges should develop and deepen their partnerships to expand their outreach and enhance their skills provision in local and rural communities across Scotland to meet the distinct needs of rural employers and learners.

## The Talent Pipeline

### **Recommendation #7**

Scotland's skills and enterprise agencies need to provide streamlined, intensified and digital products, services and support for employers, especially SMEs, to invest in the digital, management and leadership skills of their workforce.

### **Recommendation #8**

Large businesses and organisations should invest in the growth, sustainability, productivity and competitiveness of their supply chains by supporting internship programmes which connect their SME partners with student and graduate talent.

## Access to Talent & Migration Policy

### **Recommendation #9**

The UK Government should urgently and radically reform the immigration system to support inward migration through:

- Simplification and digitisation of processes, lower costs for individuals and for employers and minimised bureaucracy
  - Increased flexibility based on evolving labour shortages, skills gaps and employer demand
-

- Elimination of any minimum salary threshold above the legal requirement of the National Minimum Wage
- Granting asylum seekers an immediate legal right to work and study in the UK to support new arrivals to contribute to our economy and integrate into our society
- Increased flexibility based on national and regional needs within the UK

**Recommendation #10**

The UK Government should devolve the necessary powers to enable the Scottish Parliament and Scottish Government to implement a differentiated migration system for Scotland within the UK framework to increase inward migration.

**Recommendation #11**

Scotland's differentiated migration system should include a post-study residency visa giving those who complete four years of study in Scotland an automatic right to live and work here permanently to attract students and retain graduate talent.

## High Performing Workplaces

### Skills Recognition, Supply & Demand

**Recommendation #12**

The UK Government should urgently add Early years, Early Learning and Childcare workers to the Scotland Only Shortage Occupations List.

**Recommendation #13**

Scotland needs to implement a comprehensive national approach to the recognition of prior learning developed in other countries to fully harness the skills and talent of its migrant workforce.

**Recommendation #14**

The Scottish Funding Council and the Scottish Credit and Qualifications Framework Partnership should work together to develop a systematic, nationwide approach to the recognition of prior learning developed through informal or non-formal learning. Employers should also develop more flexible, holistic methods of recognising the skills of their employees and candidates as capabilities, rather than qualifications necessarily.

**Recommendation #15**

The Scottish Government, local authorities and employers should escalate investment in Modern

Languages education and linguistic skills in the workforce to close the linguistic skills and cultural awareness gap which is impeding Scottish export and business growth.

#### **Recommendation #16**

Scotland needs to better engage its diverse international student population to achieve its export ambitions. The Scottish Government, universities and colleges should develop a dedicated internship and employment programme to connect multilingual international students with export-ambitious SMEs.

## Innovative, Inclusive Recruitment

#### **Recommendation #17**

Employers should adopt innovative, inclusive recruitment models which support and increase diversity in the workforce, because diverse teams are more successful. They should also conduct step-by-step, root-and-branch reviews of their recruitment practices to screen for conscious or unconscious bias.

## Leadership & Management

#### **Recommendation #18**

Scotland needs to take action to close its leadership skills gap:

- All employers should invest in their leaders and managers to develop their leadership skills and capacity to empower, protect and support others.
- All employers should have a formal, organisation-wide commitment to coaching and mentoring.
- Skills Development Scotland, Scottish Enterprise and partners should develop flexible incentives and tailored, bitesize advice, training or support for upskilling leaders and managers, with a focus on SMEs and smaller third sector organisations.

#### **Recommendation #19**

Employers should consider less hierarchical, more agile workplace models which empower their people to make the most of their skills.

#### **Recommendation #20**

Scottish Enterprise and Scotland CAN DO should continue to raise awareness of, promote and provide support for employee ownership across Scotland.

## Fair Work

### **Recommendation #21**

The Scottish Government should set a timeline for a transition to Fair Work First criteria and conditionality in all public sector contracts, procurement and licensing.

### **Recommendation #22**

The UK Government should equalise employment rights and protections for all workers to ensure that self-employed and gig economy workers have equal access to the minimum wage, sick pay and holiday pay.

### **Recommendation #23**

The UK Government should ban exploitative and inappropriate zero hours contracts. Some voluntary zero hours contracts will, however, remain necessary and desirable for some workers who genuinely require or value greater flexibility.

### **Recommendation #24**

There should be parity of esteem and equality of support between physical health and mental health in education and employment:

- Employers should develop, implement and maintain clear, fair and accessible policies on mental health.
- Employers should invest in mental health upskilling for their workforce and define mental health literacy as a core competency of all leaders and managers.
- Employers should explore offering 'mental health days' or 'wellbeing days' for employees suffering from stress, anxiety or a mental health issue. Scotland's public sector should lead the way by introducing two mental health days annually for every worker.

### **Recommendation #25**

The UK Government should legislate to give workers a 'right to disconnect' out of their agreed working hours. Employers should define parameters for flexible and out-of-hours working after dialogue with their employees. Scotland's public sector should lead the way by granting its workers a right to disconnect.

# In-Work Development

## Skills Recognition, Supply & Demand

### **Recommendation #26**

Scotland's learning ecosystem, Skills Development Scotland, Fair Start Scotland and other employability services should focus on supporting the unemployed through long-term upskilling rather than a short-term or immediate transition into work given the nature of technological change and the future of work.

### **Recommendation #27**

Businesses and organisations in key sectors of the Scottish economy facing labour shortages and skills gaps should establish industry-led partnerships to develop and deliver intensive, industry-relevant, short courses for reskilling and upskilling workers.

### **Recommendation #28**

Scotland needs to raise levels of investment in its people to increase their resilience and maintain our competitiveness in the face of global disruption. The Scottish Government should develop flexible incentives to catalyse investment by employers, especially SMEs, in upskilling their workforce.

### **Recommendation #29**

The Flexible Workforce Development Fund should be reformed to strengthen its performance and escalate its impact. In order to significantly raise its flexibility, scale and ambition:

- Eligibility should be extended to non-Levy paying employers of all sizes and to the self-employed.
- Employers should be able to use the Fund to cover or partially cover the cost of training and upskilling not only through Scotland's colleges, but also through universities and other accredited training providers.
- Providers need to increase their offering of flexible, bespoke upskilling opportunities to meet employer needs, especially of management and leadership training, building on the substantial progress made by colleges and universities.
- Providers should be encouraged to credit rate the bespoke courses which they develop for employers onto the Scottish Credit and Qualifications Framework to ensure employees secure recognition for that learning.
- The £15,000 ceiling per employer should be raised to a higher level. It places constraints on access to funding and disincentivises many medium and larger employers from engaging with the Fund.

## Work-Based Learning

### Recommendation #30

Employers should increase formal, non-formal and informal work-based learning opportunities for their employees, including working with Skills Development Scotland to deliver Foundation, Modern and Graduate Apprenticeships.

### Recommendation #31

The Scottish Government, the Scottish Funding Council and Skills Development Scotland should:

- Continue to work with learners, employers and stakeholders to achieve parity of esteem for all learner and career pathways, including apprenticeships.
- Significantly expand provision of Graduate Apprenticeships across Scotland, working with employers to develop and deliver Graduate Apprenticeships in a wider range of subject areas and sectors.
- Reform the current model of learning to a more flexible approach which supports improves access and widens participation.
- Clarify post-Brexit funding landscape and confirm long-term funding for Graduate Apprenticeships to enable better forward planning by higher education institutions and employers.

## Lifelong Learning

### Recommendation #32

Scotland should set an ambition to be a nation of lifelong learning. The Scottish Government should set a national target of matching the performance of leading EU member states, and invest further in lifelong learning opportunities and incentives, to drive higher levels of adult participation and lower levels of inequality in lifelong learning.

### Recommendation #33

The Scottish Government should create an Adult Learning Innovation Challenge Fund to stimulate and support innovative national, regional and local projects which engage adults in lifelong learning.

### Recommendation #34

Everyone in Scotland should have a lifelong entitlement to learning. The Scottish Government should establish an ambitious, universal and flexible Upskilling & Lifelong Learning Fund, in addition to existing support, to empower every Scottish adult to fund reskilling or upskilling opportunities at any stage of their life or career.

Such a Fund would empower individuals to direct their own learning and progression. They could potentially choose to use the Fund to partly or wholly fund, for example:

- 
- Bitesize digital upskilling courses in their early career in their 20s, and then;
  - A further or higher education qualification to develop their leadership and management skills through part-time study in mid-career in their 30s or 40s; and then,
  - Online or distance learning from institutions globally to reskill to in late career in their 50s or 60s to keep pace with technological change or support career change, perhaps in response to redundancy or sector growth and decline.
-

# ACKNOWLEDGMENTS

SCDI would like to thank the members of the Leadership Group, as well as all of the SCDI members who participated and provided input, for their commitment to the project and for their contribution to the development of this report.

## About SCDI

The Scottish Council for Development and Industry (SCDI) is Scotland's Social and Economic Forum. We are an independent and inclusive economic development network representing all sectors and all geographies of the Scottish economy. We convene our members, partners and stakeholders across the private, public and third sectors to deliver inclusive and sustainable economic growth for Scotland.

## THE LEADERSHIP GROUP

### Chair

Tony Coultas, Head of Service Innovation, Skills Development Scotland

### Members

David Brown, Director of Strategic Partnerships, The University of Edinburgh

Sean Duffy, Chief Executive, The Wise Group

Rachel Elliott, Policy Manager, OPITO

Fiona Godsman, Chief Executive, Scottish Institute for Enterprise

Marie Hendry, Depute Director, The Open University in Scotland

Matt Lancashire, Director of Policy and Public Affairs, SCDI

Willie Maltman, Director, Future Proof Learning

Elaine Melrose, Group Director of Resources, Wheatley Group

Aileen Ponton, Chief Executive, Scottish Credit and Qualifications Framework Partnership

Christine Roberts, Group HR Director, David MacBrayne

Alastair Sim, Chief Executive, Universities Scotland

Gill Stewart, Director of Qualifications Development, Scottish Qualifications Authority

Sandra Wright, Head of Careers and Employability, University of Strathclyde

### Secretariat & Lead Author

David Kelly, Policy Manager, SCDI

### Further Information

If you would like to discuss this report further, or have any feedback, please contact:

[david.kelly@scdi.org.uk](mailto:david.kelly@scdi.org.uk)



