Skills Development Scotland

Sectoral Skills Assessment

Digital Technologies

October 2025

Sectoral Skills Assessments

First launched in 2017, Sectoral Skills Assessments (SSAs) provide a robust and consistent evidence base to support strategic skills investment planning. Skills Development Scotland (SDS) has worked with key partners and stakeholders to produce SSAs, ensuring an inclusive approach to their development, dissemination and utilisation.

SSAs include published data sets. Inevitably, when using published data there is a time lag, but the data contained is the most up-to-date available at the time of writing. SSAs also include forecast data commissioned through Oxford Economics.

The Technical Note[1] provides full detail on the caveats that must be applied when using forecast data, but broadly, it should be noted that:

- Forecasts are based on what we know now and include past and present trends projected into the future.
- The more disaggregated they become, especially at smaller geographical units, the less reliable they are likely to be.
- Their value is in identifying likely directions of travel rather than predicting exact figures.
- The forecasts do not account for national or sectoral activities, initiatives or investments that are planned.

Industries and occupations used in the SSAs are defined by Standard Industrial Classifications (SIC)[2] and Standard Occupational Classifications (SOC).[3]

This SSA report is for the Digital Technologies sector. The sector encompasses: Reproduction and Repair of Computer Media, Manufacturing of Digital Components, Publishing of Computer Games, Telecommunication Activities, Computer Programming Activities, Data Processing, and Web Portals. Please see Appendix 1 for the SIC definition used in this report.

The SSAs are part of a suite of Labour Market Insight publications by SDS. Other products in the suite include:

Economy, People and Skills report which provides succinct and up-to-date evidence on Scotland's economy, businesses and people. It is published monthly.

Regional Skills Assessments provide a coherent, consistent evidence base to inform future investment in skills, built up from existing datasets and forecasts for College regions, Rural Scotland and all City and Growth Deals regions. These are published annually.

The **Data Matrix** is an interactive tool, offering more detailed data from a variety of sources in a visually engaging format. It is updated frequently.

Alongside the suite of Labour Market Insight publications, SDS also produces a wide range of reports such as statistics on Modern Apprenticeships and the Annual Participation measure for 16-19 year olds. This includes a wide range of data related to equalities. Further information can be found on the Publications and Statistics section of the SDS website.

We value user feedback on the Sectoral Skills Assessments.

If you would like to provide feedback, please do so **here.**

For any further information or queries on the SSAs or any of our other products, please contact: **RSA@sds.co.uk**

1. SSA Technical Note (2025).
2. Office for National Statistics UK Standard Industrial Classification (SIC) 2007.
3. Office for National Statistics UK Standard Occupational Classification (SOC) 2010.

The Context for Scotland's Labour Market

Over the past decade, the Scottish economy has experienced disruption driven by changes in the global political landscape, the cost-of-living crisis and conflicts in the Middle East and Ukraine. In addition, megatrends in demography, technology, and the environment have continued to shape Scotland's economy and labour market, many of which are interdependent. Below is an overview of the drivers that are expected to have the greatest influence on Scotland's labour market outlook in the near term, based on a comprehensive analysis of both structural and cyclical factors.

The Economy

Scotland and the UK experienced weak economic growth of 1.1% in 2024, with inflation also staying above the 2.0% target. Forecasters expect economic growth to remain at around 1.0% in 2025, with inflation also expected to remain elevated. The effects of rising prices and high interest rates continue to impact Scottish households and businesses. This contributes to the Scottish labour market being cooler in 2025, following a period of sustained tightness in recent years.

Demographic Change

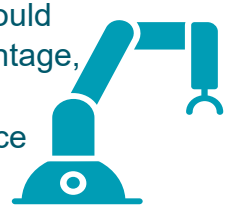
Scotland's population is projected to grow until mid-2047, largely driven by positive net migration, which will offset the anticipated natural decline due to a falling fertility rate. However, whilst the population is growing, it is also ageing. Around one-fifth of Scotland's residents were aged 65 or over in 2024. By 2047, the number of people of pensionable age is expected to increase by 21%. This demographic change has implications for the economy and labour market, by affecting caring responsibilities, tax revenue, and productivity.

Inclusion and Equality

There is a lingering effect from the cost-of-living crisis, which began in 2021, with rising energy prices and financial pressures continuing to have a disproportionate impact on low-to-middle income households. Poverty, including in-work poverty, persists; however, the Fair Work policy agenda aims to reduce labour market inequalities. Barriers to accessing the labour market remain for disabled people and minority ethnic groups, and gender equality still requires progress.

Technology and Automation

Artificial Intelligence (AI) continues to be the core driver in technology transformation. Scotland has a strong technology sector, underpinned by extensive academic and business presence in AI and related fields. The adoption of AI is rapidly increasing among Scottish businesses, particularly in optimising workflows. However, the implications of AI for the labour market remain uncertain. Scotland's strong base in digital and data skills could provide an advantage, but maintaining a skilled workforce will be essential.



Climate Change and Net Zero

The transition to net zero will directly impact the labour market as actions are taken to meet net zero targets. This shift offers significant opportunities for job creation in Scotland, particularly in the clean energy sector. Scotland has strong natural assets, and existing sectoral strengths provide a strong foundation for a green economy. However, upskilling will be crucial for transition to net zero. Especially in the construction, manufacturing, agriculture, energy and transport sectors.

A fuller report on Scotland's Labour Market Drivers can be found here.

Sectoral Insight[1]

Strategic Developments and Investments

In 2025, a new Scottish Technology Council was established to support the Scottish Government in maximising the economic potential from the digital technology sector. The Council, which consists of academia and industry, are tasked with providing Ministers with strategic advice and increasing opportunities for public, private and academic collaborations.

The AI Opportunities Action Plan presented the roadmap for the UK to benefit from the AI opportunity. This included a commitment to establishing regional AI Growth Zones, which would unlock investment, drive innovation and create employment opportunities. Successful Growth Zone sites are expected to be announced in Autumn 2025.

In the 2025/26 Programme for Government, the Scottish Government committed to developing AI Scotland, which would be a national programme to foster AI innovation as well as increase SME AI adoption.

The UK Compute Roadmap sets out a series of actions to support the UK in developing the technological infrastructure required for digital and AI innovation. This included committing up to £750 million for the University of Edinburgh to host the UK's most powerful supercomputer.

A new Deep Tech Supercluster programme brings together public, private and education partners to support companies at the leading edge of innovation, to accelerate the transition from early-stage prototype to market ready. This builds on a series of actions being taken forward to support the Scottish Government's Innovation Strategy vision of Scotland being internationally recognised for its ability to maximise economic prosperity from its innovations.

Building a Data and AI Workforce

Maximising benefit from these significant investments and interventions requires highly skilled employees, and Data and AI Skills in Scotland: Closing the Gap for a Promising Economic Future identifies some of the current skills challenges. Insights include that whilst data analysis, cyber security and machine learning skills are all in high-demand, over half of businesses consider their data and AI literacy to be moderate or low.

Data Lab's new Data & AI Skills Framework provides employers and education and skills providers with a competency framework to better understand the range of data and AI skills, and to provide a progression pathway.

The Scottish AI Playbook also provides employers with resources to help them on their data and AI journey. Tools include an AI Maturity Checklist, AI Jargon Buster and skills and training guides.

It is important to note that the forecasts used in this Sectoral Skills Assessment are policy and investment neutral.

This means the figures present a baseline outlook that takes into account historical trends and external economic conditions, but the figures do not reflect investment or policy that is unconfirmed or at planning/development stage.

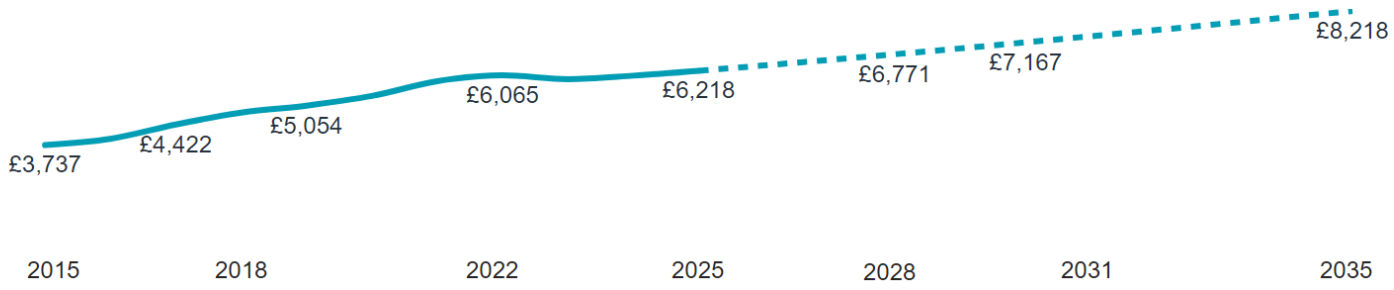
This would include, for example, the opportunities which could be leveraged if Scotland has a successful AI Growth Zone bid.

Therefore, the forecasts should be used in conjunction with other sources, and readers are encouraged to overlay these with their own local and sectoral knowledge.

1. Insight from the sector gathered via Skills Development Scotland (2025).

The Economy

Gross Value Added (GVA, £m) (2015-2035)[1, 2]



In 2025, GVA in the Digital Technologies sector was estimated to be £6,218m, generating 3.7% of Scotland's total economic output. Between 2015 and 2025, GVA in the sector was estimated to have increased by 5.3% on average each year, compared to equivalent annual growth of 0.9% across Scotland.

Looking ahead, GVA in Digital Technologies is forecast to grow on average by 2.8% each year between 2025 and 2035, which is above Scotland's average (1.7%). In 2035, the sector is forecast to account for 4.1% of Scotland's total economic output.

Digital Technologies forecast GVA in 2028: **£6,771**m

↑ up 8.9% from 2025

Digital Technologies forecast GVA in 2035: **£8,218**m

↑ up 21.4% from 2028

Scotland forecast GVA in 2028: **£177,951**m

↑ up 5.2% from 2025

Scotland forecast GVA in 2035: **£199,512**m

↑ up 12.1% from 2028

Productivity (GVA per job) [1, 3]

In this report, we have used Oxford Economics' measure of productivity, which is calculated by dividing total sectoral GVA by total sectoral employment (measured by jobs). Please note, there are different ways of calculating productivity, and caution is needed when interpreting productivity data presented in this report. It must be considered in the context of other data and insight.

In 2025, productivity in the **Digital Technologies** sector was estimated to be **£67,200**. In comparison, the Scottish average was £57,700.

Digital Technologies forecast productivity in 2028: **£70,600**

↑ up 5.0% from 2025

Scotland forecast productivity in 2028: **£59,100**

↑ up 2.4% from 2025

Digital Technologies forecast productivity in 2035: **£80,900**

↑ up 14.6% from 2028

Scotland forecast productivity in 2035: **£63,600**

↑ up 7.5% from 2028

1. SDS (2025). Oxford Economics Forecasts.
2. GVA is the measure of the value of goods and services produced within the economy and is an indicator of the sector's health.
3. Productivity is the measure of goods and services produced per unit of labour input. The Oxford Economics forecasts of productivity shown here have been calculated by dividing total sector GVA by total sector employment (measured by jobs).

Current Demand

Workforce size 2025: **87,600** people[1]

This was estimated to account for **3.2%** of Scottish employment.

The sector's workforce was estimated to have **increased** by **31.5%** (or **21,000** people) between 2015 and 2025.

This compares to a Scotland wide increase of **5.5%** or **141,500** people between 2015 and 2025.

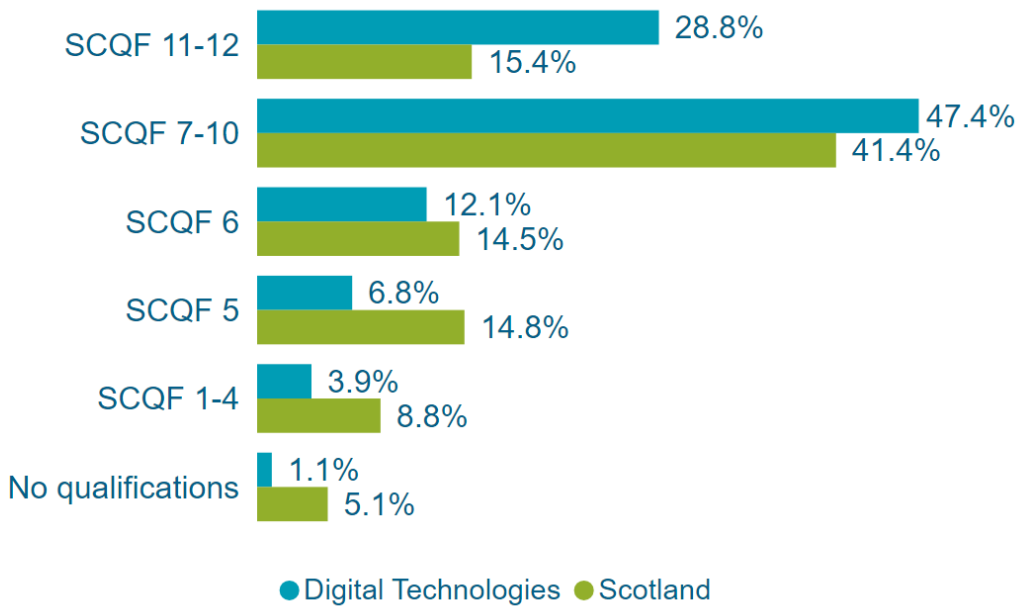
Employment by Region (people), 2025[1]

The greatest number of people employed in **Digital Technologies** were estimated to be in:

Edinburgh, East and Midlothian	Glasgow College Region *	West Lothian	Lanarkshire
23,700	**21,800**	**8,200**	**5,800**

Workforce Qualifications, 2025[1]

It was estimated that workers in **Digital Technologies** had higher qualifications than the Scottish average. In 2025, it was estimated that 76% of workers in the sector were qualified to SCQF Level 7 and above.[2]



Top 10 Employing Occupations (people), 2025[1]

1. SDS (2025). Oxford Economics Forecasts.
2. See SCQF Framework for further information on SCQF qualification levels.

*Glasgow College Region covers East Dunbartonshire, East Renfrewshire and Glasgow City local authorities.

Current Demand

The proportion of Local Authorities' workforce employed in Digital Technologies, 2025[1, 2]

Scottish local authorities have sectoral strengths that make them unique. This means that the **Digital Technologies** sector may be more important to some local economies, as a higher proportion of the local workforce is employed in the sector.

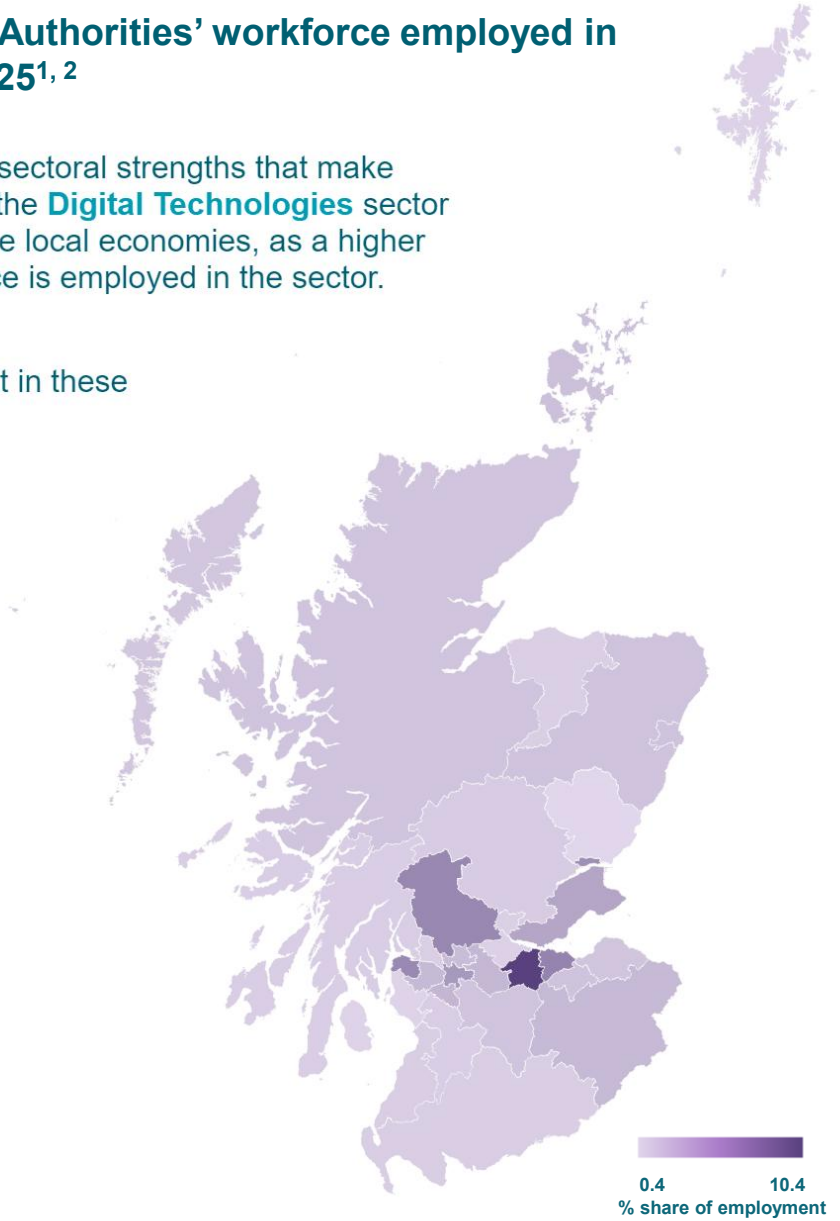
The sector was most prominent in these local authorities:

West Lothian
10.4%

City of Edinburgh
5.9%

Stirling
5.6%

Inverclyde
5.6%



Real Living Wage and Gender Pay Gap[3]

Individuals earning Real Living Wage or more:
In April 2024, the real living wage rate for employees who did not work in London was £12.00.

Manufacturing
2023: **90.8%** 2024: **89.1%**

Information & Communication
No data available

Other Service Activities
2023: **80.6%** 2024: **74.3%**

All sectors
2023: **89.8%** 2024: **88.6%**

Gender Pay Gap for median full-time hourly earnings:

Manufacturing
2023: **15.7%** 2024: **9.7%**

Information & Communication
2023: **13.3%** 2024**: 17.4%**

Other Service Activities
2023: **-9.0%** 2024: **-9.2%**

Scotland
2023: **1.4%** 2024: **2.2%**

Due to data availability, a 'best fit SIC code approach' has been used, so sectors definitions here may not fully match key sector definitions.

Modern Apprenticeships[4]

MA **starts for IT & Other Services*:**

Q4 2023/24: **2,621** Q4 2024/25: **2,956**

MAs **in training for IT & Other Services*:**

Q4 2023/24: **3,842** Q4 2024/25: **3,906**

For the latest quarterly MA statistics, please click **here.**

* Based on SDS Occupational Groupings.

For data on FAs and GAs please see the Publications section of our website. For data on colleges and universities please see Scottish Funding Council and Higher Education Statistics Agency.

1. SDS (2025). Oxford Economics Forecasts.
2. The proportion of the workforce in the Local Authority employed in the sector is calculated by dividing the sectoral employment in the area by total employment in the area.

3. Scottish Government (2025). Annual Survey of Hours and Earnings: 2024. The figures for 2023 have been revised. Due to data availability, a 'best fit SIC code approach' has been used, so the sectoral definitions and totals in this section may vary from those we have used elsewhere.

4. SDS (2025). Modern Apprenticeship Statistics.

Job Postings[1,2,3]

Between July 2024 and June 2025, there were **505,170** job postings in Scotland across all sectors. The labour market across the country has cooled following a peak in job postings in 2022, and since the end of 2023 the number of jobs postings each month has been broadly stable.

Spotlight on… Programmers and Software Development Professionals[4]

Between July 2024 and June 2025 there were **8,650 job postings** for Programmers and Software Development Professionals. The number of job postings has decreased by **14.2%** compared to the period between July 2023 and June 2024 (**8.0%** decline across all occupations comparatively). However, demand for these roles remained steady.

Top Locations:

- Glasgow City — **3,130 job postings**
- Edinburgh City — **3,030 job postings**
- Aberdeen City — **430 job postings**
- Dundee City — **280 job postings**

Specialised skills and knowledge included:

- Software Engineering and Development
- Amazon Web Services
- Agile Methodology
- Programming Languages (Python, Java, SQL, C#)
- Software Development

Median real-time advertised salary: **£50,100**

Spotlight on… Artificial Intelligence Skills[5]

The number of job postings requiring at least one Artificial Intelligence (AI) Skill has more than quadrupled over the past decade. **Between July 2024 and June 2025**, there were 5,700 job postings that required at least one AI skill across Scotland.

Top Locations:

- Edinburgh City — **2,200 job postings**
- Glasgow City — **1,800 job postings**
- Aberdeen City — **270 job postings**
- Dundee City — **100 job postings**

Top job titles included:

- Data Scientists
- Data Engineers
- Software Engineers
- Research Fellows
- Python/Java Engineers
- Machine Learning Engineers
- AI Trainers
- Data Analysts

1. Lightcast 2025. Online job postings data provides a useful barometer for the health of the jobs market. It is important to note that the data does not capture all activity, so it should be considered as an estimate of activity.
2. Job postings are rounded to the nearest 10.
3. Data is for the period covering July 2024 – June 2025
4. Data is based on SOC 2134 for the whole of Scotland. Median salary based on 24% of job postings
5. Data is based on the Artificial Intelligence skills definition by Lightcast for the whole of Scotland. Lightcast has created a list of over 350 AI skills. More information can be found here.

Spotlight: Digital Practitioners in Digital Technologies

Digital Practitioners in Scotland

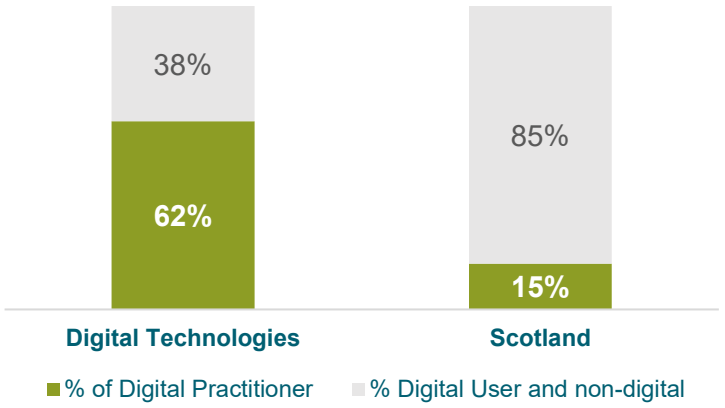
Recognising that digital skills permeate roles across all sectors and are no longer confined to traditional technology roles, SDS has undertaken research to define Scotland's Digital Economy in 2025, building on the Digital Economy Skills Action Plan.

This definition strengthens the evidence base and ensures SDS and partners can understand the spread of digital jobs across Scotland's key sectors and identify how digital transformation is shaping skills demand, productivity and sectoral growth. More information on this research is available in Appendix 2.

This spotlight focuses on the presence of **Digital Practitioner** roles within the Digital Technologies sector. Digital Practitioners are occupations that utilise technical and professional digital skills, either within the traditional digital sector or integrated into other roles outside the sector. Digital Practitioner roles include occupations like **IT Project Managers, Cyber Security Professionals** and **IT Business Analysts, Architects and Systems Designers.**

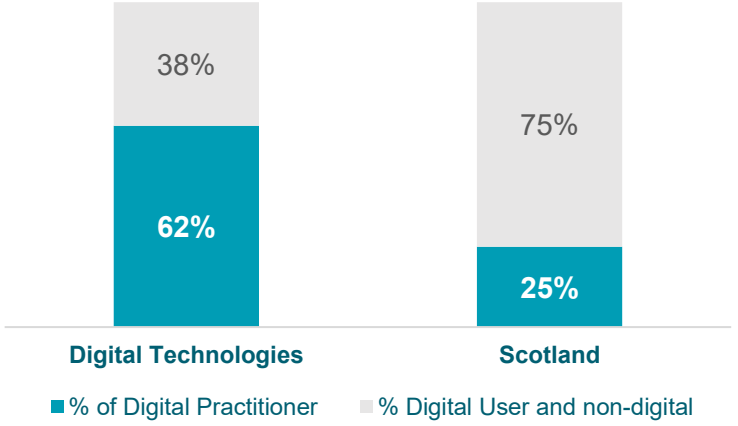
Employment[1]

In 2022, **62%** of people employed in the Digital Technologies sector were employed in Digital Practitioner roles. This was higher than the Scottish average of **15%**.



Gross Value Added (GVA)[2]

Digital Practitioner roles within the Digital Technologies sector make a sizeable contribution to the GVA of the whole sector (**62%** in 2022), higher than the average in Scotland.



Digital Insight for Digital Technologies[3]

Whilst over half of the jobs in the digital technologies sector are Digital Practitioner roles, non-technical jobs and skills are also in strong demand, with sales and marketing talent being the most in-demand skill set.[4]

Despite a slowing down in the digital technology recruitment market, 68% of companies intended to recruit during 2025. Although demand for less experienced new entrant roles seems to have softened, interest in Digital Practitioner-related Graduate Apprentices and retrained individuals remains strong.[5]

Remote working as a recruitment tool continues to be important for Digital Practitioner roles, with 46.5% of Scottish digital technology businesses offering permanent remote working compared with an economy wide average of 12.8%.[6]

1. SDS analysis of Lightcast Labour Market Data (2022, accessed in 2024).
2. SDS analysis of Annual Business Survey Data (2022, published in 2024).
3. Insight from the sector gathered via Skills Development Scotland (2025).
4. Scottish Technology Industry Survey (2025).
5. Scottish Technology Industry Survey (2025).
6. BICS Weighted Scotland Estimates: Wave 127 (2025).

Future Demand: Mid-term (2025-2028)[1]

In the mid-term (2025-2028), **the number of people in employment is forecast to grow by 4.1% (3,600 people)** in the **Digital Technologies** sector. This is a larger percentage growth than is forecast overall across Scotland where employment is anticipated to rise by 2.5% (68,000 people).

By 2028, the regions forecast to have the greatest level of sectoral employment are **Edinburgh, East and Midlothian** and **Glasgow College Region,** the same as in 2025. Between 2025 and 2028, the sector is forecast to see the greatest growth in **Science and Technology Professionals (1,900 people),** followed by **Business and Public Service Professionals (400 people)**.

Forecasts for the mid-term (2025-2028) suggest there could be demand for **5,200 people in the sector**, as a result of the **need to replace workers** leaving the labour market and **opportunities created** through expansion demand. Whilst positive, caution is needed as a wide range of factors may impact the labour market over this period.

Workforce (people), 2028[1]

Workforce size 2028: **91,200** people

The sector's workforce is expected to **grow** by **4.1%** (or **3,600** people) between 2025 and 2028

Compared to a Scotland wide increase of **2.5%** or **68,000** people

Total Requirement[1,2]

Total requirement: **5,200** people

=

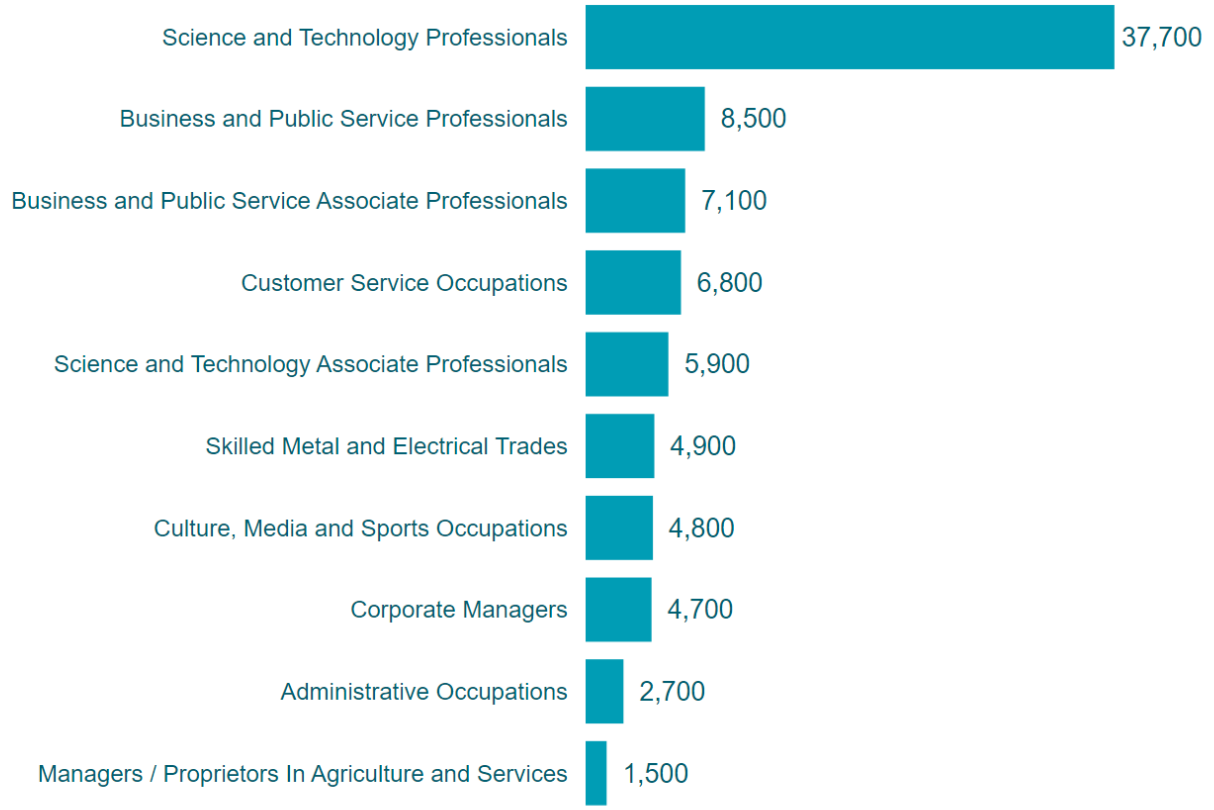
Replacement demand: **1,700** people

+

Expansion demand: **3,600** people

Digital Technologies is forecast to account for **1.3%** of Scotland's total requirement for people in the mid-term (2025-2028)

Top 10 Employing Occupations (people), 2028[1]



1. SDS (2025). Oxford Economics Forecasts.
2.Total requirement for people is made up of expansion and replacement demand.
The expansion demand is the number of people required as a result of economic growth or contraction.
The replacement demand is the number of people required to replace workers leaving the labour market (i.e. those who retire, move away or change jobs). Please note, figures are rounded to the nearest 100 and as a result totals may not equal the sum of the constituent parts.

Future Demand: Long-term (2028-2035)[1]

Employment growth in the **Digital Technologies** sector **is forecast to continue, with an increase of 5.0% (4,600 people)** in the long-term (2028-2035). This is a larger percentage growth than is forecast overall across Scotland where employment is forecast to rise by 4.0% (112,500 people).

By 2035, the regions forecast to have the greatest level of sectoral employment are **Edinburgh, East and Midlothian** and **Glasgow College Region.** Between 2028 and 2035, the greatest growth is forecast to be in **Science and Technology Professionals (3,000 people),** followed by **Corporate Managers (800 people)** in the sector.

Forecasts for the long-term (2028-2035) estimate that **8,200 people** could be required in the sector. This will be driven by **the need to replace workers** leaving the labour market **and the creation of opportunities** through expansion demand. Whilst positive, caution is needed as a wide range of factors may impact the labour market over this period.

Workforce (people), 2035[1]

Workforce size 2035: **95,800** people

The sector's workforce is expected to **grow** by **5.0%** (or **4,600** people) between 2028 and 2035

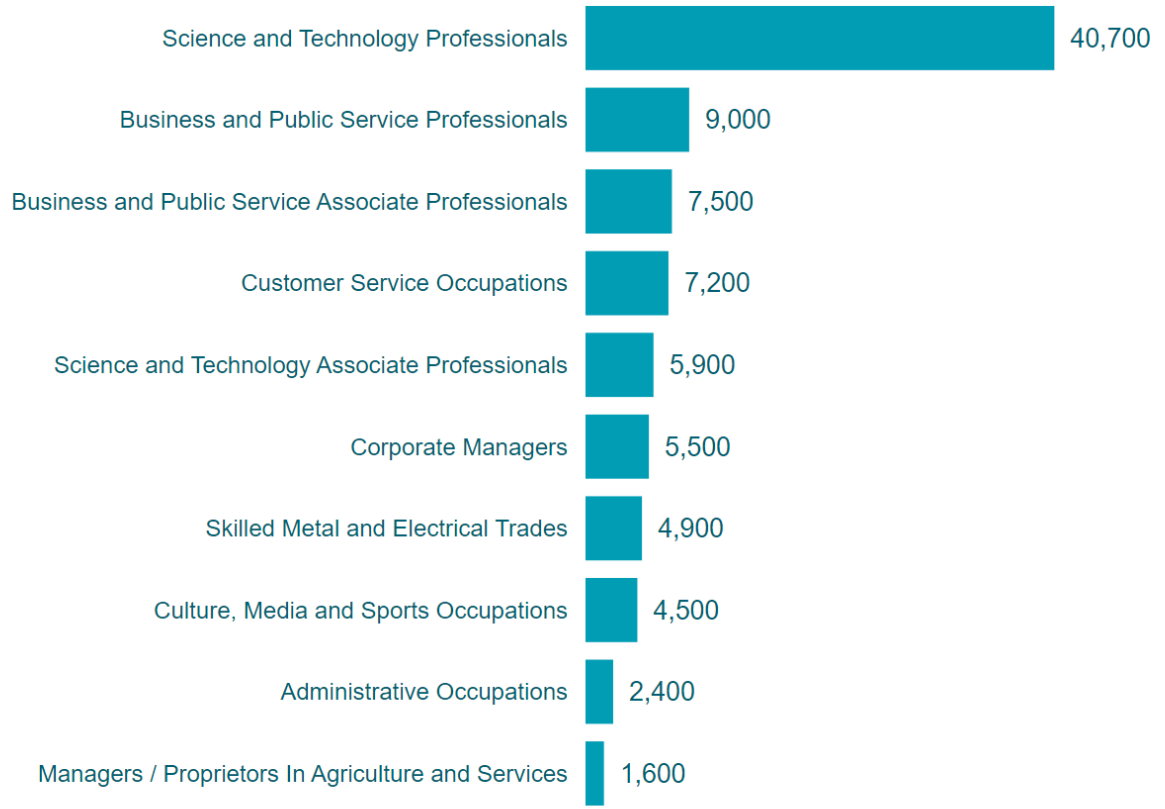
Compared to a Scotland wide increase of **4.0%** or **112,500** people

Total Requirement[1,2]

Total requirement: **8,200** people = **Replacement demand**: **3,600** people + **Expansion demand**: **4,600** people

Digital Technologies is forecast to account for **0.9%** of Scotland's total requirement for people in the long-term (2028-2035)

Top 10 Employing Occupations (people), 2035[1]



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Appendix 1: Digital Technology Sector Definition (SIC 2007)

SIC	Name
18.20/3	Reproduction of computer media
26.11	Manufacture of electronic components
26.12	Manufacture of loaded electronic boards
26.20	Manufacture of computers and peripheral equipment
26.30	Manufacture of communication equipment
26.40	Manufacture of consumer electronics
26.8	Manufacture of magnetic and optical media
27.31	Manufacture of fibre optic cables
58.21	Publishing of computer games
58.29	Other software publishing
61.1	Wired telecommunications activities
61.2	Wireless telecommunications activities
61.3	Satellite telecommunications activities
61.9	Other telecommunications activities
62.01	Computer programming activities
62.02	Computer consultancy activities
62.03	Computer facilities management activities
62.09	Other information technology and computer service activities
63.11	Data processing, hosting and related activities
63.12	Web portals
63.99	Other information service activities n.e.c.
95.11	Repair of computers and peripheral equipment
95.12	Repair of communication equipment

Appendix 2: Digital Economy Definition Research

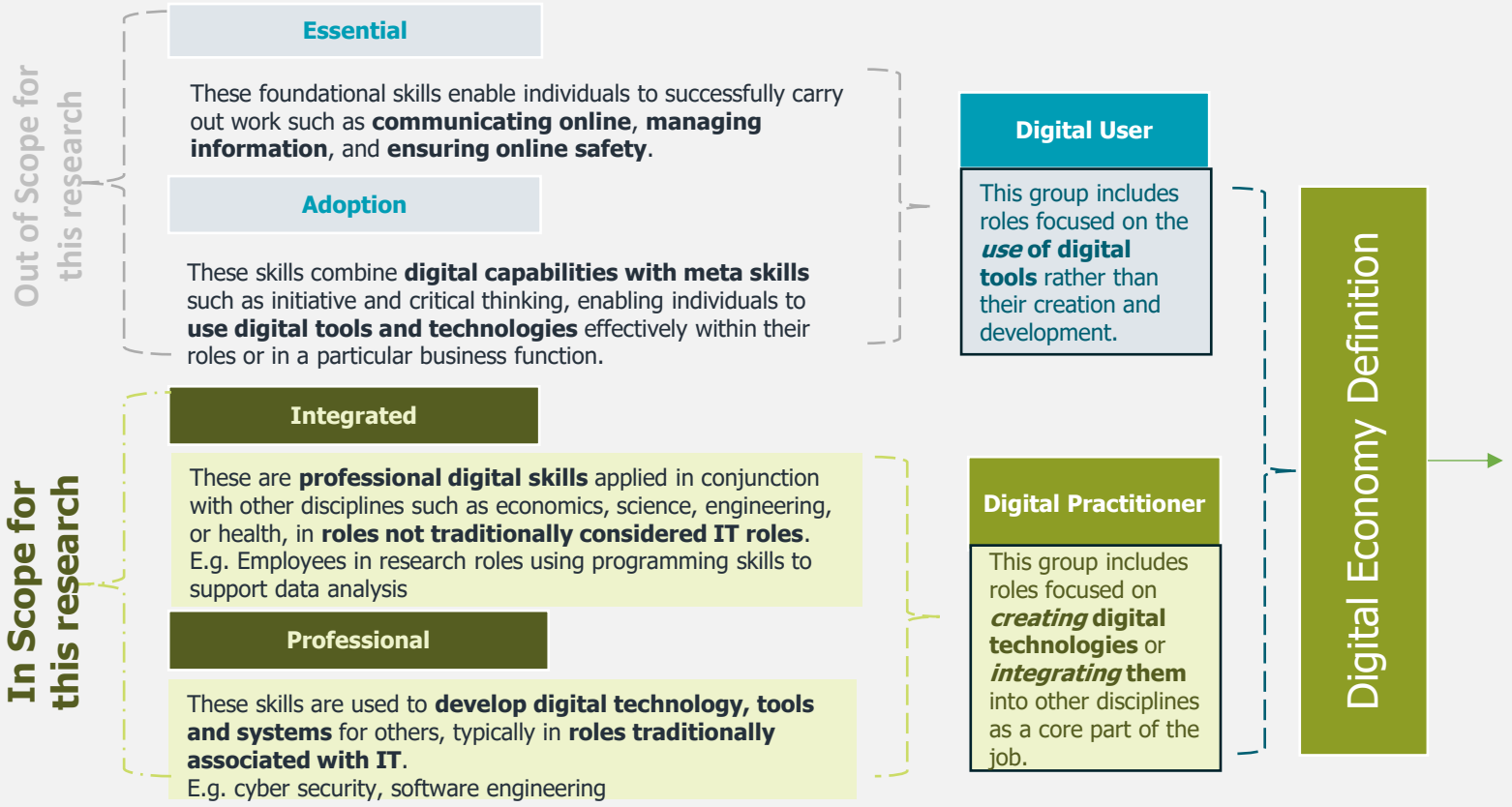
Project Background

In March 2023, SDS released the Digital Economy Skills Action Plan (DESAP), which emphasised the increasing importance of digital skills across all sectors in Scotland. While the Digital Tech Sector is well-defined and focuses on activity related to the production of digital technologies, the DESAP noted a lack of comparable data for the wider Digital Economy (which encompasses all economic activity that is enabled by digital technology) due to an unclear definition. To address this, SDS worked collaboratively with stakeholders to define the Digital Economy with the aim of improving the understanding of related jobs and skills.

Methodology

Following a literature review and stakeholder consultations, a final definition of the digital economy was produced (see below). This was then used to identify jobs (based on SOCs) and skills (from the Lightcast Skill Taxonomy) that were considered part of the Digital Economy. The research focused on Digital Practitioners as a particular area of interest to understand how skills that create or integrate digital technologies are permeating across occupations. This list of Digital Practitioner jobs and skills was then applied to the Scottish Labour Market to assess the economic value of Digital Practitioner jobs in Scotland.

Definition of the Digital Economy



Key Findings for Scotland

Estimated at almost 400,000, Digital Practitioner jobs in Scotland account for **15% of the total workforce**. This is comparable to the size of the Human Health and Social Work sector.

Digital practitioner roles contribute £34.6 billion in GVA to Scotland's economy, which represents around **25% of Scotland's GVA**.

At least **half** of all Digital Practitioner job postings require a **bachelor's degree or equivalent.**

The median advertised salary for Digital Practitioner job postings in Scotland was **£38,627. This was 35% higher than the average median advertised salary across all Scottish job postings.**

Skills Development Scotland

For further information or queries on the SSAs or any of our other products, please contact: **RSA@sds.co.uk**