Summary of Demand from Industry for Skills / Training – November 2021

The SERSF has complied the following information from feedback from industry, industry clusters/associations and data available from the Skills and Labour Market Research Unit (SLMRU) of SOLAS. It is presented for a number of key economic sectors that are of vital economic importance to the region.

In addition to the identified skills shortages / training needs, sectors have an ongoing need for a wide variety of other training which is being met by the various education and training bodies within and outside the region, internal training and private contracted training providers.

ICT Sector – (7,700 employed) per CSO QLF Q3 2021

This sector includes a range of dedicated ICT companies most of which are small to medium in size. Furthermore, most medium to large (>50 employees) have dedicated ICT staff managing the company's ICT requirements internally. The sector has been resilient during the pandemic as the demand for ICT services has remained strong generally. However, some companies exposed to the hospitality and retail sectors have been seriously impacted. There is evidence of significant 'churn' in employment as remote working has created greater mobility of staff.

There is a strong pipeline of ICT graduates from higher education in the South East. However, the demand nationally (and further afield) for these graduates continues to be very strong. ICT skills are considered 'critical skills' which qualifies for employment permits resulting in 3,500 permits issued in Ireland in 2020. Furthermore, the growth or remote working has resulted in higher churn rates of staff within the ICT sector in particular.

Much of the upskilling within the sector is focused upon vendor accredited training which is not captured by the publicly funded education and training providers.

This sector includes a variety of companies broadly categorised as follows:
- Software Development
- ICT Services
- Telecommunications

There is an ongoing need for staff with strong ICT skills in industry as the digitisation of services and the automation of manufacturing continues.

Availability of Graduates

The Higher Education Authority statistics reveal a steady pipeline of graduates (Note 1) in **'Information & Communication Technologies (ICT)** graduating in the South East in recent years.

YEAR	TOTAL GRADUATES NATIONALLY	TOTAL IT CARLOW	TOTAL WIT	TOTAL SOUTH EAST	SOUTH EAST AS % OF NATIONAL
2019/20	2,764	90	125	215	8%
2018/19	2,680	116	94	210	8%
2017/18	2,765	138	130	268	10%
2016/17	2,782	149	160	309	11%
2015/16	2,575	121	155	276	11%

Note 1. Undergraduate honours degrees, ordinary degrees, certs & diplomas awarded in All HEA-Funded Institutions in the Calendar Year by field of study (ISCED): full-time & part-time (including distance and e-learning).

Identified skills shortages and a need to upskill staff in the following disciplines has been identified by employers:

- ➢ Programming Development Methodologies
- ➢ Software Development Technologies
- ➢ Data Analytics
- ➢ Mobile Technology
- ➢ Web Development
- ➢ Cloud Computing
- ➢ Digital Animation
- ➢ Cyber Security
- ➢ Enterprise Applications
- ➢ Digital Marketing
- ➢ Telecoms: Design Engineers, GIS Technicians, Field Surveyors and Project Managers

Roles most in demand within the region include:

- ➢ Software Systems Engineers (eg SAP, Salesforce)
- ➢ Software Development Engineers
- ➢ Software Engineers

There is also demand for the following:

- ➢ ICT Technicians
- ➢ Data Engineers
- ➢ Network Engineers
- ➢ Cyber Security Engineers

Extracts from the National Skills Bulletin 2021

IT Occupations

ICT occupations had both the highest annual average growth over the five-year period compared to all other occupational groups along with the highest growth since 2019. The growth was driven primarily by those employed as programmers and software developers. With over 3,500 new employment permits issued, these occupations had the second highest share in 2020, after healthcare occupations. Supply from the education/training system has been growing steadily over the last number of years, with almost 7,000 graduates emerging from the third level system in 2019.

While some employed in the ICT sector have been in receipt of income support payments since the onset of COVID-19, this does not appear to have impacted those in ICT-specific occupations. As such, the growth seen in recent years is likely to be sustained with potential shortages continuing to occur. With the significant take-up of working from home amongst those in ICT occupations,[3] accessing skills from outside of Ireland without the requirement to be located here, may alleviate some of the issues in sourcing suitably qualified staff.

Occupation	Economic summary
ICT specialist & project managers **Shortage:** **IT product/ project managers**	Employment growth was above the national average for this occupational group over the five-year period, although it was the lowest growth rate across all ICT occupations. New employment permits issued in 2020 related primarily to product/project/program managers. This occupation has been cited as difficult-to-fill by employers in the Skills for Growth data, particularly for those outside the ICT sector (e.g. manufacturing). Although shortages continue to arise for this occupation, the volume is likely to be relatively small compared with the other IT professional roles.
Programmers & software developers **Shortage:** **Software developers/ engineers**	Employment for programmers and developers experienced strong employment growth over the five-year period, with an additional 6,000 persons employed since 2019. Despite the impact of COVID-19 in the economy, demand for these occupations continued to be strong in 2020. Over 1,600 new employment permits were issued and there were frequent mentions in the Recruitment Agency Survey of difficult-to-fill vacancies. They were also frequently cited as difficult-to-fill by employers in the Skills for Growth data notably for those with knowledge of Java. A high volume of vacancies also continued in 2020, with roles primarily in the ICT and professional services sectors, followed by the finance sector. The sustained employment growth, not only in the ICT sector, but across many sectors, along with the rapid pace of change in this occupation, are likely to lead to a continued issue in sourcing suitably qualified and experienced candidates for these roles.
ICT profs. n.e.c. **Shortage:** **IT analysts/ engineers**	Employment fell sharply in 2018, potentially related to changes in the LFS in quarter 3 2017, but recovered strongly in the subsequent years, particularly evident in 2020. There was a high number of new employment permits issued in 2020 (primarily for systems and security analysts/engineers, network engineers and IT architects) and vacancies were frequently mentioned as difficult-to-fill in the Recruitment Agency Survey (e.g. front-end/mobile developers, IT security). A small number of employers cited vacancies for software testers and those with AI/cyber security skills as being difficult-to-fill in the Skills for Growth data. There was also a high volume of online job vacancies for systems analysts and database/network professionals in 2020. The recent employment growth and the evidence of difficulty in sourcing suitably qualified and experienced candidates suggests that shortages are occurring and are likely to persist for these roles.
IT technicians **Shortage:** **IT technicians with foreign languages**	Although employment grew above the national average over the five-year period for IT technicians, the growth since 2019 was the lowest across all ICT occupations. Over 100 new employment permits were issued in 2020, primarily related to technical support. There was a small number of mentions in the Recruitment Agency Survey, relating to technical support roles with languages (such as German and French). Although shortages are occurring for this occupation, they are likely to be smaller in number and specific to those working in the ICT sector and with foreign languages.

*For detailed table see Appendix A

[38] https://www.solas.ie/f/70398/x/0313655eeb/summer-skills-bulletin-2021.pdf

Information and communications (ICT)

Employment Q4 2020	% share of total employment Q4 2020	Sub-Sectors	% growth Q4 2019-2020	% growth Q4 2015-2020
139,400	6.1%	63% - computer programming 16% - telecommunications 8% - information service activities Remainder includes broadcasting, publishing & motion picture production	9%	34%

Compared to other economic sectors, the nature of tasks associated with work in the ICT sector allowed much of the activity to be carried out remotely. At 9%, ICT had the highest growth rate of all economic sectors between quarter 4 2019 and quarter 4 2020. The strongest employment growth was in the telecommunications segment, where there was a 31% increase (or 5,100 additional workers). There were also an additional 4,700 persons working in the computer programming segment when compared to one year earlier.

9.3 Recruitment Agency Survey (October 2020)

The SLMRU in SOLAS conducts a recruitment agency to gather recruitment agencies' views on vacancies which in their experience are proving difficult-to-fill. Table 9.1 refers to the roles that were most frequently identified as difficult-to-fill when agencies were surveyed in October 2020.

Table 9.1 Summary of main job titles identified as difficult-to-fill, October 2020

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	— Software developers: web, Python, UX/UI, cloud (AZURE/AWS), mobile, full stack, front end, back end, JavaScript, Scala, react, angular JS, C++, .Net, PHP, Ruby on Rails, Hadoop — IT engineers (automation, DevOps, data, test, security, Blockchain) — Other IT: data architects, data scientists, big data analysts (e.g. Hadoop, Pig, Cassandra, SQL), IT project managers, solution payment architects

10.2 ICT Occupations

Overall employment: approximately 98,300 persons (80% male) were employed in the selected ICT occupations, representing 4.3% of the national workforce.

- — **Sector**: 62% of overall employment was concentrated in the ICT sector, with a further 11% employed in industry and 6% in financial activities
- — **Employment growth (5-year)**: between 2015 and 2020, overall employment increased by 30,200 (7.6% on average annually compared to 2.2% nationally). The strongest rate of employment growth was observed for ICT professionals n.e.c. (10.8%) during the period
- — **Age**: the 25-54 year age group accounted for the majority of persons employed, at 89%. The share of workers aged 55 and over was 7%, well below the national average of 19%
- — **Education**: the share who had attained third level qualifications (89%) was significantly above the national average share (51%), while a further 9% had attained a higher secondary/FET qualification
- — **Full-time/part-time**: of those employed in ICT occupations, 96% were in full-time positions
- — **Nationality**: the share of non-Irish workers was double that of the national average of 17%, while 65% of workers were Irish nationals.

Numbers employed, 2020 (annual average)
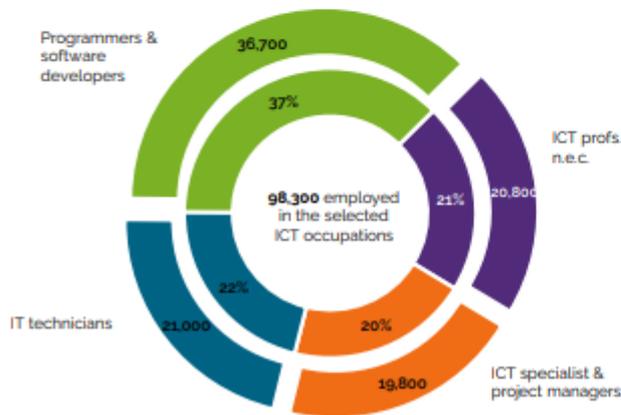
Average growth rates (%) 2015-2020
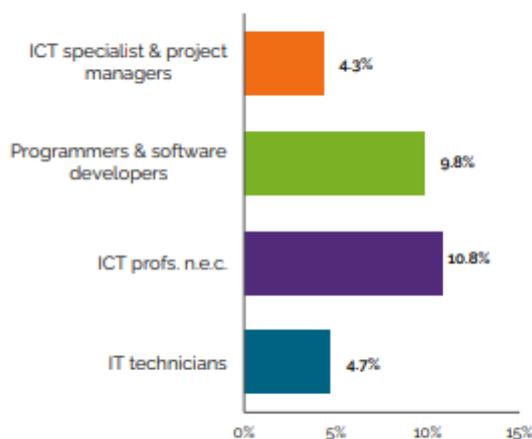
Between 2015 and 2020, overall employment increased by 30,200 (7.6% on average annually compared to 2.2% nationally).

Source: SLMRU (SOLAS) analysis of CSO data

The National Skills bulletin 2021 is available here.