

Ireland's Strategies for Digital Skills Development

Dr Alan Power Department of Enterprise, Trade and Employment 29th October 2021



- (ICT Skills Action Plan process)
- 2017-2026 (2017)
- Plan, National Recovery and Resilience Plan, 2021)

Overview of presentation

More longstanding focus of Irish policy- development of High level ICT or advanced digital skills

• Recognition of importance of digital literacy or less advanced digital skills in policy, including as part of workforce development (National Digital Strategy- 2013, Future Jobs Ireland- 2019)

Development of Digital Strategy for Schools (2015) and STEM Education Policy Statement,

• Integral role of digital skills development in recovery from the Pandemic (Economic Recovery)

• Publication of Adult Literacy for Life, Artificial Intelligence Strategy, AI- Here for Good (2021)





ICT Skills Action Plan process, 2012-present

- As Roiro Pos, Fontar apo Nuklaiochia Department of Jobs, Exterprise and Svenami **ICT Action Plan** ICT SKILLS 2014 - 2018 Hish Software Association Technology Skills 2022 reland's Third ICT Skills Action Plan
- ICT Skills central to Irish economy
- Irish enterprise policy strongly oriented towards knowledge intensive industries.
- Demand for STEM related skills and qualifications- including higher level ICT skills- at range of levels across different sectors of the economy
- Reflected in establishment of ICT Skills Action Plan process in 2012
- Skills for designing, building and implementing high level ICT systems
- High Level ICT skills defined as Computer, Electrical/Electronic engineering skills, at NFQ L6/7, 8+





ICT Skills Forecast studies, 2012, 2013, 2019 (Expert Group on Future Skills Needs)



- Determine demand for High Level ICT Skills in Ireland over subsequent years in broad ICT sector and across other sectors of economy
- Provide robust evidence base- allow for education and training system to address High Level ICT skills needs of enterprise base through matching supply measures
- Develop 5 year skills demand scenarios, informed by Census occupational data, other relevant trends
- Also extensive consultation with enterprises, key informants, steering group of key private and public sector ICT skills stakeholders
- Research provides insights on key emerging technologies, expected demand trends, challenges in acquiring skills, hiring sources





Technology Skills 2022- Ireland's Third ICT Skills Action Plan

Table 2: Keep Running to Win — Demand for High-Level ICT Skills by Sector, 2016–2022

								CAGR	
	2016	2017	2018	2019	2020	2021	2022	2017-22	
Broad ICT sector	58,588	63,570	68,940	75,070	82,140	90,070	98,980	9.3%	
Other sectors	26,927	28,820	30,640	32,660	34,920	37,420	40,160	6.9%	
Total	85,515	92,390	99,580	107,730	117,060	127,490	139,140	8.5%	

Note: 2016 numbers include vacancies. Source: IDC, 2018

Table 3: Keep Running to Win — Demand for High-Level ICT Skills by Type, 2016–2022

	2016	2017	2018	2019	2020	2021	2022	CAGR 2017-22
Computing	68,970	74,820	81,220	88,530	96,940	106,340	116,870	9.3%
Electronic and electrical engineering	16,545	17,570	18,360	19,200	20,120	21,150	22,270	4.9%
Total	85,515	92,390	99,580	107,730	117,060	127,490	139,140	8.5%

Note: 2016 numbers include vacancies. Source: IDC, 2018

Table 4: Keep Running to Win — Demand for High-Level Computing Skills by NFQ Level, 2016–2022

	High-Level ICT Skills Demand — COMPUTING by NFQ Level								
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-	2016	2017	2018	2019	2020	2021	2022	2017-22	
Level 6/7	12,805	13,530	14,350	15,280	16,330	17,470	18,710	6.7%	
Level 8+	56,165	61,290	66,870	73,250	80,610	88,870	98,160	9.9%	
Total	68,970	74,820	81,220	88,530	96,940	106,340	116,870	9.3%	

Note: 2016 numbers include vacancies. Source: IDC, 2018

Table 5: Keep Running to Win — Demand for High-Level Electronic and Electrical Engineering Skills by NFQ Level, 2016-2022

	High-Level ICT Skills Demand — ELECTRICAL ENGINEERING by NFQ Level									
	2016	2017	2018	2019	2020	2021	2022	2017-22		
Level 6/7	3,714	3,930	4,090	4,260	4,450	4,660	4,880	4.4%		
Level 8+	12,831	13,640	14,270	14,940	15,670	16,490	17,390	5.0%		
Total	16,545	17,570	18,360	19,200	20,120	21,150	22,270	4.9%		

Note: 2016 numbers include vacancies. Source: IDC, 2018



- Grow output of high level ICT graduates by 5,000 by 2022
- Expansion of provision in Higher Education
- New Further Education and Training reskilling routes into ICT roles
- Promotion of ICT apprenticeships
- Expansion of in-company training provision
- Measures to attract international talent





Doing More with Digital- National Digital Strategy for Ireland (2013)



- first time
- 0

- for citizens
- opportunities

Aimed to help Ireland reap the full rewards of a digitally enabled society, to create jobs and improve productivity, service delivery and quality of life

Objective to support 10,000 Irish businesses trading online for the

Development of trading online voucher scheme, Winning with Web Awareness scheme

• Support for digital enterprise development by providing skills base,

research capacity and key financial supports

• Halve the number of 'non-liners' by 2016

 Instigate awareness raising campaign with industry stakeholders, to convey to non-liners what they could do online, highlight to existing users other ways they could use and benefit from digital engagement o Introduction of new training grants scheme to fund digital skills training

• Development of online mapping resource to identify digital skill learning





Digital Strategy for Schools, 2015-2020



Achievements

- Promotion of digital literacy in Junior Cycle Framework and through statements of learning Skills related to digital literacy featuring strongly in discussions on future provision in
- ongoing reviews of Primary and Senior Cycle curricula
- Introduction of Computer Science as Leaving Certificate subject
- All schools supported in developing a Digital Learning Plan, and how best to embed the use of digital technologies in teaching and learning
- Incorporation of Digital Skills as one of 7 core elements in Teaching Council standards for **Initial Teacher Education**
- Effective use of digital technologies in teaching, learning and assessment an integral part 0 of all State funded CPD programmes and supports

Deliverable under 2013 National Digital Strategy, to utilise ICT to its full potential across the education system, including the use of the internet in learning • Supported by ICT infrastructure grants, Schools Broadband programme

• All new and revised curricular specifications include development of digital learning skills and use of digital technologies as resource in achieving specific outcomes





2026



- STEM talent
- **Ambitious targets:**
- Ο across all subjects
- 0 subjects
- Ο
- Ο Science for leaving certificate
- Ο diversity of STEM careers

STEM Education Policy Statement, 2017-

31.5 STEM graduates per 1,000 (aged 20-29)- highest in OECD Policy aimed at making Ireland a leader in nurturing, developing and deploying

Enhance STEM teaching, learning, assessment practices in early years settings,

Introduction of cross disciplinary approach to incorporating STEM across all

Increase students taking STEM subjects for Leaving Certificate 20%, females +40% Introduction of new primary maths curriculum (+creative and computational thinking) and coding), new Junior cycle Mathematics and Technology curricula, Computer

Ensure all schools, learners, parents have access to high quality information on

 Build robust, sustainable partnerships between schools, business and industry, public sector bodies, research orgs, FE, HE institutions







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Rialtas na hÉireann Government of Ireland

Supported by the Department of Education and Skills

Explore Careers That Let You Do What You Love!

Choosing subjects to study in school and courses to do at third level can be tricky and figuring out what career you want to do can be overwhelming.

Here at Smart Futures, we want to help you discover the STEM subjects and careers that might be right for you. You have the opportunity to discover what types of STEM careers are available to you and hear from people who work in STEM related jobs in Ireland. You will see the wide range of careers available, discover people who are working in STEM, the organisations they're working in and also there are resources for parents, teachers and students in our Explore and Discover section.

- Coordinated and managed by Science Foundation Ireland- partners with 200+ organisations from research and academia, and industry stakeholder groups, including through school/student outreach activity
- Includes portal (<u>www.smartfutures.ie</u>) that aims to provide STEM career resources to students, teachers, guidance counsellors, parents, and stimulate interest in STEM subjects in second and third level
- STEM strategy driven by STEM Implementation Group- Government departments, Science
 Foundation Ireland, Science and Engineering
 teachers' association, Schools Inspectorate





Future Jobs Ireland (2019) and embedding of workforce digital skills development



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All of government plan to prepare Irish economy for key structural shifts- twin transitions of decarbonisation and digital transformation To drive digitalisation, two key pillars: Embracing innovation and technological

change, and Increasing SME productivity

Actions included:

Forming 'Top Teams' in AI, GovTech, to progress areas of opportunity for

Embracing digital transformation of public services and further developing eHealth opportunities;

Developing Ireland as a centre for developing and testing new technologies (Cobotics, AR/VR, Micro and nano-electronics, photonics, IoT)

Delivery of Industry 4.0 strategy

Encouragement for enterprises to exploit technology and business process improvements to increase productivity (including in Construction, Retail)

Increase share of population with at least basic digital skills (2017 baseline of 48%), ambition to double lifelong learning rate





Future Jobs Ireland Digital Skills Interventions

- emerging skills needs (Springboard+, Skillnet Ireland, Human Capital Initiative)
- Also establishment of Science Foundation Ireland Centres for Research Training for PhD and Masters students
- proportion of employees with low levels of literacy, numeracy, digital skills
- Targets persons over 35 employed in manufacturing, hospitality, transport and logistics sectors
- key issue of skills obsolescence.

Leveraging of Ireland's sophisticated and responsive skills architecture, to ensure provision is aligned with

Skills to Advance: Lifelong Learning policy (2018-2021) involving targeted support for vulnerable groups in Irish workforce, particularly those with lower skills levels (target: 40,000 workers to be engaging in upskilling by 2021). Support to allow them access up/reskilling opportunities to sustain their employment. Points to significant

EXPLORE programme- aims to address issue of Ireland's low level of participation in workforce lifelong learning. Through one to one coaching, digital skills focussed projects, access to relevant training- aims to address the lack of digital skills, provide a novel approach to overcome barriers to participation in lifelong learning, and address the





Economic Recovery Plan/ National Recovery and Resilience Plan



- Pandemic has served to accelerate existing structural shifts, in particular around digital transformation (e.g. remote working, e-commerce)
- Overarching ambition to have 2.5m in work by 2024, through helping people back into work, rebuilding sustainable enterprises, and a balanced and inclusive recovery
- Commitment to new cross Government digital strategy 0
- €85m grants scheme to support business digitalisation and establishment of European Ο **Digital Innovation Hubs**
- Roll out of eHealth initiatives and development of Shared Government Data Centre to support Government Service Digitalisation
- Using 5G technologies to enhance connectivity and service provision Ο
- Ο connectivity
- Ο

Driving digital transformation central to this ambition:

Provision of digital infrastructure and funding to schools for high speed broadband

Funding for ICT Skills Action Plan, Digital Strategy for Schools, Laptops for disadvantaged students in Further and Higher Education





Rialtas na bEireans ADULT LITERACY FOR LIFE SITAL LITERACY STRATEGY Literacy or Life

Adult Literacy for Life- 10 Year Adult Literacy, Numeracy and Digital Literacy Strategy (2021)

- Implementation of strategy also funded under NRRP, to support wider social inclusion, labour market integration and wellbeing
- eGovernment and digital strategies aiming to make public services more efficient and accessible, and strong digital economies seen as a competitive advantage going forward
- Recognises how many still lack the reading, writing, numeracy and communication skills to perform essential daily tasks to fully participate in society

To be driven by Cross Government Implementation Group, with multistakeholder National and Regional Literacy Coalitions sharing expertise on literacy supports and interventions, an online one stop shop for all relevant literacy information and advice

- Also funding for access to technology and devices, for expansion of literacy support in the workplace, community access to Wifi and broadband resources and expansion of investment in both formal and non-formal digital skills provision
- Aims to decrease the share of adults in Ireland without basic digital skills from 47% to 20%







Al-Here for Good



- Vision for Ireland to be international leader in adoption and use
- Aims to:
- Build public trust through effective safeguards Assisting employers to expand and demystifying AI (including appointment of AI workplace focused AI upskilling and ambassador) reskilling
- Leveraging AI for higher productivity and better public service outcomes
- Putting the building blocks in place-i.e. strong innovation ecosystem, secure data, digital and connectivity infrastructure, and workforce prepared for Al

using AI to benefit population, through people centred, ethical approach to AI development,

AI Education, Skills and Talent actions

- EGFSN review of skills implications over next 5-10 years
- Encouraging HEIs to take a coordinated approach to delivering AI education and training

- Considering how AI can be incorporated into future policy for digital learning
- Reviewing employment permit criteria for AI related skills
- Development of action plan to increase female participation in AI careers

