QUEEN'S UNIVERSITY BELFAST | **CSIT** CENTRE FOR SECURE INFORMATION TECHNOLOGIES

Perspective Economics

NORTHERN IRELAND CYBER SECURITY SNAPSHOT

CENTRE FOR SECURE INFORMATION TECHNOLOGIES (CSIT)

APRIL 2023

FOREWORD

The Centre of Secure Information Technologies (CSIT) is the UK's Innovation and Knowledge Centre (IKC) for cyber security, delivered in collaboration with Innovate UK, the Engineering and Physical Sciences Research Council (EPSRC) and Invest Northern Ireland. CSIT is committed to world class research in and accelerating translation activity for economic impact. The centre also works collaboratively with the National Cyber Security Centre (NCSC), ensuring that the UK is the safest place to live and work online.

In February 2023, CSIT secured an £18.9m investment in the region's cyber security ecosystem, including £11 million UK Government funding through the New Deal for Northern Ireland, to help develop a pipeline of cyber security professionals in NI and provide collaborative research and development opportunities with industry through the creation of a Cyber-AI Hub. This is also supported by £3.3m of funding from the EPSRC, to deliver the third phase of CSIT's IKC programme, focused on **"Securing Complex Systems"** cementing its position as a world-leading centre for research and innovation until 2027.

We are delighted that CYBERUK 2023 is hosted in our home city of Belfast this year. This event is a fantastic opportunity to showcase the cyber security ecosystem in Northern Ireland, to engage with global partners, and to promote knowledge sharing in this area of strategic national importance.

This document provides a short overview of the Northern Ireland cyber security ecosystem. We are an international hotspot for cyber security activity, and our firms deliver products, solutions and services to a broad range of markets including national security, government, health, automotive, critical infrastructure, financial services, legal, e-commerce, e-learning and more.

Cyber security is a success story for this region with over 2,700 related roles generating over £230m direct GVA to the economy We also have big ambitions for growing the sector to 5,000 cyber security professionals by 2030 and look forward to delivering this with industry and strategic partners.

If you would like to hear about future research from the centre, or to explore potential opportunities within Northern Ireland, we would encourage you to reach out to CSIT or one of our partner organisations.
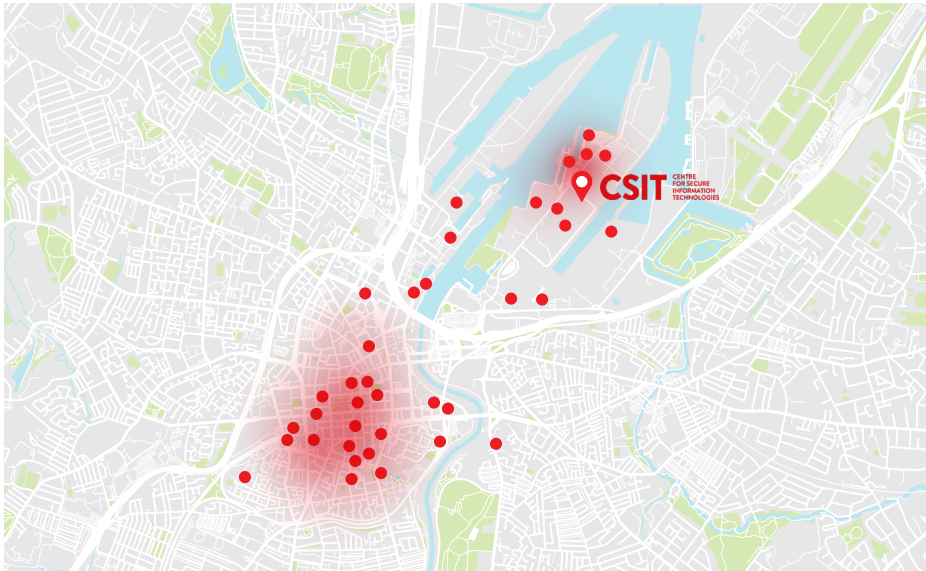
Máire O'Neill

Professor Máire O'Neill
CSIT Director

David Crozier

David Crozier
Head of Strategic
Partnerships & Engagement

NORTHERN IRELAND'S CYBER ECOSYSTEM

● Cyber security businesses and teams

Belfast is one of the world's most concentrated cyber security clusters, with more than 100 cyber security businesses and teams.

Northern Ireland is an attractive location for both inward investors, and indigenous start-ups, spin-outs and scale-ups.

66% of firms are headquartered overseas.

Northern Ireland is the number one global destination for US FDI.

Over 1,700 cyber security jobs in NI are backed by US FDI.

NI also attracts inward investment from Canada, Europe, Japan, Israel, and the wider UK and Ireland.

34% of cyber security firms are locally founded.

Over £43m raised by Northern Ireland cyber security firms in VC investment since 2018.

ANGOKA

is an IoT security company, focused on smart cities, mobility, and securing Critical National Infrastructure. It has raised over £3m in external investment and secured over £3m in R&D grants.

SKURIO

provides digital risk protection services, such as intelligence and risk assessment through social and dark web analytics. They have raised over £8m in external investment.

Northern Ireland's cyber security ecosystem is globally renowned for several reasons:

● Significant technical and engineering expertise, with recognised strengths in six key areas (next page)

● International hub for cyber security research and innovation, underpinned by CSIT.

● An attractive location for inward investment, with partnerships between academia, government and industry – and access to talent across Belfast, Derry-Londonderry and beyond.

● A growing ecosystem of locally headquartered firms with global reach, supported by leading cluster network 'NI Cyber'.

124
Cyber Security Providers[1]

Supports over £230m
direct GVA to the NI economy

2,700+
Employees (2023)[2]

£53,000
Average advertised salary (2022)[3]

Target: 5,000+
employees by 2030

[1] There are 124 businesses with a cyber security team in Northern Ireland. We estimate that 46 of these are 'dedicated 'or 'pure-play, where all of the firm's activity is cyber security related. 78 of these are 'diversified', where we have identified a cyber security team undertaking commercial or R&D activity, but the wider business may offer broader services such as professional services, aerospace and defence, or finance.'

[2] 2,700 Full-Time Equivalents (FTEs) working in cyber security related roles.

[3] Source: Perspective Economics analysis of job vacancy data using the Lightcast platform.

Identification, Authentication and Access Control

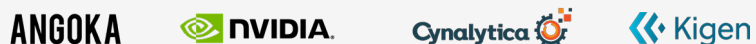## Risk, Compliance and Fraud

Securing Applications, Networks & Cloud

Threat Intelligence, Monitoring, Detection and Analysis

Operational Technology (OT) Security & Connected Devices

Managed Security Service Provision (MSSPs) & Advisory

CSIT
CENTRE FOR SECURE INFORMATION TECHNOLOGIES

WORLD-CLASS RESEARCH AND EDUCATION

CSIT is the UK's Innovation and Knowledge Centre for cyber security. Its mission is to couple major research breakthroughs in the field of secure information technologies with a unique model of innovation and commercialisation to drive economic and societal impact. CSIT brings together expertise in academic research, and applies this through its extensive business engagement and engineering activity. CSIT has also been recognised by the NCSC for the high quality of its research and education activity, holding both Academic Centre of Excellence in Cyber Security Research (ACE-CSR) and Academic Centre of Excellent in Cyber Security Education (ACE-CSE) recognition. Further, the Queen's University Belfast MSc in Applied Cyber Security has also been recognised as an NCSC-certified degree programme.

CSIT plays a key role in the development of the cyber security ecosystem, through:

Supporting a **sustainable talent pipeline**

Strengthening **academic-industry relationships**

Promoting **NI as a cyber security destination for R&D**

£18.9m Cyber-AI Hub

- Eight R&D industry projects on AI-enabled cyber security
- CSIT doctoral training for 15 PhD candidates over three years
- NICYBER2025 Masters Bursaries for 40 students in Cyber and AI
- An annual NI Cyber Security Snapshot to 2025

Northern Ireland is renowned for its talent in cyber security, software development, and engineering skills. This is driven by the role of Queen's University Belfast, Ulster University, the Open University, and Belfast Met.

Northern Ireland's Department for the Economy (DfE) has highlighted **cyber security** as a priority area for growing the region's economy in its 10x Strategy. It supports Assured Skills Academies (demand-led, pre-employment training programmes) in cyber security alongside employers such as KPMG, Deloitte, and Microsoft - with Belfast Met providing training through a bespoke cyber academy.

DfE, with funding from Northern Ireland Office and the Department of Finance is also offering 7,000 free further education and training opportunities through its Skill Up Initiative.

The NCSC CyberFirst Schools and Colleges Programme Inspires and encourages young people to develop their skills and explore opportunities in cyber.

3,000+
students supported to date

Target: 40 Schools
Ambition to have 40 CyberFirst schools in NI by 2025

SUPPORTING INDUSTRY AND WORKING WITH PARTNERS

Industry engagement is at the heart of CSIT. Its unique membership model has supported advisory and industrial collaborations with global partners including Allstate, BAE Systems, Cisco, Citi, Direct Line, First Derivatives, IBM, Infosys, Intel, McAfee, Nvidia, Qualcomm, Rolls Royce, Roke, Seagate and Thales.

CSIT has strong partnerships with:

NI CYBER

NI Cyber connects all those working in Northern Ireland's globally recognised, vibrant cyber security sector. As the region's cyber security cluster, NI Cyber promotes collaboration for business, innovation, skills development and peer-to-peer learning at every level, and represents the sector regionally, nationally and internationally.

Members represent the diversity of the sector including innovative start-ups, SMEs and multinational corporations delivering products and services globally, academic research, education and skills partners; and government.

In 2021, Plexal launched Cyber Runway, an accelerator programme to support the growth of at least 160 cyber entrepreneurs, startups, SMEs and scaleups across the UK, including in Northern Ireland. This programme is backed by the Department for Science, Innovation and Technology (DSIT), and is delivered in partnership with CyLon, Deloitte and CSIT. Participants benefit from CSIT engineering support, access to data and testing, and technical product development support.

GLOBAL EPIC

In 2017, CSIT co-founded the international Ecosystem of Ecosystems Partnership in Innovation and Cyber Security (Global EPIC), which now has 30 hubs globally, and launched a global soft landing programme enabling trade and investment opportunities for UK cyber security companies.

SOURCES & METHODOLOGY

This document has been produced by the Centre for Secure Information Technologies (CSIT) and Perspective Economics, authored by David Crozier (CSIT), Sam Donaldson, and Conor Tinnelly (PE). It provides a basic overview of the NI Cyber Security Sector. A full NI Cyber Security Snapshot (2023) will be published in mid-2023, updating the previous 2021 snapshot (available via the QR code.)

Sources Include:

- DSIT Cyber Security Sectoral Analysis (2023) – NI level data

- DSIT Cyber Skills in the UK Labour Market (2023)

- CSIT NI Cyber Snapshot (2021, and upcoming 2023)

- Invest NI: Northern Ireland, A Global Cyber Security Hub

Scan to View

NI Cyber Security
Snapshot (2021)

Sector Specialism	Definitions
Identification, Authentication and Access Control	Systems designed to support the verification of users accessing systems.
Risk, Compliance and Fraud	Solutions to identifying risk (such as harmful actors or anomalies), ensuring compliance with cyber security standards.
Securing Applications, Networks & Cloud	Customisable solutions for identifying and patching potential software or network exploits or applying secure parameters to network or cloud
Threat Intelligence, Monitoring, Detection and Analysis	Information security professional services focusing on network administration or network engineering, that helps counter the activities of cyber criminals such as hackers and developers of malicious software.
Operational Technology (OT) Security & Connected	Manufacture and distribution of programmable systems or devices that interact with the physical environment (or manage devices that interact with the physical environment).
Managed Security Service Provision (MSSPs) & Advisory	Outsourced cyber security solutions focused on monitoring, network security, patching and remote device management, penetration testing, and wider security and IT advice

SECURING COMPLEX SYSTEMS

Centre for Secure Information Technologies (CSIT)
ECIT Institute
Belfast
BT3 9DT
Telephone: 028 9097 1700
Website: http://go.qub.ac.uk/csit
Twitter: @CSIT_QUB

UK Government
Northern Ireland

Invest
Northern Ireland

UKRI
Delivered by
Innovate UK
and EPSRC