

Northern Ireland FinTech ECOSYSTEM REPORT 2020



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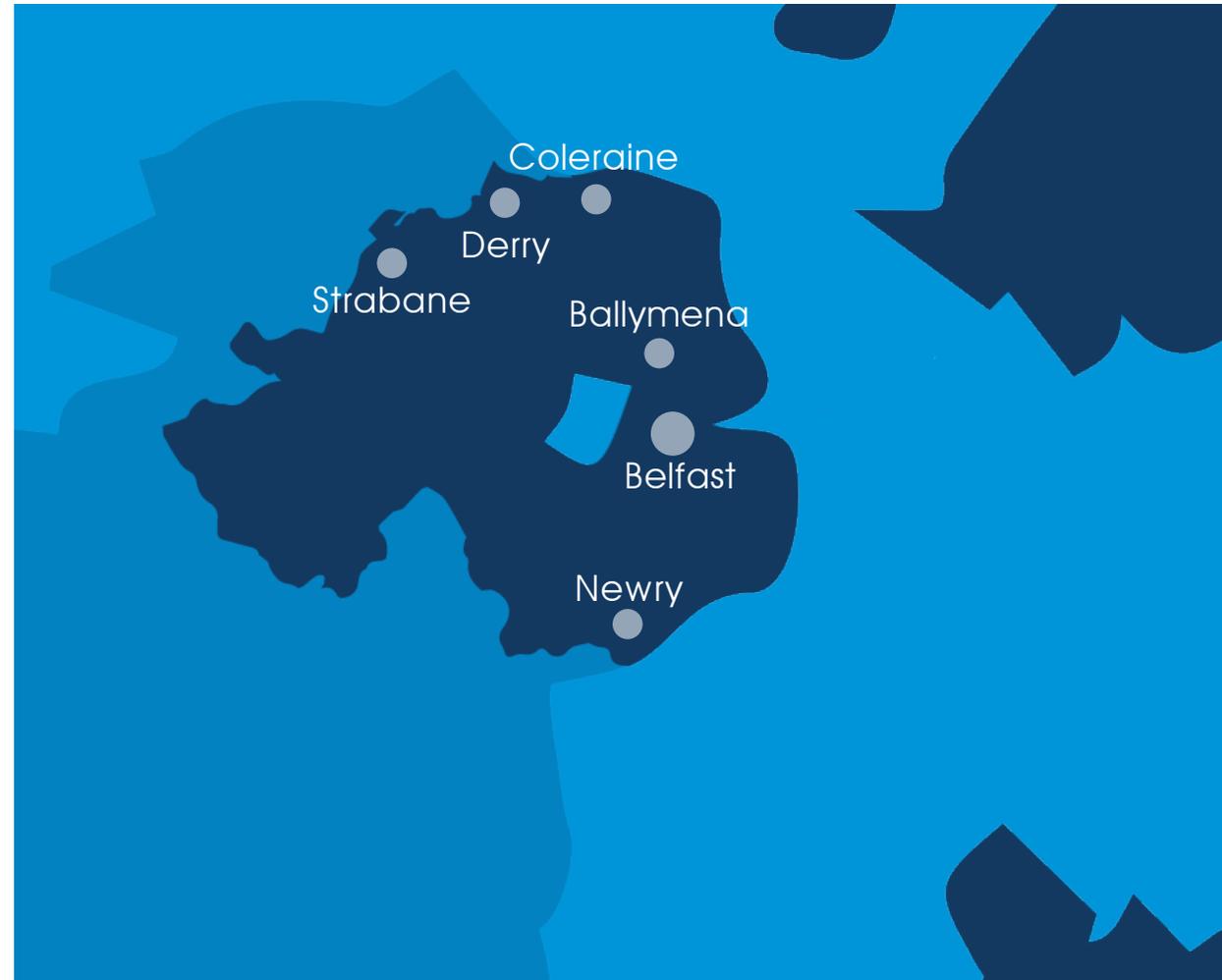


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Table of contents

Northern Ireland FinTech Ecosystem Summary	2
Forewords	5
FinTechNI	6
Innovate Finance	7
Invest NI	8
Fintech Envoy For Northern Ireland, Andrew Jenkins	9
Northern Ireland Fintech Ecosystem Research 2020	11
Definitions & Methodology	12
Overview - Northern Ireland Fintech Ecosystem	13
Future Potential - Northern Ireland Fintech Ecosystem	15
Findings & Recommendations	18
Availability Of Talent	21
CASE STUDY: Aflac Northern Ireland	23
Strength Of The Overall Financial Sector	25
CASE STUDY: Allstate Northern Ireland	26
Strength Of The Overall Tech Sector	28
CASE STUDY: Automated Intelligence	29
CASE STUDY: Datactics	31
Strength Of FinTech Startup/Scaleup Community	32
CASE STUDY: ESTHER	33
Relationship Between Startup/Scaleups & Established Financial Sector	35
CASE STUDY: Danske Bank	36
Funding For FinTech	39
Physical Spaces/Hubs	41
Interaction & Communication Between Key Players	44
CASE STUDY: FinTechNI	45
Education Sector	48
CASE STUDY: Ulster University	49
Participating Organisations	51
Whitecap Consulting	52



Thank you to the organisations who have supported this research:



NORTHERN IRELAND FINTECH ECOSYSTEM - SUMMARY

Northern Ireland FinTech Ecosystem summary

Northern Ireland

1,881,600
population

875,000
workforce

36,746
people working
in FS or Tech

2,915
FS & Tech firms

55,755
students

3 Universities
6 Colleges

£19.69bn
GVA

1.3%
of UK GVA

FinTech sector

74 firms

36% established FS/
FinTech firms

41% Tech
firms

23% startups &
scaleups

97%
people working
in established
organisations

7,000
estimated FinTech
related roles

£391.4m
GVA (estimated)

3.6%
of UK FinTech GVA

FinTech startups & scaleups

17 firms,
employing
211 people

94% B2B

18% B2C

(Adjusted for those offering
B2B & B2C propositions)

43yrs
average age
of founders

9 yrs
average age
of firms

87%
have main office
in the region

47%
are startups

Northern Ireland FinTech highlights

1. Highest concentration of FinTech employment in UK (1 in 5 people working across FS and Tech in Northern Ireland is working in FinTech).
2. Core strength in RegTech & compliance, TradingTech, InsureTech, cybersecurity, and AI & Advanced Analytics.
3. Northern Ireland was ranked as the third global FinTech location for the future in 2019/20, and Belfast's has been named the world's number one destination globally for FinTech development investment projects.
4. FinTech Northern Ireland was created in 2018 to foster collaboration locally and nationally, and promote Northern Ireland as a leading FinTech hub.
5. Andrew Jenkins was appointed HM Treasury FinTech Envoy in 2019.
6. Three of the Tech Nation FinTech 3.0 cohort announced in September 2020 are from Northern Ireland, more than any other UK region outside London.
7. Ulster University was the first university in the UK to launch a degree-level FinTech apprenticeship course.
8. FinTech in Northern Ireland generates proportionally 2.5 - 5 x more of GVA than in other regions Whitecap has analysed.
9. The sector is growing, with 68% of organisations surveyed planning to hire into FinTech roles within 6 months.

Northern Ireland highlights

1. Northern Ireland has a unique geographical position – part of UK, direct border to EU, strong trading links with US.
2. Operating costs are 20-30% lower than the rest of the UK and Europe.
3. Property costs are 75% lower than London and 60% lower than Dublin.
4. Belfast, along with Cambridge, was named the UK's most tech centric city by Tech Nation, with 26% of all job vacancies in 2019 in tech and digital.
5. Queen's University Belfast is home to CSIT, the UK's Innovation & Knowledge Centre for cybersecurity.
6. 40,000 employees in financial and professional services, with 1 in 4 in a tech role.
7. Over 80% of professional services employment in Northern Ireland is in the financial sector.
8. Belfast has been named the top city in Europe for new FDI software development projects and is ranked in the top 10 European Tech Cities for the Future.

Northern Ireland FinTech & Support Ecosystem



FOREWORDS



FinTech NI



Alex Lee
Director and Chairman
FinTechNI



David Allister
Director
FinTechNI

We are truly delighted to be able to bring you the 2020 Northern Ireland Fintech Ecosystem Report. Produced independently by our expert research partner, Whitecap Consulting, we believe that this is an important initiative to support the continued growth and prosperity of FinTech in Northern Ireland.

Formed in 2019, FinTechNI is a not for profit industry association made up of a cross section of participants in the local FinTech ecosystem. As such, we rely on the generous investment of time and goodwill from a range of participants who are passionate developing and promoting Northern Ireland as a leading global FinTech hub.

Our mission is to be the independent voice of FinTech in Northern Ireland and to champion and empower participants in the local FinTech ecosystem to be successful on a global stage. We intend to use this report as the basis for developing a strategy and roadmap for how FinTechNI can collaborate with other organisations, both locally and nationally, to achieve this mission.

The report also comes at an important time for the development regional FinTech ecosystems across the UK. With the HM Treasury UK FinTech Strategic Review expected to conclude early in 2021, the findings and recommendations from the report provide us with a clear basis to represent a view of the needs of the FinTech ecosystem here in Northern Ireland.

We have long felt that Northern Ireland possessed some unique technology and talent capabilities that gave it the potential to be a credible global FinTech hub. It is therefore incredibly satisfying to see those capabilities recognised and celebrated in this independent research. In particular,

the world class technology clusters that exist around RegTech and Compliance, TradingTech, InsureTech, CyberSecurity and AI and Advanced Analytics. All of which are at the forefront of driving further digital adoption in the Financial Services industry at present.

We would like to thank the more than 50 individuals from a broad range of organisations within our ecosystem who took the time to engage with us on this research. Your input and feedback are greatly valued and appreciated.

We would also like to thank members of the FinTechNI Advisory Group for their valuable support and guidance over the last 18 months. We hope this research provides the basis for further collaboration and a focus for our efforts going forward.

Finally, we would also like to take this opportunity to make special thanks to our sponsors who made this exercise possible.



Innovate Finance



Charlotte Crosswell
Chief Executive
Innovate Finance

We have been keenly following the evolution of FinTech across the UK and are delighted to see the ecosystem taking shape across Northern Ireland. The region plays a significant role in the UK economy and one which is recognised for developing strong links to the wider tech industry, as well as an increased presence in financial services.

Innovate Finance is the independent industry body that represents and advances the global FinTech community in the UK. Our mission is to accelerate the UK's leading role in the financial services sector by directly supporting the next generation of technology-led innovators. The UK is the global leader in FinTech and over the past decade, the country's position as a trailblazing force in the sector has been growing from strength to strength.

Building on our long-standing financial services pedigree and injecting it with innovative technology, we are witnessing widespread transformation in all areas of financial services. In 2019, the UK FinTech sector retained its role as the top-ranking investment destination in Europe, with venture capital and private equity investment growing 38% year on year to a new record of \$4.9bn. While investment fell 38% to \$1.84 billion in the first half of 2020, global interest in FinTech remains high.

In common with many industries, the pandemic has presented the FinTech sector with significant challenges, but also many opportunities. Innovators and entrepreneurs need a framework that allows them to thrive, so it is vital that we continue to develop and adapt regulation in ways that create the right conditions for FinTech to prosper. To date, the UK is the best place to start and scale a business – and we need to make sure that remains the same for years to come. As we begin to operate in a 'new normal' post-COVID-19, FinTech firms will continue to play a critical role. It is at times like these that we really see the value of their innovative thinking, agility and bravery to try something new.

We are looking forward to hearing recommendations from the major independent review of the UK FinTech sector, announced in the March 2020 budget, and led by Ron Kalifa. Innovate Finance has long been advocating for an in-depth look at the sector and we are confident that this important review will underpin the future growth and prosperity of the sector across the whole of the UK.

By better understanding the needs and key focus areas for the sector, we can boost the industry and in turn support the economy as a whole. This will bring benefits not just in London and the South East, but to those vibrant FinTech hubs

across the UK, such as the one we find in Northern Ireland. Whilst London is acknowledged as the global epicentre in the world of FinTech, other regions of the country play an important role in building a diverse and robust national FinTech ecosystem - from here in Northern Ireland to Scotland and to Wales, to the West, the Midlands, and the North of England. We need to ensure we showcase their success and contribution to in turn drive further growth and attract investment across all areas.

This is why Innovate Finance, along with key partners, established the FinTech National Network: to foster collaboration between national hubs and encourage innovators up and down the country. If we can combine this network with local and central government support, as well as access to patient capital to scale companies, the future of UK FinTech will be even brighter. This will form the basis to engage with overseas markets, ensuring our reputation as a FinTech nation, and enabling us to continue setting the pace for setting the pace for the industry on an increasingly competitive international stage.

INNOVATE | FINANCE

Invest NI



George McKinney
Director Technology & Services
Invest NI



Karen Bradbury
FS Sector Lead
Invest NI

As financial firms and solutions providers seek technology, talent and industry expertise to harness next generation development, Northern Ireland has become a leading global location for FinTech investment. Indeed Belfast, the region's capital city, has recently been ranked third in the FT fDi FinTech Locations of the Future after Singapore and London, and is the number one location globally for FinTech investment projects.¹ Building on these strong credentials and working with FinTech NI, Invest Northern Ireland is delighted to support this important research into Northern Ireland's FinTech industry, led by Whitecap.

¹FT fDi markets

Over 40,000 people are employed across the financial and professional services sector in Northern Ireland and around one in four of these are employed in technology roles. Northern Ireland's evolution into a leading global FinTech hub is underpinned by a highly skilled and adaptable workforce, two world-leading universities, and a business-friendly culture with innovation and collaboration at its core. We have a strong ethos of academic and industry research collaboration with globally recognised ICT and data research centres located here including Queen's University Belfast's CSIT (Centre for Secure Information Technologies), the UK Innovation & Knowledge Centre (IKC) for secure information technologies, and Ulster University's Cognitive Analytics Research Lab (CARL). In addition, both universities have trading rooms that offer students a dynamic learning environment and first-hand experience of the high-pressure atmosphere of a trading room.

The growth of data and computing power, digital and mobile technologies, analytics and automation are driving transformation in the financial services industry, while cyber security and emerging technologies such as blockchain, machine learning and AI are developing rapidly. Capability across these areas is well established in Northern Ireland, which has long held an international reputation for engineering excellence. There is a high concentration of product development activity in which Northern Ireland tech companies and teams 'own' product management, design, development QA and DevOps from end to end. Consequently we have become a globally respected hub for trading technology, RegTech and advanced data analytics.

Thanks to this, global names such as Citi, Allstate, CME Group, TP ICAP and First Derivatives have established and expanded their operations here, while more recent investors such as Aflac, Alchemy and FinTrU have joined the cluster. International firms have not only benefitted from the strength of technology and innovation talent on offer here, they have tapped into a wealth of other skills available to deliver in a broad range of areas including fund administration, investment operations, analytics, risk management, regulatory compliance and legal services.

Fintech incubators established in the region by Danske and Barclays are nurturing entrepreneurs in payments, InsureTech and RegTech. And Northern Ireland start-ups and scale ups such as Datactics, FS Com, Automated Intelligence and Funds Axis are thriving here thanks to a highly developed entrepreneurial ecosystem, vibrant networking scene and the active promotion of sector collaboration.

As the economic development agency for Northern Ireland, Invest NI offers practical and financial support, developed in partnership with clients, to ensure that investor companies grow and prosper. We are committed to supporting and growing the FinTech sector here and we look forward to exploring the opportunities identified in the research to reinforce Northern Ireland's position as a leading FinTech hub. We thank Whitecap Consulting for its work in completing this comprehensive research project.

FinTech Envoy for Northern Ireland, Andrew Jenkins



Andrew Jenkins
HMT Fintech Envoy for Northern Ireland

It is my great pleasure to contribute to the 2020 Northern Ireland Fintech Ecosystem Report. This report is the first of its kind for the fintech sector in Northern Ireland; commissioned by the FintechNI Association in partnership with Invest NI and carried out by independent strategy consultancy Whitecap Consulting.

The findings and recommendations within this report are broad and far-reaching.

In several aspects they support what many of us within the sector have known for some time - that we have something very special in Northern Ireland; a blend of world-class technology capabilities, and exceptional people passionate about seeing the fintech sector continue to grow and thrive.

The report also lays out a set of recommendations that, I believe, provide a foundation for developing the sector well into the future.

We should feel proud of what we have accomplished to date. NI's fintech sector is competing successfully on the global stage and is being recognised for it. Accolades such as the 'World's Number One Destination for FinTech Development Investment Projects'; Belfast being named the 'Top City in Europe for New FDI Software Development Projects' and being ranked in the inaugural 'Top 10 European Tech Cities for the Future', are hard earned and well deserved.

Since being appointed as HMT Fintech Envoy for Northern Ireland in October 2019, I have made it my mission to support and promote a sustainable, diverse, and collaborative world-class fintech sector in Northern Ireland for the benefit of wider society.

Over the last 12 months, I have had the opportunity to engage with a broad range of stakeholders across

government, industry, and academia. I had the privilege of hosting the Rt Hon William Russell, Lord Mayor of the City of London, and have met with senior representatives from the City of London Corporation. I have held high-level engagements with political leaders in Stormont and Westminster, including the Economy Minister, Diane Dodds MLA; the Economy Spokesperson for each of the five main political parties; Robin Walker MP, Minister of State for Northern Ireland; and ongoing engagement with HMT and the Economic Secretary to the Treasury, John Glen MP.

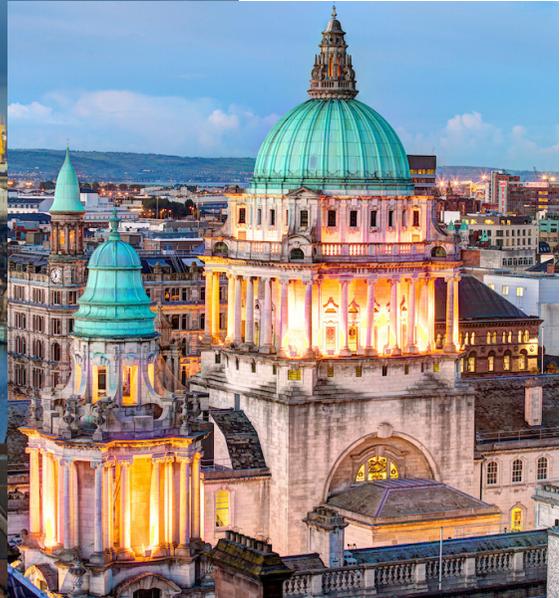
In each engagement I talk about what I believe are the necessary ingredients for growing and sustaining a thriving sector in Northern Ireland and how, through collective will and desire, we can harness the potential that exists across this region.

I'm pleased to see that many of those 'ingredients' have been identified as thematic areas within the report, with talent and skills coming through as a key focus area, in addition to the importance of collaboration right across the sector, across all UK regions, and beyond.

The launch of this report comes as the UK Government's Independent Fintech Strategic Review considers its recommendations to ensure the ongoing success of UK fintech. Furthermore, programmes of work are well underway as part of our City Deals, of which digital innovation is a central tenet.

Through the strength of collective ambition, I believe we have a unique opportunity at this juncture to lay the future strategic direction of the fintech sector in Northern Ireland.

To conclude, I would like to thank Whitecap Consulting for leading on this important piece of research and I want to recognise the FintechNI Association for the vision and leadership they have shown in commissioning this report.



ECOSYSTEM
RESEARCH



Northern Ireland FinTech Ecosystem Research



Richard Coates
Managing Director
Whitecap Consulting

Welcome to the inaugural report into the Northern Ireland FinTech Ecosystem, published following a research project conducted in partnership with FinTechNI. This is the sixth regional FinTech ecosystem Whitecap has analysed and we are delighted to be able to report on a strong and growing ecosystem underpinned by an impressive strength in people and technology.

Over the last 3 months we have conducted an analysis of the FinTech activity in the region, which has included interviews with more than 35 individuals, an online survey, two webinars, desk research, and insight from numerous other discussions including weekly update sessions with the project steering group.

Upon completion of the research process, we took part in a webinar in October to share the preliminary findings, which provided invaluable feedback. This enabled the report to be finalised and ensured the next steps could be planned in an inclusive manner.

The report is intended to serve as a building block for stakeholders across the region to support the development of the FinTech sector in Northern Ireland. We are grateful to all the organisations who have worked with us and supported this work, especially the project steering group, which was made up of a subset of the FinTechNI working group.

Definitions and methodology

FinTech can be defined as the application of technology to improve financial products and services. This makes it a very broad category, in which it is acknowledged to be extremely challenging to categorise companies and jobs, especially in the absence of standard measures such as SIC codes.

In this report we have differentiated between three different types of companies directly operating within the FinTech sector:

- **FinTech startups and scaleups** - pure FinTech business models, often with a focus on disrupting the sectors they work in.
- **Established Financial/FinTech** - established entities, offering financial products or services.
- **Tech firms** - businesses operating in multiple markets (must include serving financial services or FinTech).

Categorising jobs within FinTech is also challenging, as it is not the case that everyone working in established financial services or Tech is working in FinTech. We have conducted primary research to establish the number of jobs within FinTech startups and scaleups, and have adopted a proxy methodology to estimate overall FinTech sector roles within the three categories listed above.

To calculate the FinTech workforce and GVA we have used figures from Tech Nation and TheCityUK, and have worked closely with Invest NI who have primary data that has enabled us to arrive at an accurate number. We have also identified workers within FinTech startup & scaleup firms via our own primary research. Estimated regional FinTech GVA has been calculated via the following formula: estimated FinTech workforce X GVA contribution per worker (using the UK average).

Report authors:



Julian Wells
Director & FinTech Lead
Whitecap Consulting



Daniel Ryan
Junior Consultant
Whitecap Consulting

Overview - Northern Ireland FinTech Ecosystem

Northern Ireland is a uniquely located country with an exceptionally high concentration of FinTech employment within a thriving and highly tech-focused financial sector, which is fed by an outstanding education system and is supported by an evolving FinTech ecosystem with strong links to the UK, Ireland and the US.

Northern Ireland is a unique global location. It is part of UK and uses Sterling, but it also has a direct border to EU via Ireland, and enjoys strong links to the US. The strength of the links with the US should not be underestimated, and Northern Ireland is the number one international location for US cyber security firms.

Northern Ireland has the highest concentration of FinTech employment in UK, with one in five people working across the financial and tech sectors in Northern Ireland working in FinTech. The level of FinTech sector employment was found to be almost four times the number Whitecap's model had forecast, and this high level of employment means there are stronger links between the education system and FinTech employment than we have observed in any other region.

The key strengths of Northern Ireland are clearly defined and include cyber security, AI/data analytics, RegTech, trading, and insurance. The FinTech sector is boosted by the presence of a number of large US organisations across these sectors who have been attracted to Northern Ireland by focused efforts to bring in Foreign Direct Investment (FDI). The combination of these organisations and the emerging cluster of FinTech startups and scaleups means Northern Ireland currently has an unusual dynamic of very large international FinTechs and small local FinTech companies, but with very few mid-sized organisations.

The strength in tech in Northern Ireland is impressive. Belfast, along with Cambridge, was named the UK's most tech centric city by Tech Nation, with 26% of all job vacancies in 2019 in tech and digital. Previous Tech Nation research showed Belfast to be one of the best cities in the UK to work in technology - and the best place to come to work as a software developer. The strength of the tech sector, physical hubs and the financial sector were consistently cited as key strengths in stakeholder interviews and online survey which supported this research.

As is the case in other regions of the UK, the demand for tech workers exceeds the supply, a situation that is being exacerbated by the large scale creation of new jobs by the FDI companies. As a result, salaries in tech are rising, and operating costs are increasing in tech-based businesses. This is creating a challenge for the smaller local firms in particular, who find it hard to compete with the salaries and employment packages of the larger firms.

Belfast is the main hub, but other locations are also active. Belfast City Council has developed an economic recovery strategy for the city post Covid, with FinTech highlighted as a priority sector, meaning it is prioritised for support. Derry, Northern Ireland's second largest city with a unique cross border location is home to major FinTech employers such as Allstate, FinTrU and Alchemy, as well as other FinTech-focused firms including Metacompliance, Onesource Virtual, and TSYSCAYAN.

Derry & Strabane Council has identified digital and creative as a key sector, including digital financial technologies. Meanwhile, the Mid & East Antrim region has over 200 micro and SME companies within the financial services sector and is home to the new i4C innovation hub in Ballymena, which will include incubation capability as well as coworking and collaboration space, making it an attractive base for FinTech, business services and digital organisations to locate.

FinTech has been identified as a core areas of focus and this research project has observed widespread and unanimous support for the development of the FinTech sector. The FinTech startup/scaleup presence is relatively small at present, but the ecosystem support components are all present, including hubs, funding, and a growing FinTech community. FinTechNI has been formed as a representative body with Andrew Jenkins of Arity (part of Allstate) Northern Ireland as HM Treasury FinTech Envoy, ensuring it is linked to national developments and has a voice in policy discussions. FinTechNI is part of the FinTech National Network, a group established by Innovate Finance in 2019 which also includes other regional FinTech clusters.

Stakeholder quotes

"Northern Ireland offers an attractive business environment with good infrastructure, a key strategic location, competitive labour costs and availability of financial support. Within NI, there is an opportunity to locate Fintech businesses in Belfast, the North West and also in places like Mid and East Antrim, where we can offer local talent, tailored business support, potential access to additional and unique funding and flexible Grade A workspace enabling Fintech companies the space to grow and develop."

Anne Donaghy, CEO, Mid and East Antrim Borough Council

"The talent pool has always been very strong here and the Northern Ireland education stats are amongst the highest in the UK. The quality of the tech sector is absolutely world class, especially in cyber, FinTech, high performance computing and big data – all of which are complimentary areas of strength."

John Greer, Director of Economic Development, Belfast City Council

"The great thing about Northern Ireland is that everyone wants to help each other. The support ecosystem is very startup heavy, however, need some more scaleup success stories."

Gary Davidson, Entrepreneur Engagement Manager, Tech Nation

"There is a vibrant cluster of FinTech companies here and there are some great vehicles to help them get going, such as the Danske FinTech Hub, Catalyst, and Ormeau Baths. In this environment, I can only see more companies starting."

John Healy, Managing Director, Allstate Northern Ireland

"We didn't come here for financial reasons, it was for the ecosystem of companies and universities as well as the already strong FinTech reputation. I think financial technology and technology are now seen as highly desirable and coveted career paths here."

Keith Farley, Managing Director & Vice President, Aflac Northern Ireland

"There are major trading links with the US going back many years. When people in NI look to expand beyond UK they don't look at Europe, they look at the US markets. However, as most of the FinTech firms here are smaller the UK market will be their primary focus."

Alex Lee, Chairman, fscom

"I think NI is doing very well. FinTechNI has progressed well and seems to have strong support from London and the wider UK. The US is a big influence, and there is a very strong connection between all of Ireland and the US."

Hilary Moran, Programme Manager, FinTech Corridor

"Many companies have realised that they have to compete for talent on factors beyond salary alone, looking at the wider employee value proposition in terms of things like flexible working, working environment, private medical insurance, life assurance and so on. The benefits packages on offer are really strong"

Andrew Jenkins, HM Treasury FinTech Envoy

"The North West has developed a really strong and vibrant FinTech sector, with numerous established global FinTech and InsureTech organisations establishing themselves both North and South of the border."

Aidan O'Kane, Director, Derry Chamber of Commerce

"We are really good at developing young people. We have a great education system and the apprenticeship route is amazing. The cost of living is low vs rest of UK, but standard of living is really high."

Claire Dowds, General Manager, Ormeau Baths

"We've been looking at the economic prospects for NI post-Brexit, and we quickly identified that FinTech and related sectors such as Cyber and Tech represent key pillars for significant growth in the NI economy."

Stephen Dawson, Partner & Head of Financial Services, Shoosmiths

"Northern Ireland has experienced significant growth in the Fintech sector with many global investors setting up centres here alongside a thriving startup and scaleup cluster. Access to talent and cost effectiveness are important advantages, however our partnership approach and ability to collaborate are the key differentiators that have driven success in this sector."

Karen Bradbury, FS Sector Lead, Invest Northern Ireland

"The education system is strong and always has been. Invest Northern Ireland has provided great support for a lot of companies – it is a USP."

Lee Stuart, Managing Director, Covernet

"Northern Ireland has the ability to blend people and technology. We have strong skills in KYC, AML, and customer management. We invest a lot in our people, and we develop really good people."

Andrew Jordan, Head of Technology & Innovation, PwC Operate

Future potential

Northern Ireland has opportunities across multiple fronts, including growing the ecosystem locally, further developing the talent pool, adapting to the impacts of Covid, developing national and international trading links, and staying aligned to the development of the UK's national FinTech ecosystem.

Two years ago, Catalyst published a report² in partnership with Ulster University and Bank of Ireland which focused on the importance of the knowledge economy in Northern Ireland. It highlighted the potential to create an additional £3.2bn GVA and 80,000 new jobs by 2030.

There are opportunities to develop the FinTech ecosystem within Northern Ireland, and this report makes recommendations relating to growing the talent pool and continuing to develop NI's reputation in the financial, tech and FinTech sectors. Key to this is providing enhanced support to early stage FinTech firms via a more active FinTech community including more engagement between large and small organisations and other stakeholders.

The high proportion of FinTech employment within the workforce has already created strong links between the education system and major employers, and the further development of the size and capability of the workforce is clearly critical to continuing to grow the FinTech footprint within Northern Ireland. Stakeholder interviews and the online survey conducted as part of this research acknowledged the availability of talent as the primary growth opportunity for FinTech in Northern Ireland, but also the area that most required attention and development over the next 2-3 years. 68% of organisations surveyed via the online survey said they plan to hire people into FinTech roles within the next 6 months, highlighting the continuing growth of the sector.

As a result of the impact of Covid, there are now opportunities to benefit from 'virtual' initiatives spanning multiple locations within the UK, or indeed internationally. Northern Ireland may be able to leverage its strength in areas such as cyber, advanced analytics and artificial intelligence by taking the lead on the creation of virtual cohorts / centres of excellence, an opportunity that may sit well with some of the innovation and collaboration hubs.

As the UK moves towards Brexit, Northern Ireland finds itself with significant opportunities. Northern Ireland's strong trade links with the US and its established cluster of US FinTech firms indicate it will remain in a position of strength, while its unique adjacency to mainland UK and Ireland can also be capitalised on.

Links with Ireland appear to be set to develop further. For example, a new £250m transport hub is planned for Great Victoria Street, with a proposed high-speed train to Dublin. This may open up a link with Northern Ireland for support functions to Dublin-based companies. Major brands with a Dublin base include the likes of Google, Facebook, and LinkedIn, while in FinTech terms it is best known for payments, RegTech, lending, funding and trading, as well as financial management. The FinTech Corridor is the primary cross-border Fintech cluster established to encourage interconnection between Belfast and Dublin, and locations between the two major cities.

Northern Ireland will have opportunities to benefit from the increased focus on connecting and developing the national FinTech ecosystem. In July 2020, the UK Government launched the independent 'FinTech Strategic Review' to establish a roadmap for future success. In the new year, the review is expected to make recommendations relating to the support of the regional FinTech ecosystems. Led by Ron Kalifa OBE, the review is comprised of five chapters, including one focused on National Connectivity (the others are Investment, Talent & Skills, Policy, and International Competitiveness). Northern Ireland's FinTech Envoy, Andrew Jenkins, has been directly involved in the review. Additionally, the FinTechNI team has an opportunity to input at various stages via its involvement in the FinTech National Network; an organisation which itself is less than two years old but already seen as an important group within UK FinTech.

The realisation of Northern Ireland's potential as a FinTech hub will require planning, coordination and collaboration across the ecosystem. Designing and implementing a 2-3 year FinTech development plan for Northern Ireland would be a logical and impactful place to start.

²Catalyst (2018) The Northern Ireland Knowledge Economy Report



Photo credit: Christian Holzinger on unsplash

Stakeholder quotes

"I don't doubt that more companies are going to come to NI because we have a strong reputation and pool of talent for them to access. One of the key areas for growth is to scale our FinTech sector faster, and it's a challenge for everyone to help with. How do we get our companies increasing their sales and their value? It only really comes from increased penetration of their markets, locally, nationally and internationally. We need to support them and use our collective experience to help them."

John Greer, Director of Economic Development, Belfast City Council

"Mid and East Antrim has a vision to be a key player within the FinTech and technology sectors. Through collaboration, we wish to grow the sector, our focus is on: talent and skills; innovation and creativity; sustainable growth; attracting FDIs; and providing startup and scaleup support."

Anne Donaghy, CEO, Mid and East Antrim Borough Council

"Nearshoring will become even more prevalent as I think some of the problems of offshoring have been exposed by Covid. This can help NI. Remote working has little impact on productivity and offers us a growth opportunity. We have a strong infrastructure to help such as great broadband provision."

Brendan Gorman, Director, Vox Financial Partners

"The growth opportunities are in Cyber, Insurance / Insurtech, compliance, and data. There's also a lot of interest in payments and processing, as well as medtech, which feeds into FS."

Mark Dowds, Managing Director, Anthemis

"I don't see levelling up across the UK as making all regions equal; for me it is more about how everyone plays to their strengths for the greater good. We'd love to have a FinTech unicorn open a base here but I think it comes back to how we can play to our strengths as a region – we need to focus on our areas of expertise and understand how we can use them to our advantage. If we do that well, then I believe the opportunities will follow".

Andrew Jenkins, HM Treasury FinTech Envoy

"I think it's important for us to be focused and realistic in our aspirations. We should focus on some tech clusters where we have real depth of expertise. I think it's RegTech, advanced AI, analytics, trading and insurance – this is where we are really credible."

Alex Lee, Chairman, fscm

"There are clear reasons for established FinTech businesses to choose to come here. We have so much benefit to offer in terms of skills, expertise and cost. You can get anywhere in NI within an hour from Belfast, it's a 45 minute flight to London City, and you can drive to Dublin in 90 minutes. Also, we're sharing a border with an EU country. We have a great opportunity, but we need to shout louder."

David Allister, Head of Digital Partnerships, Danske Bank

"We can create an environment with a bigger canvass where people can learn from each other. Within our portfolio of 75+ companies there are opportunities for learning across different locations. There's so much learning to be done by bringing NI and Scotland together. The same principle would apply to other regions."

Jamie Andrews, Partner, Techstart Ventures LLP

"There is clearly a significant appetite amongst the FDI community for further opportunities here, underpinned by the region's compelling proposition as an exceptional place in which to live, work, learn, visit and invest. But we are seeing a number of sectors really leading the way in terms of generating investor and occupier interest and chief among these is most definitely the FinTech sector – clearly evidenced by the wealth of US and other international firms in this sector that have established a base here in recent years."

Michael Neill, Head of Office, A&L Goodbody Belfast

"Covid can create a lot of opportunity, in spite of all the negative impacts. PayTech and RegTech are both a strong opportunity coming out of Brexit. The cross border issue in Ireland means north-south collaboration will be important. FinTech is a major skills and jobs creation opportunity for NI."

Claire McCann, Lecturer in Finance, Ulster University

"Firms in NI need to have a vision that expands beyond NI. The world isn't coming to Belfast looking for a solution, we've got to go looking elsewhere to give ourselves the best opportunity."

Simon Cole, CEO, Automated Intelligence

"We want to look at ways to boost our indigenous FinTech sector, and are keen to understand where there are opportunities for us to do this."

Brendan McGoran, Economic Development Officer (Creative & Digital), Belfast City Council

"The education and work ethic of our people is truly world class. We have seen large FinTech FDIs set up in the Derry City region and realising success beyond their expectations; they may initially come for the lower cost of operations, but the reality is they stay because of the talented and dedicated workforce that they employ."

Aidan O'Kane, Director, Derry Chamber of Commerce

Findings and recommendations

	Key findings	Recommendations	Key stakeholders
Talent	<ul style="list-style-type: none"> High concentration of FinTech talent makes NI an attractive location for employers Clear links between education system and employment opportunities Demand for some tech skills has put upward pressure on salaries 	<ul style="list-style-type: none"> Continue to build the talent pool. Raise awareness of FinTech careers in schools / colleges / unis. Consider more options for re-skilling programmes to boost the FinTech talent pool. Seek to retain key skills such as software development, to and attract these skills from other regions. The fact salaries in NI are rising and career developments are gaining strength can be key messages, as well as the quality of life on offer 	<ul style="list-style-type: none"> Public sector Established FS, Tech & FinTech firms Universities & FE colleges Tech/FinTech groups
Established financial sector	<ul style="list-style-type: none"> NI has developed a core strength in FS and established FinTech via foreign direct investment particularly in wholesale and retail trading, and insurance. Compliance and regulation strength across the FS, tech and advisory sectors. The sector has an unusually strong focus on technology and operations. Many well known global FS brands have moved to NI but so far not a recognised pure FinTech. 	<ul style="list-style-type: none"> Promote the benefits and opportunities NI can offer as a FS/FinTech location post-Brexit. Develop the story around the core areas of strength, to ensure NI's reputation continues to build. Place strong focus on the expertise in compliance and RegTech – as this has broad application and can be a great resource for a wide range of organisations in multiple sectors. 	<ul style="list-style-type: none"> Public sector Established FS, Tech & FinTech firms Advisory firms Tech/FinTech groups
Tech sector	<ul style="list-style-type: none"> Tech and FS sectors are highly integrated. Key strengths in cyber, advanced analytics and AI. A number of local tech firms have successfully scaled up, and some have pivoted to focus on FS due to the opportunities in the sector. FDI companies have helped scale the tech sector and created significant numbers of jobs. 	<ul style="list-style-type: none"> Continue to strongly link the Tech, FS and FinTech sectors, building on the strength NI has in this combined space. Transfer knowledge and learning from tech scaleups into the FinTech startup community. 	<ul style="list-style-type: none"> Public sector Established Tech & FinTech firms Hubs Tech/FinTech groups
FinTech startups/scaleups	<ul style="list-style-type: none"> FinTech startup/scaleup presence relatively small. Good ecosystem support for startups in NI, which is starting to filter through to FinTech. Several successful early stage firms but no stand-out case study as yet. Overall firms are older and growing slower than in other regions. 	<ul style="list-style-type: none"> Ensure there is support for early stage FinTech businesses, providing them with a platform for promotion and feedback, and access to a supportive community (this is key to building a vibrant FinTech cluster). Proactively seek similar opportunities for these FinTechs outside NI, helping them to open up new markets and receive feedback from a wider range of sources. 	<ul style="list-style-type: none"> Public sector Investors Hubs Tech/FinTech groups Universities

	Key findings	Recommendations	Key stakeholders
Relationship between Financial sector and FinTechs	<ul style="list-style-type: none"> Limited number of meaningful links between large corporates and local startups / scaleups. Large organisations are mainly FDI companies, where NI is serving as a resource hub. Evidence of startups spinning out of corporates not yet widespread 	<ul style="list-style-type: none"> Build the ecosystem by creating more opportunities for collaboration, for example: <ul style="list-style-type: none"> Consider how the large firms can provide knowledge, insight and potentially challenges for the smaller firms to try to solve. Enable smaller firms to showcase their ways of working and innovations to larger firms, to encourage new ways of thinking / working. 	<ul style="list-style-type: none"> Established FS, Tech & FinTech firms Hubs Tech/FinTech groups
Funding for FinTech	<ul style="list-style-type: none"> Strong early stage funding support available for sub £1m fund raises. For scale up / follow on funding, firms look further afield, usually to London, Dublin or US. Grant funding is also available for early stage concepts. 	<ul style="list-style-type: none"> Enhance the level of knowledge and understanding of funding options available to firms in NI (not restricting this to NI-based funding). This should span equity, debt and grant funding options. 	<ul style="list-style-type: none"> Public sector Investors Hubs Tech/FinTech groups
Physical spaces/hubs	<ul style="list-style-type: none"> A number of prominent hubs which support FinTechs and the wider startup and scaleup community, including a dedicated FinTech hub. Hubs provide support including nationally recognised incubator / accelerator programmes. 	<ul style="list-style-type: none"> Consider the opportunity for the creation of FinTech specific virtual cohorts / centres of excellence / events to bring together firms in NI and other locations and create value for NI and the organisations involved – eg 'Cyber in FinTech' could be a theme that NI leads on. 	<ul style="list-style-type: none"> Established FS, Tech & FinTech firms Hubs Tech/FinTech groups
Interaction and communication	<ul style="list-style-type: none"> Startup / scaleup sector well connected via hubs and networks. Fintech NI has created an umbrella group for the fintech community. There are numerous broader opportunities to interact. There are opportunities for cross border and international interaction. 	<ul style="list-style-type: none"> Build the community via events, collaboration, knowledge share and relationship building, including forging stronger links between small and large FinTech firms. Seek to align with national and international initiatives, to help expand the reach of NI's FinTech capability and connectivity. Make events open and inclusive, encouraging attendance and engagement from across UK & Ireland, and internationally 	<ul style="list-style-type: none"> Public sector Hubs Tech/FinTech groups
Education	<ul style="list-style-type: none"> Large companies have worked with unis to directly support career development opportunities. These companies have also worked with the unis on research projects. Universities are active in creating 'spin out' ventures. 	<ul style="list-style-type: none"> Encourage further collaborations, at all levels of the education system. Develop case studies and promotional materials to showcase the depth and breadth of the links between universities, colleges, and the FinTech sector. 	<ul style="list-style-type: none"> Public sector Established FS, Tech & FinTech firms Universities & FE colleges Tech/FinTech groups

Stakeholder quotes

"Many investors from the US are identifying Belfast as a city for the future. I see strong demand from these companies, and they are willing to invest in property development. But some of the development land is under complex ownership. In cases of under-utilised or derelict land the Executive should consider compulsory purchases to facilitate international capital, that could be used to support Belfast's regeneration."

Christopher McCracken, Managing Director, Linen Quarter BID

"We need more knowledge and experience in FinTech. When you think of NI, you don't automatically think of finance or FinTech. People have recognised our strengths in relation to tech and cyber security and we are increasingly seeing successful FDI in those areas so there is an opportunity for the FinTech sector to capitalise on that through the cross-pollination of talent. This could lead to an enhanced FinTech profile in the region."

Cormac Quinn, Founder, loyalBe

"Bringing good strong broadband to the regions is important. There's a large fibre cable from US that lands in north west NI. This represents an opportunity for speed of data movement between US and NI, and also to London."

Fergus Begley, Startup Manager, Ulster University

"Our ecosystem already is good but has the potential to be excellent. The NI people are really welcoming by nature - we'll always try to help. FinTech NI is developing and there's lots of support available for startups."

Philip Creed, Director, fscom

"Estonia provides a good comparison. They have 1.3 million people. In 1991, 5 years after independence from the Soviet Union, they established the Tiger's Leap programme to invest in computer and network infrastructure. In 2000, it became the 1st country to make internet access a human right. Today, they have 5 billion-dollar Unicorns in Skype, Playetch, Taxify, Transferwise and Pipedrive."

Darren Burrows, Founder & CEO, Funds Axis

"Covid has given us the opportunity to show that tech solutions and FinTech services can be offered from NI on a much lower cost base but the same calibre of opportunity. Our clients used to want us on site but now they are happy to have them work from NI. We now have a really big opportunity to push the high-quality solutions we have here."

Ivy McFarlane, Business Development Director, AquaQ Analytics

"From a scaleup and startup perspective there needs to be more connectivity across the UK. If we could start collaborating with other bodies and corporates to open up business development/ investment opportunities. The first thing we should do is collaborate with Dublin more as there needs to be more collaboration there. The FinTech Corridor is great, and we need more of those type initiatives across the UK. We need to collaborate where we can. We're all trying to put Northern Ireland more on the map"

Gary Davidson, Entrepreneur Engagement Manager, Tech Nation

"We need a few of the big players to get involved, collaborate with FinTech startups and incumbents, perhaps facilitated by FinTechNI, to come up with solutions that can help with the other side of Brexit."

William Smyth, Lecturer, Financial Services, Ulster University

"Part of Northern Ireland's value proposition is having cost effective, high skilled resources. In future, this may be eroded by increased remote working, making location less of a factor. But equally we now don't need to be on-site so we can work in more places, which can open up new markets, nearshore or further afield. Overall we see this as an opportunity, raising the potential for FinTrU to both recruit on a global stage for specific roles and address opportunities traditionally held by larger players with a greater geographical footprint."

Karl Hanlon, Chief Commercial Officer, FinTrU

"We need to broadcast that we have a great tech sector and capabilities, and we need to promote this within NI and externally, which will also help make it attractive and an aspirational career. I think the first step should be to get the FinTech cluster in NI talking, then to look at London and Edinburgh. Virtual cohorts would be interesting and could help us look outside NI."

Mark Fletcher, Managing Director, Cardinal Analytics

"We need to play to our strengths. Cybersecurity has brought a lot of companies in and the universities are very involved. How do we link cyber security and FinTech? We need to find the adjacent sectors."

Andrew Jordan, Head of Technology & Innovation, PwC Operate

Availability of talent

High concentration of FinTech talent makes an attractive location for employers



Clear links between education system and employment opportunities

Demand for some tech skills has put upward pressure on salaries

Northern Ireland has a high concentration of FinTech talent with around 7,000 workers due to the vast financial technology activity within the established financial and tech firms such as Citi, First Derivatives and Allstate who combined, employ more than 5000 people across financial services and FinTech. These large employers offset the relatively low numbers in financial and tech roles, resulting in the highest proportion of FinTech roles within the region's workforce we have analysed across each of our FinTech ecosystem reports (0.8%, compared to an average of 0.43%); illustrating the high concentration of FinTech talent.

Northern Ireland has clear links between key stakeholders that engender strong employment opportunities, supporting FinTech activity and growth. Links between Northern Ireland's universities, local government and global companies have driven innovation and world class research in capital markets technology through their digital hubs and research centres, which are explored further in the Education section of this report. There is also evidence of corporate links that have also benefited local startups, such as Santander who through a CSR-focused scheme provided loyalBe with interns, whilst covering 50% of the costs.

Workplus Apprenticeships, initially established to address the skills gap in the NI STEM sector, are also creating employment opportunities through partnerships with employers, the Department for Education (DfE), further education colleges and Ulster University, by facilitating apprenticeships in growing sectors, such as FinTech. Before 2020, Workplus facilitated 100 partnerships, which is expected to have doubled throughout this year and boasts an attrition rate of 5%.³

The ability to supply specialised talent is crucial to maintaining and developing a global position in FinTech. With the competition for skills in this sector being very high in the Belfast area, looking more widely is required, and there are developments in other regions:

- Derry City & Strabane District Council is in the process of rolling out some new Financial Services Level 2 qualifications to the post primary sector which are being delivered virtually by the London-based Centre for Investment & Securities Institute. This is a development which resulted from the City's unique London connections and the annual visit from the Lord Mayor of the City of London.

- Mid & East Antrim has worked in collaboration with DfE to develop Assured Skills Academies within Mid and East Antrim to fulfil current and future employability needs and demands and recently established an Assured Skills Academy in Supply Chain and Logistics within 3 months of initial discussions in conjunction with Northern Regional College. The college has strengths in robotics, which is one of the key growth areas for the Fintech sector along with cyber security, cloud computing and data visualisation.

As is the case in all the regions Whitecap has analysed, Northern Ireland has demand for more software developers. Invest Northern Ireland has been very successful in attracting new companies with Tech Nation listing Belfast as one of the best UK cities to work in tech. However, the success of the tech sector with organisations intending to continue to grow within the region is also creating challenges due to an undersupplied tech labour market, with tech vacancies rising 120% between 2015-2018.⁴ Consequently, salaries have inflated, putting pressure on the startup community as they struggle to match the salaries and packages on offer from FDIs, although it should be noted, Invest NI does offer a top up grant for the salaries of smaller firms.

Despite rising wages, in relative terms Northern Ireland is still a low cost location for talent, with salaries 40% lower than London and Dublin.⁵

³Guardian (2020) Northern Ireland: how apprentices underpin Belfast's fintech boom

⁴Tech Nation (2019) A Bright Tech Future

⁵Invest NI (2018) Northern Ireland A centre of Excellence for FinTech



CASE STUDY: Aflac Northern Ireland



Once the world's leader in linen production, rope-making and shipbuilding to a new reputation for world-class filmmaking and cyber security; Belfast has a proven ability to adapt to the needs of the world.

That adaptability and re-invention was a key draw for Aflac to create a centre for advanced technology in Northern Ireland.

Aflac is a Fortune 500 insurance company, with more than 50 million policyholders in the US and Japan. As those customers demand more digital solutions, it was important for Aflac to find a technology expansion location with strong talent, innovation and the ability to learn new skills. As change is the only constant in technology, rapid agility is key.

It's been just over a year since Aflac Northern Ireland first opened for business in Belfast. Aflac NI is a digital startup, focusing on software development and cyber security. Now with more than 75 employees, this team is focused on thinking differently and challenging norms.

Aflac Northern Ireland Vice President and Managing Director Keith Farley explains, "We selected Belfast because of its culture and people. It has a history of resilience, agility and a passion for engineering innovation that is helping Aflac meet and exceed customer needs."

Aflac assessed 15 global locations before selecting Belfast for its centre for advanced technology. In addition

to delivering great solutions to the US and Japan, Aflac NI has also prioritised becoming a contributing member of the Northern Ireland community and local tech ecosystem.

"At Aflac Northern Ireland we're trying to do things a little bit differently, from the suppliers we work with to the culture we're creating. We could have easily lifted our existing supplier relationships from the US and set them up here, but we wanted to adopt a 'farm-to-fork' strategy and really embed ourselves in the local infrastructure. From our accountants to our lawyers to our benefits provider, our partners are all local to Northern Ireland and that was a conscious decision. In terms of our culture we are really passionate about creating a working environment that not only attracts the most talented people but encourages them to be themselves. We value, we challenge and we listen. The first meeting our new employees attend sets the tone from the outset; we do very serious work but we don't take ourselves too seriously," Farley said.

And, as Aflac Northern Ireland enters its second year, it is well-positioned to continue to grow and mature its digital and cyber security teams. Aflac is well on its way to creating the 150-person company it envisioned last year, and has recently moved into a new office at City Quays 2.

While the parent company is known for its accident and illness coverage, it was no accident that Aflac Northern Ireland picked the inventive Belfast Harbour as the location for its innovation delivery centre.

Mural by Danni Simpson for Aflac's Belfast office, referencing other locations such as Japan and Columbus.

Stakeholder quotes

"The single biggest asset we have is the availability of talent. This is in terms of the quality of talent, not the cost. Northern Ireland offers outstanding value for money through better quality at a better price. We're not just an outsourcing location anymore, it's more than that."

Alex Lee, Chairman, fscm

"We've had good success here. I think it starts with the education system, which I'm experiencing first hand with my own children. Even if someone doesn't have the skillset, we find people can be trained. The ability of people to learn and pivot should not be underestimated. Northern Ireland may be in the shadow of London and Dublin, but it's just as good and we should prove it."

Keith Farley, Managing Director & Vice President, Aflac Northern Ireland

"Skills is the greatest challenge and the greatest opportunity. We have an exceptional education system in NI, but I think fundamentally what we're seeing in tech is a mismatch between supply and demand of skills. When you think about how we build the skills of the future, we need a much more joined up approach across the education system and the economy. Where that collaboration happens, we see great outcomes".

Andrew Jenkins, HM Treasury FinTech Envoy

"If AI and security are key for the future, we need students who are strong in maths. We have the raw materials but we need good coaches to develop this raw material and there's a lack of teachers who can teach maths and programming. One option is for graduates to have to teach before going into employment."

Paul Miller, Deputy Director, CSIT, Queens University Belfast

"Availability of talent, particularly at graduate level, is an important competitive advantage in international markets. Government initiatives such as Assured Skills and partnerships with our local universities and FE colleges have been vital to our success in developing the skills pipeline here."

Karen Bradbury, FS Sector Lead, Invest Northern Ireland

"We need to produce more graduates. Thinking differently about qualifications and routes to qualifications can help with this, and 'create your own degree' is a concept to look at. If we let students train across multiple universities this would allow specialist content and courses to be created rather than duplicated across universities. We also need to ask how universities can co-create materials with employers, as this will be a faster way to create course content."

John D'Arcy, Director, Ireland, The Open University

"We're lucky that the business sector here engages so well with us in developing our talent pipeline. We've done a lot of up-skilling and re-skilling through our academy model of training in industry-led qualifications, work experience and guaranteed job interviews leading to jobs. With the schools sector, in collaboration with local companies we have invested heavily in articulating the pathways into the Fintech sector for young people which provide the opportunity for a global career on their doorstep."

Tina Gillespie, Skills Manager, Derry City and Strabane District Council

"We had 174 companies on our site pre Covid and they told us their number one issue was talent. Initiatives around the supply and demand of talent are not joined up enough. Post-covid we need to see the impact of non-geographical hiring. NI is good value, we'll win some but we'll lose some to other places too."

Steve Orr, CEO, Catalyst

"Northern Ireland's flourishing tech scene is driven by a wide range of factors – including our world-leading talent base in this sector and the strong track record of success enjoyed in Northern Ireland by inward-investing tech companies. This is further strengthened by a strong portfolio of support initiatives from organisations such as Invest NI, a collaborative and open FinTech eco-system, the outstanding work of the universities, and good access to finance across a range of sources."

Chris Jessup, Head of Financial Services Regulation, A&L Goodbody Belfast

"We need to ensure that our young people realise what a career within FinTech involves and open their mind-set to the many opportunities that exist within this sector. There is a need for additional FinTech/Technology hubs throughout Northern Ireland. Belfast and the North West are currently seen as the main areas for FinTech hubs in NI but opportunities exist for Fintech clusters in Mid and East Antrim and throughout Northern Ireland."

Anne Donaghy, CEO, Mid and East Antrim Borough Council

"The schools and universities are fantastic, with Northern Ireland consistently outperforming all other UK regions in terms of academic qualifications. In addition, we have a great ecosystem of FS and tech companies in NI, which also attract more experienced people back from the major financial services centres such as New York and London. This creates a strong and diverse talent pool."

Karl Hanlon, Chief Commercial Officer, FinTrU

"Northern Ireland has developed a self-perpetuating ecosystem where education, talent and employers come together. The large FinTech and tech firms are even stakeholders in designing the courses at universities - what better way to help drive the Fintech culture"

Stephen Dawson, Partner & Head of Financial Services, Shoosmiths

Strength of the overall Financial sector

NI has developed a core strength in FS and established FinTech via foreign direct investment particularly in wholesale and retail trading, and insurance.



Compliance and regulation strength across the FS, tech and advisory sectors

The sector has an unusually strong focus on technology and operations

Many well known global FS brands have moved to NI but so far not a recognised pure FinTech

Throughout the research, a strong financial sector was acknowledged to be vitally important to the future of the Northern Ireland FinTech ecosystem. It is also acknowledged as a current strength, particularly in light of the presence of numerous international firms. The introduction and growth of FDI companies has amplified the established financial technology activity, particularly

in wholesale and retail trading and insurance, with the likes of TC ICAP, Vela and Aflac all setting up operations within Northern Ireland. TC ICAP is an interdealer broker employing 6000 people globally, 300 of which are in Northern Ireland with half of those being tech roles.

As a result, Belfast has been named the 3rd best location globally for FinTech FDI performance, with FinTech roles making up more than 20% of Belfast's FDI created jobs between 2014-2018; leading to Belfast being ranked as the 3rd best location for FinTech in the future and the world's number one destination globally for fintech development investment projects. There are also successful homegrown companies, for example First Derivatives now employs more than 1500 people.

There is a core strength in compliance outsourcing in Belfast that has built up over the last 5-10 years. PwC and Deloitte are highly active in graduate recruitment and training and play a key role in building a great talent pool in areas such as RegTech, data, and KYC where there are opportunities to evolve from admin work into automation and more advanced skills in this area.

PwC's Operate division delivers operational projects with a focus on regulated areas. About 80% of PwC's 2500 people in Belfast are involved in Operate, which recently worked on Future Fund for the British Business Bank. Meanwhile, FinTrU provides KYC, operations, compliance and legal managed services to global investment banks. It employs 700 people across 5 delivery centres in Northern Ireland, along with offices in New York and London. In recent years FinTrU has made a significant strategic pivot into technology in order to disrupt the way outsourced services are delivered.

Insurance is a very broad sector which has many touch

points across other sectors. The strong presence of InsureTech; including organisation such as Liberty, Allstate and Aflac; aligns well with the strength in cyber, as this is important in the insurance sector. Aflac is the largest supplier of supplemental health insurance in the US and Japan, employing 10,000 globally. Within a year of arriving it has grown to approximately 60 employees in Belfast working in IT and cybersecurity, with an aspiration to expand to 150 people.

Major international banks, insurers and fintech companies include Allstate, Citi, Liberty IT, PwC, CME Group, fscom, Lloyds, Visa, Cayan and Chicago Mercantile Exchange, and Datactics. Citi moved to Northern Ireland in 2005 and employs approximately 2700 people in Belfast including around 1000 in technology roles. Operations, FX, compliance and legal services roles are also based in the city.

Meanwhile, in the professional services sector, FS features strongly with 28% of employees in banking (investment and retail), 12% in insurance, 19% FinTech, 16% accountancy, 8% funds & other FS. TLT, the UK law firm, employs approaching 70 people in Belfast, primarily servicing NI clients. The firm is highly active in the FinTech ecosystems across the UK. Shoosmiths has located its Client Inception Team (KYC/AML) in Belfast due to the outstanding availability of FinTech and RegTech talent in the region. The firm also told us it has seen considerable interest from skilled individuals in Dublin prepared to move north.

Across the border in Dundalk there is further strength in technology, operations and payments. Paypal has more than 2000 people in Dundalk, drawing some of its workforce from Newry. Yapstone and others have bases there too, and Coca Cola Financial Services is based in Droghada, the payments operation for the international financial services part of Coca Cola.

*FDI Intelligence (2019) FinTech Locations of the Future 2019/20

CASE STUDY: Allstate Northern Ireland



Established in 1998, Allstate NI provides a range of innovative, business support services including technology, data, cybersecurity and finance to their parent company, the Allstate Corporation. Allstate is one of the largest property and liability insurance companies in the US and a Forbes 100 company. Allstate NI employs over 2,400 in their offices in Belfast, L'Derry and Strabane.

Allstate NI is actively building Artificial Intelligence (AI) solutions today, to solve the problems of tomorrow. The company has recently expanded their AI offering which leverages cutting edge tools and technologies, making advancements in Machine Learning, computer vision and audio processing. The teams evaluate technologies, develop patterns, practices and services for use across a number of areas including claims, fraud detection and billing. These projects transform how Allstate gains useful insights from data, automate repetitive tasks and exposes the team to new technologies to provide a seamless experience for Allstate's customers.

John Healy, Managing Director, Allstate Northern Ireland comments *"the expertise we have in cyber, AI, ML, data science and high-performance computing is a significant growth opportunity. These are all integral to the future success of the FinTech industry, and we already have these clusters of expertise."*

Allstate NI is also a key employer of graduates, apprentices and placement students, giving the future workforce valuable insights into working in a FinTech industry. As well as job opportunities, Allstate NI collaborates with local universities and Further Education colleges to help develop career opportunities now and in the future. In November last year, Allstate NI opened the state-of-the-art computing lab at Ulster University's School of Computing, Engineering and Intelligent Systems at the Magee Campus which represented a major investment in educational resources for the North West region.

John Healy adds *"We take on a lot of graduates each year. Allstate are represented on the advisory boards at both universities and this helps shape the content of the courses, ensuring graduates are equipped with the skills that industry need. As technology evolves and it impacts more and more in our everyday lives, I believe that the further education sector has a key role to play in creating skills or reskilling opportunities which can add additional talent into the local market."*



Stakeholder quotes

"Covid and the transition to work from home poses a real challenge to traditional off-shoring models of the big banks. If we can demonstrate our resilience, then Northern Ireland stand-out as offering a very attractive nearshore alternative both for fintech and business process outsourcing. This is a major opportunity for growth and job creation. We need to find these opportunities and bring them to NI."

Darren Burrows, Founder & CEO, Funds Axis

"The financial sector has been key for us. Until recently we had a collaboration with Allstate related to an R&D grant for a system to detect fraudulent claims whereby we deployed AI techniques to identify unusual patterns. Over the last couple of years we have worked with Citi on trader surveillance, applying Machine Learning techniques to detect certain types of trades. And we are just about to start a KTP with Liberty."

Paul Miller, Deputy Director, CSIT, Queens University Belfast

"There has been a lot of outsourcing to NI and Ireland. It's now called nearshoring and Belfast has a strong nearshore offering with comparable skills and lower costs. There are more larger financial institutions who could benefit from coming here."

Ivy McFarlane, Business Development Director, AquaQ Analytics

"As well as attracting FDI we want to grow and develop indigenous firms and replicate the success of companies like First Derivatives, who are based in a small regional city but servicing global clients."

Anne Donaghy, CEO, Mid and East Antrim Borough Council

"FinTech, in all its guises, represents one of the most important platforms upon which NI can distinguish itself globally, so this is a sector we need to invest in. Brexit is forcing us to look to global markets and I feel FinTech needs to be the single most important element in a global growth campaign for NI."

Stephen Dawson, Partner & Head of Financial Services, Shoosmiths

"There is very good capability in NI and an opportunity for FinTech to grow into an even more significant sector. We have lots of large corporate brands through FDI, but they don't necessarily represent the indigenous community. Much of the business activity is outside NI; it's a resource hub rather than a primary market in our experience."

Simon Cole, CEO, Automated Intelligence

"We have been looking at how Belfast maintains competitive advantage in our key growth sectors and have been working with a range of partners, including the City of London, to ensure the fintech sectors in London and Belfast are connected in terms of supply chain and economic opportunities."

Brendan McGoran, Economic Development Officer (Creative & Digital), Belfast City Council

"There's about 40,000 people in financial and professional services. My sense is that it started off with low level but good value skills. Over time we've gone up the value chain more and become more competitive. Not just in FinTech but in other IP type projects, which have helped grow FinTech."

Steve Orr, CEO, Catalyst

"We're looking to disrupt via a fundamental tech pivot as we realise that what we do will be replaced by tech over time. We're aiming to focus on higher skilled people, and using tech to do low skilled areas. We're very focused on investment banking and have 15-16 master services agreements in place with major banks. We talk their language. This will carry through into our tech pivot."

Karl Hanlon, Chief Commercial Officer, FinTru

"Operating from Belfast enables PwC to offer a compelling mix of skills and competitive pricing. We are positioning Belfast as PwC's operating centre – we have the benefits of cost, language, and timezones."

Andrew Jordan, Head of Technology & Innovation, PwC Operate

"We don't just focus on financial services technology experience, we give equal weight to experience of complex, enterprise level, scalable solutions as these skills are transferable across all disciplines."

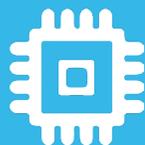
Rosie Gormley, Chief Operating Officer, TP ICAP

"Our clients love our locally trained people, especially over in NY. Pre Covid we would train locally then take people to NY, and the clients loved them – they are known for getting things done but still maintaining frameworks and procedures. It comes from the schooling."

Brendan Gorman, Director, Vox Financial Partners

Strength of the overall Tech sector

Tech and FS sectors are highly integrated



Key strengths in cyber, advanced analytics and AI

A number of local tech firms have successfully scaled up, and some have pivoted to focus on FS due to the opportunities in the sector

FDI companies have helped scale the tech sector and created significant numbers of jobs

Northern Ireland's strength in tech is widely acknowledged. As recently as November this year Belfast was named as one of three UK cities are among 36 chosen by the World Economic Forum (WEF) as pioneering smart cities that will work on safely adopting new technology to help provide procedures, laws and regulations to use new technology responsibly.

Across Northern Ireland there is vibrant cluster of 1,200+ companies including 100 global technology leaders which have established business operations in Northern Ireland such as Fujitsu, SAP, Broadsoft, Xilinx, Rapid7 and Whitehat Security; as well as local companies exporting internationally such as First Derivatives, Kainos and Novosco.

Trading tech is one of the key clusters and a good example of the fusion of tech and FS in Northern Ireland. Advanced analytics and AI, largely in hedge funds, are highly advanced and well aligned with the capital markets expertise. There are signs of this expertise spilling into the startup and scaleup sector, with Cardinal Analytics and Plotinus two examples of FinTech firms involved in hedge fund trading strategies.

The Northern Ireland Executive has pledged its commitment to further supporting cyber security and artificial intelligence (AI), highlighting the desire to build on the strength in these areas.

Cyber is closely aligned to RegTech and managing cyber risk. There are a number of local cyber firms across software and consulting. Stakeholder interviews for this research suggested these firms see strong demand from the financial sector and are increasingly focusing on the sector. Belfast has been found to be the number one international location for US cyber security development projects, and is considered the leading European city for new FDI software development ventures.⁷

Successful local firms can be seen to be having an impact on the growth of the tech sector. Some of these include:

- First Derivatives has created a talent pool in Newry (just under 40 miles from Belfast) which has helped attract other capital markets players.

- Kainos and Neueda are homegrown tech companies based in Belfast employing several hundred people. Financial services is part of what they do, but it's not their focus.
- Automated Intelligence employs around 50 people and provides a cloud-based platform which helps organisations identify and report on risk within their unstructured data and introduce governance controls to manage it. 90% of its team is based in Northern Ireland, with around half in engineering and product development roles. FinTech was not originally considered an area of focus when it launched, but in September 2020 it was named in the latest Tech Nation FinTech cohort, along with Lightyear and Datactics.
- In July 2020, AquaQ Analytics announced plans to add 123 jobs to the company over the coming 2 years, doubling the size of the company. The majority of the new roles will be within the FinTech sector, where AquaQ works with many of the world's largest investment banks, brokers and hedge funds.
- B-Secur, based at Catalyst's Innovation Centre, deploys ECG biometrics across multiple sectors including insurance and payments. It was named 23rd in Pathfinder's top 50 Financial IT rankings in 2017.

The FDI companies have also played an important role in the evolution of the tech sector. As an example, Aflac has a centre for advanced technology in Northern Ireland, while Arity was set up by Allstate in 2016, and is a separate entity which takes data and generates insights into how people move. The insurance sector is a focal point of its B2B proposition, and although most of its customers are in the US it employs 45 people in Northern Ireland (about 20% of its workforce), most of which are in software engineering or product management.

⁷FinTech Futures (2019) The secret behind Northern Ireland's FinTech success

CASE STUDY: Automated Intelligence

Automated Intelligence (AI) was founded in 2010 with a new idea for information lifecycle management. Its cloud-based GRC platform allows financial organisations to take control of their growing unstructured data sets.

Financial services organisations are under a much greater regulatory spotlight than traditional sectors as well as being tasked with legislation such as KYC and AML.

The regulations and standards are varied and complex, and failure to comply leaves organisations open to financial penalties and reputational damage. Things which can cause considerable damage and can even spell the end of a business.

The unstructured data, sometimes known as 'dark' or 'toxic' data, within financial services is often siloed, in disparate sources, of varying ages and of varying quality.

As such, many financial services organisations have insufficient ability to surface, quantify and control the risk within their unstructured data. And/or the ability to demonstrate their compliance to regulators.

Risks include over-retention, under-retention and/or data which contains personal, sensitive and card information. But the organisation often doesn't realise the problem is there.

AI's RegTech platform automates the data governance that is required by the first line of defence, flags and quantifies

actionable key risk indicators for the second line of defence, and provides a full audit trail of compliance for the third line of defence.

It reports on data to FCA, GDPR, Californian Consumer Protection Act (CCPA) and PCI-DSS compliant standards, so financial organisations can rest assured that they are covered.

But it's more than just uncovering risks in data. The platform uncovers the value in unstructured information too. Digital Transformation, a goal for many industries, can only be as effective as the data an organisation holds. Automated Intelligence allows organisations to ask the right questions of the enhanced data set in order to gain customer insights, uncover trends and opportunities, and experience true competitive advantage in often saturated markets.

To date, AI has a range of customers across Global Banks, Retail Banking, Economic Development Banking and Financial Services Regulators, and is currently breaking into new geographical locations, including the US.



Stakeholder quotes

"Tech does not happen by itself. Catalyst started life as a science park with capital funding agreed as part of the Good Friday agreement. At this point Northern Ireland was bottom of the UK's 12 regions for knowledge economy and going nowhere. We're now consistently ranked as the second fastest growing knowledge economy in the UK."

Christopher McCracken, Managing Director, Linen Quarter BID

"There is lots of great technical talent coming out of our universities. The challenge, as a startup, is attracting that talent as it is difficult to compete with the higher salaries and stability on offer with the larger, established firms. I always urge people to work in a startup environment at least once in their career, as they will gain a lot more in experience than what they might lose out in salary and I hope that more graduates will look to joining or even starting a startup as they leave university."

Cormac Quinn, Founder, loyalBe

"There are lots of developers and considerable data security expertise. There are great relationships with the universities, we actually took part in a Knowledge Transfer Partnership program with Ulster University, where we hired a graduate developer for a particular project. The graduate worked for us full time but was also mentored by university lecturers and had access to the university's resources which allowed the project to be a fantastic success."

Philip Creed, Director, fsmc

"NI is really strong in the tech side of FinTech. Most of the FinTech firms here have been started by techies – there are not a FS co-founders in many of these businesses."

Steve Orr, CEO, Catalyst

"The expertise we have in cyber, AI, ML and high performance computing is a significant growth opportunity. These are all integral to the future success of the FinTech industry, and we already have these clusters of expertise."

John Healy, Managing Director, Allstate Northern Ireland

"Cyber security is critical to the FinTech industry. Data and analytics also has a strong link to FinTech, and integration of AI into FinTech is also a growth area."

Paul Miller, Deputy Director, CSIT, Queens University Belfast

"We have seen success from companies that have scaled up. This has created a good pool of people and skills, and some people have made money, which helps with a new wave of angel investing that has emerged. The FDIs and universities have helped nurture talent but we could do with more."

Mark Dowds, Managing Director, Anthemis

"HealthTech and Cyber are two key strengths and lots of companies are being spun out of the universities in these areas, CSIT is unbelievable. AI/ML underpins all these verticals – it comes from our exceptional talent. We had four Northern Irish companies successfully join Tech Nation's cyber growth programme last year."

Gary Davidson, Entrepreneur Engagement Manager, Tech Nation

"There's a burgeoning tech scene in Belfast. We strongly believe that people should get the right advice from the right people at the right time. I think there are more people coming in with the right advice now, which is strengthening the wisdom of the collective here in NI. This can help people feel encouraged to take more risks."

Claire Dowds, General Manager, Ormeau Baths

"FinTrU's focus is on RegTech and there are lots of interesting use cases in this space for technologies such as machine learning, AI, RPA etc. Given the amount of regulatory expertise in Northern Ireland, there is an opportunity to become a hub for RegTech globally with the right focus, collaboration and investment. Similar to what Queens have done for cyber with CSIT, why not also create CRIT (Centre for Regulatory Information Technology)?"

Karl Hanlon, Chief Commercial Officer, FinTrU

"We're world-leading in cyber security, and data analytics and machine learning have a good reputation across multiple sectors."

Mark Fletcher, Managing Director, Cardinal Analytics

"Technology recruitment is very tough and competitive in Belfast, which is great, as it forces employers to really think about the offering that they are going to market with and to ensure they are creating high quality roles. At TPICAP, we have put huge effort into ensuring we offer a full Belfast based career lifecycle with no glass ceiling... our technology, architecture, design and tooling decisions all sit with colleagues based here."

Rosie Gormley, Chief Operating Officer, TP ICAP

CASE STUDY: Datactics

DATACTICS



Datactics is a fast-growing software & services firm specialising in data quality and matching, based in the heart of Belfast.

The firm's solutions help banks and government departments who are saddled with very large, very messy sets of data to 'self-serve' for better quality data into functions such as regulatory compliance or business intelligence and reporting. These areas often struggle to solve their data quality problems with traditional competitor tools that are focused on IT users, rather than the business users Datactics seeks to empower.

The company's recent Machine Learning developments, adding explainable AI predictions to the platform, have furthered its applicability in critical "know your customer" and anti-money laundering activities. These requirements are hugely expensive and time-consuming problems for financial services firms across the globe, and Datactics provides a potent combination of a reduction in manual effort combined with greater transparency in decision-making.

In the past few years, Datactics has had some major successes. Alongside widely publicised contracts with Danske Bank NI, and the Bank of Ireland, the firm has won some major international business. In recent years, several major global Tier 1 investment banks; information vendors; government departments; retail banks and wealth management firms, have all committed to using the firm's software on long-term multi-year deals to drive up the quality of their data assets.

Key to the rapid growth of the company has been its technological differentiation. The company's self-service platform requires no programming or coding skill, with built-

in intelligent automation and integration to a wide array of data sources. The platform also enables senior data management and those responsible for regulatory reporting to measure and report on their data quality; to match data across multiple sources and systems to generate a "Single Customer View;" and to remediate and fix that data. In many ways, Datactics straddles the FinTech and RegTech specialisms, which makes sense when it's considered that so much of both areas relies on fast access to clean data.

Stuart Harvey is Datactics CEO and an angel investor in the firm. He has led the company from a small start-up to a 50-person firm with a near ten-fold growth in revenues over the past four years. Recent client wins have been secured in London, the Netherlands, and New York. With plans afoot to expand to Asia Pacific, Stuart believes that Datactics is well placed to maintain its high customer satisfaction.

"Belfast is an ideal location for Datactics to have its technology HQ. We benefit from a highly technical workforce, easy travel connections to major financial hubs in Europe/US and an increasingly entrepreneurial culture. We're delighted to work with FinTechs large and small as we make Belfast an international location for regulatory technology."

Alongside these business deals, the company was recently ranked in the Deloitte Fast 50 for 2019, as well as winning awards for the quality of its technology and its culture. Championing the focus on culture is Elspeth Flenley, HR Manager. *"We were delighted to secure accreditation in 2019 from Investors in People, which alongside the Waters Technology Diversity award reflects the importance we place on company community. In particular we are proud to play our part in supporting opportunities for women in technology, and those studying alongside their professional careers."*

Strength of the FinTech startup/scaleup community

FinTech startup/scaleup presence relatively small but mature



Good ecosystem support for startups in NI, which is starting to filter through to FinTech

Several successful early stage firms but no standout case study as yet

The FinTech startup ecosystem is widely considered to be in its early stages of evolution in Northern Ireland. However, 53% in the ecosystem are scaleups, the highest across the regions we have analysed (where we have observed an average of 39% scaleups). Northern Ireland also has the oldest average age of startups and scaleups at 9 years old, compared to an average of 6 years across the regions we have looked at. Therefore, the Northern Ireland FinTech startup ecosystem is more mature than most would suspect.

Northern Ireland has fewer startup and scaleups than any other region we have analysed with 17, but its penetration of FinTech startup and scaleups per 100,000 population is aligned with what we have seen elsewhere (0.90 vs a median of 0.88). Given the comparatively strong supporting ecosystem in Northern Ireland, there is opportunity for this penetration to be greater. Interestingly, 94% have a business-

to-business element to their proposition, compared to an average of 66% across other regions researched.

loyalBe was the winner of a competition run by Danske Bank in 2018 which resulted in the firm winning a £60k grant as well as office space at the FinTech Hub. The firm has developed a good knowledge of transactional data, and is using Open Banking understanding and classifying transactions, something it has built a machine learning model to help with.

More recently, Automated Intelligence, Datactics, and Lightyear were named in the latest Tech Nation FinTech cohort in September 2020. These three firms reflect our research finding that founders are usually tech or professional services rather than FS. Alumni from the Tech Nation programme include Atom Bank, Monzo and Revolut, and Northern Ireland aspires to see one of its local firms go on to match their achievements.

FinTech firms identified include:

- **AirPos** – ePOS retail solution which can be integrated with ecommerce webstores and compatible with all major accounting software packages.
- **Arkk Solutions** – SaaS that removes the risk and complexity of regulatory, tax and financial reporting for global businesses through a comprehensive suite of solutions covering iXBRL, AIFMD and COREP.
- **BlueSona** – provide solutions for vehicle insurers, including an API driven telematic and an app that detects infringements from phone use.
- **Cardinal Analytics** – machine learning based credit modelling for the credit and structured credit market, identifying companies most at risk.
- **Cboe Hanweck** – Hanweck, acquired by Cboe, provides risk analytics as-a-service with our real-time, data-enabled, global, cross-asset risk analytics platform.

- **Covernet** – provides web-based software to insurance companies, including sales, back office and claims management platforms.
- **ESTHER** – a peer to peer giving platform that enables donations directly from digital wallets to a person in need with no intermediary.
- **Lightyear** – cloud-based automated line item extraction from electronic bills, conducted in real-time with rules applied at a line by line level.
- **loyalBe** – a loyalty and rewards platform with a strength in Open Banking and transactional data, which allows consumers to earn rewards via their bank card and is accessible to retailers of all sizes.
- **MiFinity** – an omni-channel global payments provider, offers a range of end-to-end payment solutions for businesses and individuals.
- **Payescape** – has developed automated back office processes for accounting / bookkeeping as part of an outsourced payroll proposition.
- **Payhere** – allows individual or commercial creditors to set up links for online payments.
- **Plotinus** – artificial intelligence-based asset management for qualified institutional investors.
- **Raylo** – a London based FinTech providing leasing finance on mobile phone handsets. It has a customer support function at Ormeau Baths.
- **Seopa** – compares insurance, energy & financial services providers.
- **Treasury Delta** – provide a digital platform to manage, analyse and compare corporate treasury RFP projects.
- **Yedup** – provide low latency artificial intelligence systems for algorithmic trading, quantitative hedge funds and market makers.

CASE STUDY: ESTHER

ESTHER



NORTH BELFAST ASYLUM SEEKER PROGRAMME

Your money is helping **Talorah**

Talorah is a warm and welcoming wife and mum from the Middle East. Her husband is in another UK city where he is working off the debt of bringing her and their young son to safety in Belfast.

To protect her identity Talorah is not her real name.

What's next?

We'll send you an update email once per month with news about Talorah and the programme she is part of. In the meantime, spread the word about what people are doing through Esther.

Carol Rossborough is Founder of ESTHER, a pocket-to-pocket giving platform which allows businesses to give directly to individuals living in poverty.

Based in the Catalyst Belfast FinTech Hub, ESTHER is unique in that the company works across sectors, bridging the gap between the corporate world, the charity space and the world of FinTech and emerging technologies. Charity and Government organisations verify and register people in need onto the ESTHER platform and donors can then give directly and anonymously to people in their own city.

People in need receive donations onto a pre-paid card solution and high risk products are restricted like gambling, off licenses and cash withdrawal. All donations are traceable allowing full transparency of impact reporting for businesses.

Speaking about the idea behind the business, Carol said:

"We quickly concluded that despite the great sustainable development work happening across cities, inner city poverty is getting worse. We recognised that there was a gap in the market to develop a Peer-2-Peer product that was relevant especially to Corporates wanting to move beyond short term Charity of the Year initiatives. It became clear to us that Fintech was the solution to a major problem and that this could be harnessed right here in Northern Ireland. We knew that the technology existed, but it is ultimately the application of this which is innovative."

In addition to challenging the status quo and spearheading the Fintech revolution locally, ESTHER is launching its first US pilot with 2 partner charities and 50 recipients ranging from the homeless, destitute asylum seekers, young mothers and vulnerable families.

ESTHER is also focused on firmly positioning this as a white label platform for Corporates to engage employees and create their own giving movement to transform the cities their customers and employees live and work in.



**Carol Rossborough
Founder of ESTHER**

Stakeholder quotes

"Northern Ireland's tech startup sector has seen significant growth in recent years. There is a growing and dynamic cluster of local companies with in-depth expertise in areas such as Regtech, AI & analytics, and cyber. We recognise the importance of maximising and supporting this growth so that start-ups can rapidly scale in global markets. We have helped many startups across Northern Ireland begin their business journey and grow to achieve their ambitions and become significant employers. We're keen to build on this success and support the cluster by continuing to develop the skills pipeline and support local companies in new markets."

Karen Bradbury, FS Sector Lead, Invest Northern Ireland

"I didn't recognise that there was a local startup ecosystem before founding the business. When I started loyalBe it really opened my eyes to the communities and support available to startups. It is much better than I had imagined in NI and it is something we should advertise more."

Cormac Quinn, Founder, loyalBe

"In HealthTech/MedicalDevices there is a strong alumni and significant local expertise; they have the knowledge having lived and breathed the key problems in past lives. FinTech is at an earlier stage and we don't yet have the depth. Start-ups are born from people living and breathing a problem."

Jamie Andrews, Partner, Techstart Ventures LLP

"Northern Ireland is a hub for startups as it's a really good place to find capital. The sector is maturing as more firms have gone through the start and fail process."

Mark Dowds, Managing Director, Anthemis

"I'd love a large FinTech to move its back office here, we have so much to offer these types of companies, seeing them set up in other parts of the UK is shame from our point of view. Having a large well established FinTech helps develop the ecosystem further as you see in London a lot of start-ups spin out from other FinTechs."

Philip Creed, Director, fscom

"We need to give more support to startups – give them skills needed to sell into complex regulated markets. We need some structural changes around help and support from people like Invest NI and DIT. We also need to find a way to get more VCs over to NI – in person or virtual."

John Healy, Managing Director, Allstate Northern Ireland

"Startups can have great solutions but getting onto procurement tenders can be the hardest thing. We looked at a few to try to help them do this. If I could see some sort of report of what the startups are and what they do, this could peak my interest. It would help me understand how we could combine / partner."

Ivy McFarlane, Business Development Director, AquaQ Analytics

"We don't have that many Fintech scaleups, so it was fantastic to get three companies in this years' Tech Nation Fintech cohort. It's a massive achievement for Northern Ireland as 10% of the FinTech cohort was from here, however, we need a pipeline of fintech startups to represent NI in future cohorts."

Gary Davidson, Entrepreneur Engagement Manager, Tech Nation

"FinTech is a unhelpfully broad term. The reality is that it's much more difficult to build a successful B2C fintech than a successful B2B."

Darren Burrows, Founder & CEO, Funds Axis

"Over time there's a hope that the FDIs will spit out more startups and founders. The challenge will be to support the transition from corporate roles into founders and sales-focused entrepreneurs."

Simon Cole, CEO, Automated Intelligence

"There seems to be a growing density of FinTech firms. I believe speeding up processes via AI and automation is the future and will create lots of new jobs."

Mark Fletcher, Managing Director, Cardinal Analytics

Relationship between startups/scaleups & established Financial Sector

Limited number of meaningful links between large corporates and local startups / scaleups



Large organisations are mainly FDI companies, where NI is serving as a resource hub

Evidence of startups spinning out of corporates not yet widespread

The research observed a limited number of meaningful links between large corporates and local startups / scaleups, making this an area to focus on developing moving forward.

Danske is one notable exception, having engaged with local startups and scaleups in a number of ways, as outlined in the case study on the next page of this report. Perhaps the most high profile example is the already-mentioned Open Banking challenge it ran two years ago, when it opened up APIs to a sandpit and ran a challenge with a £60k prize which was won by loyalBe and has been pivotal to its development. The startup has recently partnered with Visa Ireland to support local retailers, marking its first expansion outside Northern Ireland.⁸ Danske has also run competitions, events and hackathons to help support startups.

There are other examples too, such as Belfast's Bitnet, which was acquired by Tokyo-based Rakuten, are delivering solutions globally while major financial institutions like the Bank of England are collaborating with world leading consultancy houses such as PwC which has invested heavily in the region for a number of years.

Although enhancing interaction between large and small firms is a challenge in every region we have researched, in Northern Ireland the early stage FinTech firms do not appear to have the access to the larger organisations like in some other parts of the UK. A significant factor is that the FDI companies have often been established as resource centres and are not set up to be externally focused. Therefore they are not actively looking for partnerships with startups or indeed any external commercial opportunities,

making it harder for startups and suppliers to engage with them as the people they typically try to engage with are not based in NI.

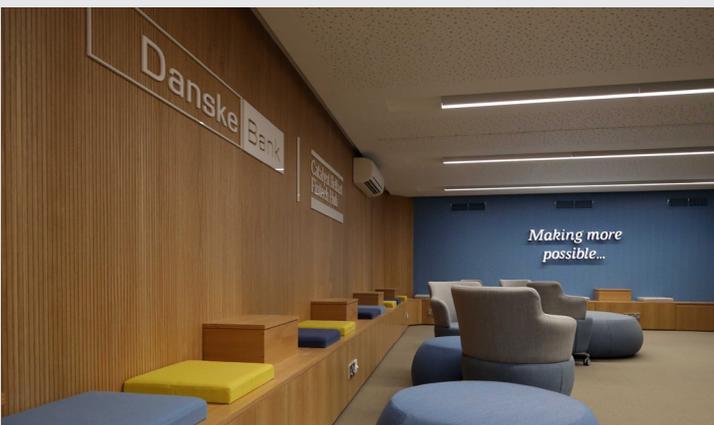
The FDI firms do however engage strongly with the universities for skills and recruitment, which may offer a route via which broader ecosystem engagement can be developed. For example, while they might not be looking for solutions they could help validate solutions or provide talent to startups.

To encourage more engagement, this report has recommended considering how the large firms can provide knowledge, insight and potentially challenges for the smaller firms to try to solve. But this is not a one way relationship, and the larger organisations can benefit from understanding the working practices, culture and innovations of smaller firms, as this can encourage new ways of thinking and working.

The evidence of startups spinning out of corporates not yet widespread. The presence of the large financial brands such as Citi, Liberty, Allstate and others isn't currently spawning as many startups as one might expect. This may be partially due to the relatively short length of time some of the established FinTech firms have been in the region, the type of work being completed in Northern Ireland, or the type of skills that are being developed in these organisations. There is a body of opinion in the region that many of the large firms are heavily tech focused which does not foster the commercial and entrepreneurial capability required to lead a startup.

⁸Visa (2020) Visa partners with LoyalBe to deliver loyalty solutions in Ireland

CASE STUDY: Danske Bank



Danske Bank, the trading name of Northern Bank Ltd, has been helping people and businesses achieve their ambitions for more than 200 years and today is the biggest bank in Northern Ireland.

It is an autonomous subsidiary of the Copenhagen-headquartered Danske Bank Group and employs around 1,400 people in Northern Ireland. The bank serves its customers through 36 branches, three regional business centres, an award-winning local contact centre and multiple digital channels.

Danske Bank saw the opportunity for local startups and financial institutions to work together to put the FinTech sector on the global map, and has been playing a significant role in the local fintech ecosystem.

In September 2018 Danske redeveloped the ground floor of its Belfast city centre headquarters to create Northern Ireland's first dedicated FinTech co-working space, the Catalyst Belfast FinTech Hub. Developed and run in partnership with not-for-profit organisation Catalyst, the space is dedicated to creating a connected community of

startup entrepreneurs, tapping in to the growing cluster of local early stage technology companies who are ambitious to scale and expand into new markets.

Alongside the physical space, Danske launched TheHub.io, an online platform that supports innovation and growth by making it easier for NI startups to connect with investors, find potential new recruits and access practical tools. The Hub is based on a strategic partnership between the Danske Bank Group, Catalyst and Rainmaking, a global cooperative of entrepreneurs. It is non-profit making and free to use.

David Allister, Head of Digital Partnerships at Danske Bank UK, was involved in the project from day one and helped launch the space and TheHub.io. He said:

"One of the key aims of the Catalyst Belfast FinTech Hub was to encourage companies and individuals to collaborate with each other. Members are also supported by a dedicated team and have access to relevant experts within Danske's local and global networks. In fact, several members have been mentored by senior executives and subject matter experts within Danske Bank. Combining this with access to Catalyst's network of entrepreneurs, and unique programmes, has so far led to a number of promising pilots, collaborations and investments.

"But it goes further than that. The project involved significant investment from the bank. Danske Bank has put its money where its mouth is on this unique project, and there is no doubt that we as a business are also learning from the people who work there. There is no doubt that startups can help with challenges banks face, such as customer onboarding.

"The creation of a dedicated, physical space to support startups was also a first within the Danske Bank Group, so we were very much leading the way."

In 2018 Danske Bank partnered with Techstart NI to create an 'Open Banking Challenge' competition with the aim of helping NI FinTechs seize an opportunity created by the new era of banking technology and pitch for £60,000 to fund the development of a new digital product to 'make more possible' for consumers. There was significant interest in the competition, which was won by LoyalBe, a Belfast-based FinTech operating a digital loyalty and rewards app.

The strategy to support early stage tech companies and FinTechs is one part of the bank's journey to a new digital culture and it has been investing in developing both in-house capabilities and future talent. That includes a Chief Digital Officer, the first such role in the local banking sector, and new expertise in areas such as app development, data and robotics. A number of employees are currently taking part in a unique Danske TechFutures apprenticeship programme in partnership with Belfast Met to upskill in digitisation and data analytics.

As of February 2020, there were around 80 members based at Catalyst Belfast FinTech Hub representing more than 35 different start-ups. Unfortunately, given the coronavirus pandemic, to ensure the safety of its members, the re-opening of the space has been postponed for 12 months. While this is the case, Danske Bank and Catalyst remain committed to supporting their membership.



David Allister,
Head of Digital Partnerships
at Danske Bank



Christian Heath, Manager,
Catalyst Belfast FinTech
Hub, Danske Bank



Stakeholder quotes

"The way to bridge the funding gap for start-ups, to encourage rapid growth, is to connect the network of entrepreneurs, advisers and investors."

Grant Edwards, Corporate Associate, TLT LLP

"We are trying to find ways for people in FinTech, in the larger NI financial companies, to understand that there are relatively risk-free ways to test their ideas, and to help get early stage thinking off the ground. Our proof of concept programme is ideally suited to helping people test their ideas confidentially without leaving their job. Also two years working in a startup can really enhance a CV - it's not the risk some people may think."

Jamie Andrews, Partner, Techstart Ventures LLP

"It's very hard for startups to interact with the big companies. It's difficult for them to get on their radar and even tougher to have a conversation with the right person. It would be helpful for the startups to benefit from knowledge share from these large firms, and to give them advice and guidance."

Hilary Moran, Programme Manager, FinTech Corridor

"We are all a very collaborative group in NI, and I like to think we can help startups who are earlier in their journey. We talk to our competitors on a non-confidential basis, and trying to promote NI globally is something we're right behind, we've attended events hosted by Invest NI, Bank of England, and various international events."

Ivy McFarlane, Business Development Director, AquaQ Analytics

"FinTech is a very broad term. Our space is FundsTech and it's certainly a sector worthy of focus. The global funds industry is huge, it is accessible and it embraces technology change. Dublin is a leading centre in the funds industry; its right on our door-step and a huge opportunity for us."

Darren Burrows, Founder & CEO, Funds Axis

"Most of the tech community interaction is in the smaller scale companies. There's a missed opportunity to work with the FDIs more. We, for instance, have had conversations with several but we've had to start them via their US organisation and then engage locally as a result. It's a widely acknowledged challenge, although people are trying to break through the barrier, and we do get introductions."

Simon Cole, CEO, Automated Intelligence

"It's hard to get the 'collision' of startups and established companies right. It's a long sales cycle and I think there's fairly minimal interaction at the moment. What organisations like FinTech NI and FinTech Alliance are doing is helpful."

Steve Orr, CEO, Catalyst

"The FCA's sandbox has been highly effective in the UK. We need more firms from NI to go through the sandbox."

John Greer, Director of Economic Development, Belfast City Council

"We need the bigger local companies to be more engaged. Getting in the door and past the first stage remains too difficult. Startups need credentials like ISO that help with this and experienced mentors can help point them at the things bigger FS buyers will look for. We need to make more of the success stories that have made it to the next level and have got their products into major banks and financial services clients worldwide."

Andrew Jordan, Head of Technology & Innovation, PwC Operate

"As we look into the future of work and how business and employees interact, it is all centred about the use of technology to both enable business and also for us all to connect with each other. As we entered a phase of almost complete remote working during the pandemic, we seen just which companies had the muster to demonstrate their ability to both function and pivot. The strength of the tech sector across NI and the NW region was apparent. The collaboration between big FDIs and smaller scale organisations really helped the entire sector survive and even prosper during the most difficult of times."

Aidan O'Kane, Director, Derry Chamber of Commerce

Funding for FinTech

Strong early stage funding support available for sub £1m fund raises



For scale up / follow on funding, firms look further afield, usually to London, Dublin or US

Grant funding and other support programmes are also available for early stage concepts

In an embryonic ecosystem, Techstart is the primary source of funding for early stage companies. It manages funds in Scotland and in Northern Ireland. In Northern Ireland it has operated for six years running funds totalling approximately £70m in value. Techstart is often the first source of funding into a startup, regularly co-investing with others (the £25m of funding Techstart has deployed is now alongside nearly £70m from other investors, including nearly £50m from 'out of territory' investors).

Clarendon offers a co-fund opportunity, providing a match funding option. It is not able to match Techstart money, only private capital. Kernel is another venture fund which

operates via a mix of private and government money, and counts Automated Intelligence amongst its investments.

Whiterock Finance and Cordovan Capital are amongst the options for more advance funding. Whiterock operates three funds and is able to provide growth funding from £100k to £2m, while Cordovan invests between £500k and £4m in companies with enterprise values of up to £7.5m.

There are also early stage funders active in Northern Ireland who do not have an office there. One example is Par Equity, an Edinburgh-based EIS fund which includes Datactics amongst its primarily Scottish portfolio.

There are no large VC firms in Northern Ireland as the market is not big enough to sustain them, but Dublin and London are both within easy reach, and some of the FinTech founder we spoke to told us they would look to the US if seeking investment.

Catalyst are very active in this area and monitor all deals in Northern Ireland via their 'Northern Ireland Deal Tracker'. They told us they are building relationships with specialist funds in other regions, allowing them to help facilitate funding into Northern Ireland startups.

The grant funding options available to early stage entrepreneurs, some of which can be accessed based on a concept or idea. For example, Techstart runs a proof of concept programme, where £4.5m of grant funding is available to help get early ideas off the ground. It has received applications for around 1000 ideas, grant funded about 300, and about 30 have gone on to become equity funded businesses.

Ulster University also told us about Innovation Vouchers, a programme run by Invest NI, which are available to people / small companies with ideas, which can help fund about £4k of work to support scoping out a new idea, collaborating

with a Knowledge Provider (University). There is a call out for applicants roughly four times per year, the calls are competitive but all that is needed to qualify is an innovative idea rather than a full formal business plan.

The universities are also involved in funding early stage businesses. Techstart's first fund included both QUB and Ulster University amongst its Limited Partners, and about 25% of the investments from that fund were university related.

There are a number of support programmes which can help entrepreneurs develop their ideas to prepare for investment and different stages of evolution:

- **The Propel Pre-accelerator** is for early-stage technology companies that are in development, or have only just launched. It is delivered by Ignite, the startup support and investment network that operates across the UK. The programme offers workshops, tutorials, networking opportunities, mentoring, financial support and access to investment.
- **Ignite** also runs an accelerator for established technology companies which need help scaling and raising further investment.
- Meanwhile, **Springboard** offers a free programme for innovative companies that are headquartered in Northern Ireland with the ambition to grow revenue to (or beyond) £10 million in five years, while Raise offers a programme for equity, takes one intake per year.

In common with other regions, we identified a need to enhance the signposting of the support that is available. Funding can come from multiple different sources and it is important for entrepreneurs to be able to understand what is available and where from, so they can understand which route is the most appropriate for them.

Stakeholder quotes

"I think there's no better place to start and raise your first £0.5m. Raising over £1m is hard anywhere, not just in NI, and beyond this you see hardly any £5m plus raises from local investors. I believe that if you're building a really good company the money will find you. Beyond NI, London and Dublin are where people look for funding."

Alex Lee, Chairman, fscm

"Some people say good companies will always find money. Below the surface there's a lot of broad funding, it's very general. We are building relationships with specialist funds in other regions, so we can feed deals into them. The seed funding in NI is ok, but growth stage funding can be improved – we need more smart money. London is the obvious place but there are others."

Steve Orr, CEO, Catalyst

"I think we could improve our connectivity to other funds in other regions of the UK. More exposure could help show we know what we're doing. A lot of London funds avoid the regions with the belief that angel groups have ruined the cap tables but the majority of that has changed. Increased awareness could help change this and enhance availability of follow on capital."

Mark Dowds, Managing Director, Anthemis

"We haven't raised funding. We're entirely self-funded. But we get enquiries every week from VCs in New York and London. These investors have an entirely different view of the value of FinTech than local investors."

Darren Burrows, Founder & CEO, Funds Axis

"Pre-Covid we would have been on a plane to London at least once a month selling the benefits and opportunities within NI to investors. These investors ranged all the way from seed to buy out capital and the NI businesses who presented were very high quality. There's an exciting story evolving and we're delighted to be part of it."

Andrew Jennings, Partner, TLT LLP

"Some people would say scale-up or Series A funding needs to be enhanced locally, but I don't think this is the biggest issue. We need a greater critical mass of game changing startups, then we can put the right companies in front of the right out of territory investors. Having a broader canvas across NI and Scotland has definitely helped us do this. As always some headline grabbing NI exits will also help draw capital in, like SkyScanner has done in Scotland"

Jamie Andrews, Partner, Techstart Ventures LLP

"Our startups need to think bigger – most don't look beyond NI. We don't think we're good enough, it's a cultural thing. Also, we don't showcase our startups enough. If we did, we'd get more funding from UK and international investors, showcasing the real power of NI's tech ecosystem."

Gary Davidson, Entrepreneur Engagement Manager, Tech Nation

"FinTech companies in Northern Ireland can access finance from a range of sources, locally as well we in GB and internationally. Whether it's start-up capital or follow-up capital and growth funding, there are a wealth of options that a lawyer or a professional advisor in this space can take you through."

Chris Jessup, Head of Financial Services Regulation, A&L Goodbody Belfast

"We were privately funded at the start and have completed two relatively modest fundraising rounds. Access to money is easier here for smaller raises, but once you get above \$5m you need to go outside Belfast. So, there is a lot of support for the startup and early scaleup community."

Simon Cole, CEO, Automated Intelligence

"Catalyst brings investors from London and other places which is helpful. We have enough to get companies started and I think funding local talent is a priority. Ignite, Propel and Co-founders are examples of great local programmes. We're so close to London that we don't necessarily need our own funding ecosystem."

Andrew Jordan, Head of Technology & Innovation, PwC Operate

"Now things are maturing perhaps we will see more investors with bigger cheques. We're working with NI firms to match them with our investor network, who for the later stage rounds are mainly outside the region. There's a gap in awareness and contacts, and we want to help fill it."

Jon Gill, Partner, Partner, TLT LLP

Physical space / hubs

A number of prominent hubs which support FinTechs and the wider startup and scaleup community, including a dedicated FinTech hub



Hubs provide support including nationally recognised incubator / accelerator programmes

The creation of further tech-focused hubs is highly likely

The key role of hubs within tech-focused clusters and communities is widely recognised and closely linked to the provision of incubator and accelerator programmes. A BEIS survey of 428 startups⁹ that have participated in an incubator or accelerator found that most considered the programme to have been significant or vital to their success. Of course, throughout most of 2020 the activities that can be undertaken by physical hubs have been restricted.

Northern Ireland is home to a number of prominent hubs, including a dedicated FinTech hub in the centre of Belfast; rare to see outside of London who are believed to have 85% of the UK's FinTech incubators and accelerators. Opened in September 2018, the Catalyst Belfast Fintech Hub features various workspaces and a unique event venue inside a former vault. It hosted the first FinTechNI meetup group. The creation of a physical or virtual innovation or FinTech hub in Derry has also been under discussion. The hub does not have an accelerator, but it has run programmes such as 'Springboard To Survive', a 12 week programme for established startups during Covid, which was open to firms that had raised more than £500k in funding.

Catalyst operates a science park model, co-locating academics and startups, and describes itself as 'an independent, not-for-profit organisation working together for the greater good, enabling a connected community of like-minded innovators in an entrepreneurial eco-system that is the key driver of the knowledge economy in Northern Ireland'. It was established with £2m grant (split between Treasury & local funding) and now generates £1m surplus per year, which it uses to fund its startup support ecosystem. Catalyst supports 900 firms a year in Northern Ireland, most of which are tech related startups. It is a not for profit with a board and trustees, and has based its model for developing an entrepreneurial support ecosystem in Northern Ireland on the CONNECT model in San Diego. In addition to the FinTech hub, Catalyst also has sites in Belfast's Titanic Quarter, Derry, Letterkenny and Ballymena.

Ormeau Baths is one of the newer startup spaces in Belfast, and operates as a standalone player with no public sector support. It was founded by three seasoned tech entrepreneurs with strong experience in funding and

innovation gained internationally in locations including Silicon Valley. It houses Ignite NI's two startup programmes (Propel and Accelerator), Digital Catapult NI, The Pixel Mill, and is also the home of Barclays Eagle Labs, which has 25 locations across the UK. In 2019, Ormeau Baths was named by Wired in top 10 alternatives to WeWork.

Ulster Bank is another corporate brand with a hub presence in Belfast, via its Entrepreneur Hub (formerly known as Entrepreneurial Spark). The hub is part of a national network which delivers Business Builder, Accelerator and FinTech Accelerator programmes. The FinTech programme is fully funded but only operates from four of the 12 sites, not currently including Belfast.

The creation of further hubs is likely. In Derry, plans are being discussed for the creation of an innovation / FinTech hub. In Mid & East Antrim the future plans include Grade A, Innovation-focused workspace at the i4C innovation centre in Ballymena which is also home to the Innovation Centre at Ecos, managed by Catalyst. Meanwhile, Linen Quarter BID, a not-for-profit agency, aspires to create a tech hub in Belfast's Shaftesbury Square, and is lobbying for government support. The organisation lobbies for regeneration rather than developing property itself but aims to integrate property development initiatives within the tech ecosystem.

There is a network of Enterprise Agencies around Northern Ireland, funded by Invest NI and local councils, encouraging business startups across the country. They provide incubation space for businesses of all types, not just tech.

⁹BEIS (2019) The Impact of Business Accelerators and Incubators in the UK, Research Paper Number 2019/009



Stakeholder quotes

"We're passionate about building a community where entrepreneurs feel safe and can encourage each other. Two of our co-founders are VCs so we are well placed to help companies who want to pitch for funding. We try to connect firms with lots of different people so they get different perspectives, then they can decide what they want to do."

Claire Dowds, General Manager, Ormeau Baths

"We want to build the best place in the world to innovate. Now it's less about co-location, more about collaboration. Technology is going to lead to a major shake-up of the landscape, so we need to get on the right side of that and if we do we can benefit. Let's identify some challenges that would really make a difference."

Steve Orr, CEO, Catalyst

"Creating a Belfast Silicon Roundabout like Shoreditch requires initial investment by government. We are keen to see greater government intervention to act as an enabler and catalyst to property investors, developers, and occupiers. This intervention would create significant opportunities for start-ups and graduate entrepreneurs, and also to provide scale up space for growing companies and spin-outs from universities."

Christopher McCracken, Managing Director, Linen Quarter BID

"We aren't just an office space, we're an innovation hub that helps startups. It's a tech and FinTech focused collaboration space, and if people are in this environment, the chances of collaboration are increased. I've always been keen to make introductions across Danske Bank and Catalyst, from bank business units like HR, Risk and Strategy, to Catalyst's dedicated team of programme managers."

Christian Heath, Manager, Catalyst Belfast FinTech Hub, Danske Bank

"We see the hubs as important places to spend time. It's where a lot of startups form their views."

Jamie Andrews, Partner, Techstart Ventures LLP

"We recognised that emerging startups needed good advice and a home which is why we started Ormeau Baths and drew in partners such as Barclays Eagle Labs, Digital Catapult, NI Screen, and Techstart, as well as hosting the Ignite and Propel Programmes. It is designed by entrepreneurs for entrepreneurs. We work closely with Catalyst and the Universities in Northern Ireland as we see ourselves as an open campus community. We have all learned how to help and serve one another."

Mark Dowds, Managing Director, Anthemis

"We have tried to use the Danske space, and we've used the Ulster Bank space too. We attend hackathons, we help promote / sponsor them. We like to show we're forward thinking."

Ivy McFarlane, Business Development Director, AquaQ Analytics

"What Ormeau Baths have been doing is superb, and we've made progress at the Danske hub, but there's so much more we want to do."

David Allister, Head of Digital Partnerships, Danske Bank

"I think the hubs play a vital role and their contribution cannot be underestimated. I do think there's a need for more of those spaces as many are at full or close to full occupation. Invest NI recently rolled out a flexible loan scheme for people wanting to bring accelerators to the market. We would like to see further investments in this area."

John Greer, Director of Economic Development, Belfast City Council

"When I returned to NI was keen to engage in the startup and Fintech sector and having places like Ormeau Baths, Catalyst, Danske is a huge asset to the sector here. It was exciting seeing the spaces and incubator programmes emerge and seeing the corresponding growth in startup companies. I still stay involved, representing PwC, and I think it's vibrant. I want our team to interact with this ecosystem and understand how they think and how they feel."

Andrew Jordan, Head of Technology & Innovation, PwC Operate

Interaction and communication between key players

Startup / scaleup sector well connected via hubs and networks

Fintech NI has created an umbrella group for the fintech community

There are numerous broader opportunities to interact

There are opportunities for cross border and international interaction

Taking a broader perspective than FinTech alone, Northern Ireland has formed a burgeoning network in which universities, tech start-ups, home-grown talent and global players have worked together to drive the technology boom. It was suggested there may be as many as 120 tech sector related meetups per month, which given the size of the population is an impressive figure which demonstrates the interest and activity in this space.

In the FinTech sector, the creation of FinTechNI last year has established a collaborative entity around which the sector can form a cluster, which along with the efforts of Andrew Jenkins as FinTech Envoy, has helped raise awareness of

Northern Ireland's FinTech sector on a national level. As is the case with some of the other regional FinTech ecosystem facilitators, the organisation currently relies on volunteers, goodwill and sponsorship to deliver its activities. Inevitably this means there is untapped potential in terms of the spread and frequency of activities the group is able to commit to delivering. The development of FinTechNI can play a central role in supporting and accelerating the evolution of the ecosystem, and it is intended that the output of this report feeds directly into the future strategy and plans for the development of the organisation.

There are numerous opportunities for business leaders to interact. One prominent example is CEOs Connect, which is a group created by Catalyst in 2017. It now involves 40-50 CEOs meeting monthly or quarterly, with the intention of trying to help each other and target collective growth. It has led to some collaborative pitches. Due to growth in the size of the community, CEOs Connect has introduced a cap on membership.

Linen Quarter BID runs a number of events including monthly networking for local businesses, aiming to create a sense of cohesion and a collective approach. We would like to support the development of Shaftesbury Square area by working with the tech community and co-funding events. We already have a record of achievement with previous events attracting up to 500 people.

A strong partnership approach and collaboration between Northern Ireland's two universities, local government and global companies has driven innovation and world class research in areas such as capital markets technology.

There are also opportunities for cross border and international interaction, something likely to come increasingly into focus in light of Brexit. The Fintech Corridor is the driving force in developing, collaborating, facilitating and promoting

opportunities for cross border and international interaction, something likely to come increasingly into focus in light of Brexit, as a gateway for Fintech companies to Europe, thus connecting EU&UK fintech. The 'FinTech Corridor' launched at the end of September. It will rotate its Chair annually between Ireland and Northern Ireland. Previously known as the M1 Payments Corridor, a concept to facilitate the Northeast region in the Republic of Ireland by adding value to the concentration of ePayments and transaction companies along this corridor. However, it was deemed to be seen as too location specific and too topic specific, so was broadened to include FinTech and encompass a far wider area. InterTradeIreland, a government agency, provided funding which allowed a Programme Manager to come on board and make it possible for TFC to continue to pioneer its vision for the region.

There are also examples of expertise being brought in from other regions. For example, TLT hosted an event in Belfast on payments, where they also brought across experts from their Manchester office. Given Northern Ireland's core strength in a key areas such as cyber, trading, AI, analytics, RegTech and compliance, there would seem to be a good opportunity for local experts to take part in events and initiatives in other regions. This would align well with the recommendation in this report to develop virtual cohorts / centres of excellence / events.

Belfast City Council led the first tech export mission to California – the first of which was to San Francisco / Silicon Valley in 2013. It also supports the 'Way To Scale' programme managed by Catalyst Inc, where 10 CEOs of local tech companies spend 2 weeks at MIT in Boston, with a focus on transforming their business practices, raising finance and international networking. This year the programme has adapted to an online model with 20 companies participating.

CASE STUDY: FinTechNI



Formed in 2019, FinTechNI is a not-for-profit industry association with a mission is to be the independent voice of FinTech in Northern Ireland, and to champion and empower participants in the local FinTech ecosystem to be successful on a global stage.

FinTechNI is made up of a cross section of participants in the FinTech ecosystem in Northern Ireland, including: FinTech startups and scaleups; technology providers to the financial services sector; financial institutions; FinTech service providers; and FinTech education and skills providers.

The association's purpose is to:

- Champion, nurture and support Northern Irish FinTech firms to enable them to be successful;
- Position Northern Ireland as an attractive location for FinTech based upon its clusters of expertise;
- Collaborate nationally to make Northern Ireland a strategic partner in the UK FinTech National Network;
- Collaborate internationally to establish Northern Ireland a credible participant in the global FinTech ecosystem;
- Expand the FinTech talent available and grow employment in FinTech Northern Ireland.

FinTechNI is a member of the UK FinTech National Network, which is a collaboration between the regional FinTech associations in the UK and Innovate Finance. Launched during UK FinTech Week in April 2019 by Innovate Finance, the Network aims to foster collaboration between national FinTech hubs and connect respective FinTech ecosystems across the UK, as well as to international markets. Other current members are FinTech Scotland, FinTech North, FinTech Wales, and FinTech West. Prior to Covid, FinTechNI was due to host a FinTech National Network event in Belfast, something it intends to resurrect at the appropriate time.

FinTechNI's team is made up of volunteers, with no full time staff, and it relies on sponsorship to fund its activities.

FinTechNI Board of Directors:

- **Alex Lee** (Director and Chairman) - Non Executive Chairman, fscm Ltd
- **David Allister** (Director) - Head of Digital Partnerships and Alliances, Danske Bank UK
- **Karen Bradbury** (Board Observer) - Financial and Professional Services Lead, Invest Northern Ireland
- **Chris Jessup** (Secretariat and Legal) - Associate, A&L Goodbody

FinTechNI Advisory Group:

- **Aidan O'Kane** - Director Allstate Canada / Londonderry Chamber of Commerce
- **Alan Duncan** - MD, Agile Communications
- **Andrew Jenkins** – Director, Arity / NI FinTech Envoy
- **Andrew Jordan** – Head of Technology and Innovation, PwC Operate
- **Carol Rossborough** - CEO, Esther
- **Christian Heath** - Manager, Catalyst Belfast FinTech Hub
- **Gavin Shields** - Founder and CEO, yomo
- **Mark Dowds** - MD Anthemis, Co-Founder Trov
- **Matt Flenley** - Marketing & Partnerships Manager, Datactics
- **Phil Creed** - Director, fscm
- **Simon Cole**, CEO Automated Intelligence
- **Will Smyth**, Lecturer in Financial Services, Ulster University

FinTechNI has actively sought to support four key clusters it has identified in Northern Ireland, namely Trading Tech, RegTech & Compliance, AI & Advanced Analytics, and Cybersecurity. Its activities have included creating collaborations with Innovate Finance, the FinTech National Network, TechNation, LendIt FinTech, UK FinTech Week, NI Cyber, FinTech Sacramento and the FinTech Corridor.

Stakeholder quotes

"There is a strong skillset of people who have worked for some of the world's biggest organisations. I sit on the FinTechNI steering committee. FinTechNI has been fantastically supportive, they are always trying to help increase awareness."

Simon Cole, CEO, Automated Intelligence

"We've made a good start with FinTechNI and being part of the FinTech National Network is really positive. I would like FinTechNI to assist in developing the local ecosystem, with more events and places where our local companies can showcase the good that they are doing. All of this will help expand the community. But of course we all have day jobs so extra resources and funding would really help."

Philip Creed, Director, fscm

"FinTechNI has come so far in the last 18 months. The Association has a strong breadth and depth of members, representative not just Belfast but across Northern Ireland. We will only be truly successful if we think about the Fintech Sector right across the region. When I took up the Envoy role my first official engagement was with the Derry Chamber of Commerce. I wanted to make sure from the outset that it wasn't seen as a Belfast role."

Andrew Jenkins, HM Treasury FinTech Envoy

"There are a number of groups running meet ups – I think there's a really good opportunity for FinTech NI to take a lead on this, for the benefit of all in the ecosystem. FinTechNI is a voluntary organisation for the benefit of all. There are no egos, everyone is looking to help the ecosystem."

David Allister, Head of Digital Partnerships, Danske Bank

"We're not mirroring what anyone else does, we're focused on the cross border element. We are agnostic of location and want to connect and increase collaboration. Covid has lessened the importance of addresses and locations, this is a big benefit for the island of Ireland. People were travelling 1-2 hours per day as a commute, it affects productivity."

Hilary Moran, Programme Manager, FinTech Corridor

"A large part of your job as a leader of a company is the networks you build. We compete for talent with the other firms, but we collaborate and work on things for collective good – it's co-opertition."

John Healy, Managing Director, Allstate Northern Ireland

"Creating a global reaching event would be very helpful. There are big events in London and Dublin – it would be great to have one in Belfast. This could make a really big impact, even if it was a virtual event and we were seen as a stage. I would attend that."

Ivy McFarlane, Business Development Director, AquaQ Analytics

"It is important to hold the right types of events. We want to host events that people feel they would like to be at. We hosted the first FinTech meet up - it was on data and analytics, while RegTech and InsurTech also featured. We need to have a really good set of events, whether they are physical or virtual."

Christian Heath, Manager, Catalyst Belfast FinTech Hub, Danske Bank

"We have lots of substance but don't tell the story well enough. In the US, it could be considered the opposite. We need to be better at shouting about what we are doing. Why can't we be as successful or more successful than some of the Silicon Valley startups? It comes down to belief and shouting about what we do. There are so many people doing great things that are not well known."

Claire Dowds, General Manager, Ormeau Baths

"We have a strong relationship with the FinTechNI team, it's a really important link. We're closely engaged with the FinTech sector and we aspire to host events post-Covid."

Claire McCann, Lecturer in Finance, Ulster University

"We need collaboration between the different bodies with responsibility/an interest in the sector. Ideally there would be a champion for the technology sector who can connect things and be a starting point for anyone looking to be involved."

Lee Stuart, Managing Director, Covernet



Education sector

Universities are creating FinTech-specific courses



Large companies have worked with unis to directly support career development opportunities

Universities are active in creating 'spin out' ventures

The further and higher education sector is made up of three universities and six further education colleges. Queens University Belfast (QUB) and Ulster University (Ulster) are the most prominent and account for more than 50,000 students, with Ulster having four campuses across Northern Ireland. The Open University has been in Northern Ireland since 1969 and has the equivalent of more than 2,300 full-time students, around 40% of which are in STEM subjects.

In addition to extensive artificial intelligence, data science and software engineering courses, QUB and Ulster run a growing number of FinTech-related graduate training schemes, and both have developed state-of-the-art trading room facilities for students, equipped with Bloomberg terminals; reflecting the strong demand for 'trading tech' in Northern Ireland.

Ulster's Financial Technology Higher Level Apprenticeship

(HLA) was launched in September 2020, while Financial Technology is also now a module at masters level. The university has also highlighted the strong links between FinTech, Law and business in general. It has recently designed a course in partnership with a law firm on law and computer science, and also has a business technology apprenticeship.

The large companies work closely with the universities to directly support career development opportunities, with the links between the employer requirements and the academic syllabus are clear. PwC continues to be a large employer of NI Graduates. It's well linked with the local NI universities Queen's University Belfast and Ulster University and higher education institutes like Belfast Met. It provides work experience, placements and academies through the assured skills programme. It also sponsors qualifications and degrees including its own masters in Operational Excellence at Ulster University and a computer science degree at Queen's University Belfast where PwC employs the 20 successful applicants on day one of their university entry with a salary, placements, including a year in the business and a role once they've qualified.

There are many other examples of career-development focused partnerships: Danske runs an intern programme for A Level students prior to undertaking (funded) banking degrees at Ulster; AquaQ has partnerships with the physics, maths and computer science departments at QUB where it sponsors a data analytics project annually with prizes for the winner; Funds Axis has sponsored prizes and taken on interns, including giving an internship as a prize; Automated Intelligence brings in 4-5 students each year on placements and graduate roles and prior to Covid was due to start a programme on Machine Learning. FinTrU works closely with local academic institutions and is now on its 23rd assured skills training academy in partnership with Queens

University, Ulster University, North West Regional College and Belfast Met. Working with Queen's Management School, it developed the FinTrU Trading Room and runs a lecture series related to financial services. In 2020, five FinTech Apprentices joined FinTrU through the Financial Technology degree at Ulster University.

QUB is home to CSIT, the UK's Innovation & Knowledge Centre for cyber security, and has just recently announced it will be offering 40 full scholarships worth over half a million pounds to help secure Northern Ireland's status as a global cybersecurity hub and to meet industry demands. Founded in 2009, today CSIT has about 80 staff and has played a key role in hosting US companies looking at Northern Ireland.

Ulster has created a new research centre – Intelligent Systems Centre – where work has included running big data research to try to find new ways of processing large volumes of data at high speed. It also has links with other centres, such as the Cambridge Centre for Alternative Finance, which is one of the best known FinTech research facilities in the UK.

Other examples of the alignment of the universities to the strong tech sector include the focus on data analytics and artificial intelligence at the Knowledge & Data Engineering Centre and the Centre for Statistical Science & Operational Research at QUB, and the Artificial Intelligence Research Group and Intelligent Systems Research Centre at Ulster.

The universities are also active in creating 'spin out' ventures. QUB in particular has a reputation as a successful as a spin out creator and has taken ideas from the academic environment and monetised them into global companies. It aspires to continue doing this, which could lead to the creation of more space outside the academic environment - somewhere academics and companies can interact and engage with each other.

CASE STUDY: Ulster University



The Ulster University Business School's Department of Accounting, Finance and Economics (DAFE), with its strong links to the local financial and related professional services (FRPS) sector, constantly reviews its portfolio of programmes for currency. One such review led to the BSc Hons Financial Technology. This review identified a need for an increased part-time and flexible provision; with a view to responding to the skill requirements of the expanding global FRPS market, in particular in FinTech.

Specialist skills in FinTech is of increasing importance in the Northern Ireland region, as in recent years, there has been significant demand for graduates within the FRPS area, including FinTech. This is evidenced in many job announcements from PwC Operate, First Derivatives, Funds-Axis, Options and FinTrU. As well as global names, such as Citi, Chicago Mercantile Exchange, Allstate, expanding operations in Northern Ireland, its FinTech sector has a well-developed start-up and SME community that contains many rapidly growing firms.

Research on programme offerings across UK and Irish Higher Education Institutions had shown that an undergraduate degree in FinTech would be unique. Study in FinTech tended to be at postgraduate level or through short courses. Having identified a sectoral need, and a gap in the offering of undergraduate degree programmes to meet this need, DAFE sought to collaborate, through focus groups, with local employers to develop a BSc Hons Financial Technology.

This collaboration was to ensure that graduates are prepared for working life in a contemporary way and where possible the curriculum is future-proofed; and utilising co-created curriculum with employers including an emphasis on applied and professional skills.

These focus groups were chaired the then NI FinTech envoy, Gina O'Leary, and facilitated by Allstate NI with meetings taking place at Allstate NI and Catalyst Belfast FinTech Hub. Parties involved in these focus groups included Danske Bank, InvestNI, Allstate NI, Citi, FinTrU, First Derivatives, Funds-Axis, fscm, State Street, TP ICAP, Invest NI and Crescent Capital. Employers in focus group discussions expressed that the preferred mode of attendance of the programme is part-time, due to their intended recruitment policies moving focus from graduates to school-leavers. Given that the programme would be part-time and undergraduate, it was natural to conclude the degree should be a part of a higher-level apprenticeship. It was felt that the BSc Hons Financial Technology will offer these school leavers an important professional development opportunity while working for their firm and will encourage foreign development investment opportunities in the NI FinTech sector through demonstration of a direct talent pipeline.

The BSc Hons Financial Technology HLA was launched in September 2020 with 10 students on apprenticeships with Allstate NI, FinTrU and Danske and a healthy demand for September 2021. This programme development has encouraged further University collaboration with the NI FinTech sector through FinTech NI and work with the current NI FinTech Envoy, Andrew Jenkins.

Stakeholder quotes

"Access to university research capability was part of the attraction of coming here. We see strong focus on partnerships from the universities."

**Keith Farley, Managing Director & Vice President,
Aflac Northern Ireland**

"Belfast is creating an increasing number of FinTech graduates and lots of students now want to start their own business. We need to provide the support for them to create the companies of the future - we need to facilitate tech led facilities and tech to help them succeed."

Christopher McCracken, Managing Director, Linen Quarter BID

"For a cluster approach to work there needs to be a stronger collaboration between universities and businesses. Bringing research capability out of the universities and into solving challenges that exist within in the sector. We need them to work hand in glove and we need a strong innovation / R&D angle to unlock funding opportunities. There is so much knowledge and expertise residing in our higher and further education institutions."

Andrew Jenkins, HM Treasury FinTech Envoy

"What they do at CSIT is world class. They are pretty close to a perfect model of how you link leading research with industry."

**John Greer, Director of Economic Development,
Belfast City Council**

"I think there's an opportunity for us to do something more niche than broader financial / tech courses. The OU could partner with organisations to help deliver and grow the right skills in NI. It's always a challenge with fast developing sectors – demand exceeds supply for the skills that are required."

John D'Arcy, Director, Ireland, The Open University

"Building strong relationships with companies helps drive bespoke requirements for research, and Knowledge Transfer Partnerships (KTPs) are a core business line for the university. As an example, we've worked with the large and small energy companies on the topic of energy trading, using a KTP with one firm to explore an energy trading platform. It is possible to run initiatives like this across Ireland and Northern Ireland."

Fergus Begley, Startup Manager, Ulster University

"We take a lot of graduates each year so we have a lot of weight and have good links, are also on the advisory boards at both universities and have influence on the courses. The further education sector also has a key role to play in creating skills or enhanced / reskilling, which can add additional supply into the market."

John Healy, Managing Director, Allstate Northern Ireland

"Given the personal and commercially sensitive data that financial institutions work with, they are unable to release their data to us, we have to embed our researchers in their organisations. It's an unusual situation for a university, although we have the same issue with some cyber security work, as some data is too sensitive."

Paul Miller, Deputy Director, CSIT, Queens University Belfast

"Northern Ireland has proven technology experience, capacity and capability in the digital/tech sector. I know that the success of the cyber security subsector in Northern Ireland has been supported by the Centre for Secure Information Technologies at Queen's University Belfast and that both Universities have been instrumental in leading on world-class research in capital markets technology."

Anne Donaghy, CEO, Mid and East Antrim Borough Council

"With our FinTech course we set out to produce students who understand finance and tech, as this what the market needs. The Computing and Finance schools wouldn't normally even be in the same faculty, so it needs a very unusual collaboration within the university. Project based learning is a key component – students get real life exposure and it's well aligned to the needs of industry players."

William Smyth, Ulster University

Participating organisations

Aflac	Datactics	PwC
Agile Communications	Davidson McDonnell	Queens University Belfast
AirPOS Ltd	DCSDC	Raise Ventures
A&L Goodbody	Deloitte	Shoosmiths
Allstate Northern Ireland	Derry & Strabane District Council	Tech Nation
Anthemis	ESTHER	Techstart NI
AquaQ Analytics	FinTech Northern Ireland	TLT
Arity	FinTrU	TP ICAP
Automated Intelligence	fscom	Treasury Delta
Belfast City Council	Funds Axis	Ulster University
Brown O'Connor Communications	HM Treasury	Vox Financial Partners
Cardinal Analytics	Innovate Finance	Workplus
Catalyst	Invest Northern Ireland	
Catalyst Belfast FinTech Hub	Liberty IT	
Centre for Secure Information Technologies (CSIT)	Lightyear	
Citi	Linen Quarter BID	
Compass Audit	loyalBe	
Covernet	Mid & East Antrim BC	
Danske Bank	Open University	
	Ormeau Baths	

Whitecap Consulting



Established in 2012, Whitecap Consulting is a regional strategy consultancy headquartered in Leeds, with offices in Manchester, Milton Keynes, Bristol, Newcastle and Birmingham.

Whitecap typically works with boards, executives and investors of predominantly mid-sized organisations with a turnover of c£10m-£300m, helping clients analyse, develop and implement growth strategies.

The firm works with clients across a range of sectors including Financial Services, Technology, Outsourcing, Consumer and Retail, Property, Healthcare, Higher Education and Professional Services, including Corporate Finance and PE.

Over recent years, Whitecap has become increasingly recognised as a specialist in the FinTech market with a range of public and private sector assignments supporting organisations seeking to understand the role, impact and potential of FinTech. Whitecap has also organised inbound FinTech trade missions for the Department for International Trade, working closely with the inward development agencies.

Whitecap operates two regional FinTech ecosystems in the UK. These are FinTech North, which it co-founded in 2016, and FinTech West, which Whitecap has been involved in since the start of 2019. Via these two networks, Whitecap is also actively involved in the FinTech National Network and the wider UK FinTech sector.



www.whitecapconsulting.co.uk

Whitecap Consulting

1 Aire Street, Leeds LS1 4PR

Tel: 0113 834 3133

Email: info@whitecapconsulting.co.uk

www.whitecapconsulting.co.uk



Leeds

Manchester

Milton Keynes

Bristol

Newcastle

Birmingham

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