

Startup Wales

The Welsh Tech ecosystem, its challenges and opportunities

March 2023



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About Coadec

The Coalition for a Digital Economy (Coadec) is an independent advocacy group that serves as the policy voice for Britain's technology-led startups and scaleups.

Coadec was founded in 2010 by Mike Butcher, Editor-at-Large of technology news publisher TechCrunch, and Jeff Lynn, Executive Chairman and Co-Founder of online investment platform Seedrs.

We fight for a policy environment that enables early-stage British tech companies to grow, scale and compete globally. We have over 2000 startups in our network and have been instrumental in building proactive coalitions of businesses and investors on issues that are integral to the health of the UK's startup ecosystem. Our work has seen many successes, from the establishment of the Future Fund and the expansion of the Tier 1 Exceptional Talent Visa, to the delivery of the UK's Patient Capital Fund.

We represent the startup community on the Government's Digital Economy Council, and the UK on the board of the international group, Allied for Startups.

Acknowledgements

We're extremely grateful to the members of the startup community, investment community, local government community and other stakeholders for their time in contributing to this report. We would also like to express a special thanks to Mark John and Tramshed Tech, whose dedication to and passion for the Welsh ecosystem is clear and without whom this report would not have been possible.

Foreword

The importance of technology startups in transforming not just the economy but our entire society has become undeniable over the past few years. Despite the challenges of Covid, Wales' continued growth as a hub for innovation has been remarkable - and our pool of entrepreneurial talent continues to grow ever deeper.

At Tramshed Tech, we have had the privilege of being part of this exciting and dynamic ecosystem growth. From our headquarters in Cardiff - and across our other sites in South Wales - we have been able to build a thriving community of entrepreneurs, investors, startups and scaleups, all of whom are dedicated to driving innovation and making a positive impact - not just here in Wales, but across the world, as global innovators and forces for change

Despite the current, extremely challenging financial climate, Welsh innovation has shown itself to be remarkably resilient. And it is so important that we keep up this momentum that we have created, as the innovative approach of tech startups plays an ever-increasing role across the economy and society as a whole - moving technology from a vertical sector to a multi-sector horizontal, operating across a range of markets and offering benefits to previously ring-fenced sectors.

Over the last decade we've seen pioneering Welsh tech firms, from early-stage SME's and fast-growth scaling companies, to established primes and enterprise organisations, gather momentum until they became a tidal wave. This broad range of entrepreneurial talent has set us on a transformative course, establishing tech and digital - and creative technology - not only in Wales, but across the whole UK and beyond.

But no ecosystem is perfect and Wales is no exception. There are certainly still gaps in the Welsh tech ecosystem, most notably in funding and access to finance (and investment) and in access to technical skills (and high-level training).

But this is improving. We see this first-hand with the quality and scope of our business incubators and accelerators, providing access to growth finance and investment, as well as in the increasing strategic engagement with and from international partners.

To this end, we've been very happy to play a supporting role in Coadec's breakout Welsh report, by offering a key platform for them to undertake this work at our office in Cardiff, and by offering introductions and access to our tech community here in Wales.

Wales is well positioned for a bright future, if barriers to growth are addressed. That's why we welcome future research to help us understand how best to further our tech ecosystem here, recognising both its amazing benefits and potential blockers to that growth.

Mark John
Tramshed Tech

About This Report

Wales was a pioneer in the first industrial revolution - now its vibrant startup ecosystem is poised to do the same in the fourth.

Wales is uniquely positioned to capitalise on the UK's wider tech success, including having an already thriving startup ecosystem, supportive infrastructure, affordable living and a growing economy. High growth startups and scaleups in Wales are attracting record levels of investment while Beauhurst's most recent report into the Welsh startup scene shows our cities are a springboard for high growth companies and our founders are increasingly young and female¹.

I spent over a year conducting over 100 interviews with members of Wales' startup ecosystem, including founders, investors, academics and business leaders. I am extremely grateful to all of them for giving me their time and insights.

What follows is a snapshot of an ecosystem in flux: the Welsh startup scene has its challenges, as well as enormous potential. This report explores the landscape of Wales's diverse tech ecosystem, reflecting on where founders see our strengths and barriers to overcome, as well as setting out where we think the ecosystem should go next.

The founders I spoke to would all tell you that Wales is a fantastic place to start a tech company, but we have some catching up to do if we are to fulfil our true potential. The success of Wales' future tech ecosystems won't rely on a single organisation or government department, but instead on a wider strategy in which we are all pulling in the same direction. This report is an attempt to identify a path to that.

The tech sector provides opportunities for Wales unlike any other industry before it. As a tight-knit, devolved nation, let's once again show not only the rest of the UK but the world, that whatever the future of technology holds, Wales will be there leading it.

Elis Thomas

Coadec Policy Lead for Wales

Introduction

The startup ecosystem, and the wider tech sector, provides opportunities for Wales unlike any other industry before it. Wales has steadily been growing as an attractive place for startups - roughly £882m was invested into Welsh high growth companies between 2011-2020 - and the country leads in several tech sectors that are only going to grow in critical importance to the world, including compound semiconductors and Cyber.²

As a forward thinking, agile and devolved nation with existing and well developed tech strengths, Wales is perfectly positioned to be a leading place to start and scale a tech company.

In 2022, the Welsh Government's Trade and Invest Wales initiative estimated that the total value of the Welsh tech sector was £8.2bn.³ This followed a 2021 Digital Strategy by the Welsh Government which included the goal to drive economic prosperity by embracing and exploiting digital innovation, including creating "an environment in Wales that fosters and develops a healthy ecosystem for providers of digital technologies and infrastructure innovations...maximise opportunities to exploit new technologies as a catalyst for investment and to attract new talent to Wales".⁴

The Welsh Government's explicit commitment to startups and the tech ecosystem, as well as its recognition of the sector's transformative effect, is very welcome. However, in an increasingly rocky overall environment for startups in the UK, now is the time for Wales to examine the state of its startup ecosystem critically.

In this report we have used interviews with Wales' startup ecosystem - including founders, investors, accelerators, civil servants, academics and others - to provide a snapshot of the Welsh ecosystem. This report looks at the strengths and challenges of Wales' startup ecosystem as it exists today and concludes with potential actions the Welsh Government could take to propel Wales into the role of global startup leader.

Where We Are Now

Startups thrive in competitive and vibrant ecosystems. As fast moving companies - of which roughly 90% fail - a strong startup ecosystem will attract and support a constant bubble of talent, capital and ideas cycling through it. Once these core ingredients are established, a snowball effect often compounds successes upon successes. At its 'start' in the latter half of the 1960s and 70s, the world's most famous and successful startup ecosystem - the USA's Silicon Valley - was an example of a perfect cocktail of strong R&D facilities, business-friendly environment and an explosion in venture capital. These core foundations have acted as both magnets and rocket fuel to generations of startups for decades.

Wales's early tech success stories, including in FinTech and Cyber, should provide strong foundations to support and attract specific startup sectors over the next decade. In addition to these attractions, Wales has always been a naturally forward-thinking nation and one that is instinctively at home with disruption and a drive to improve: from creating the world's first steam engine to passing the world-leading Wellbeing of Future Generations Act - a 2015 piece of legislation which requires public bodies to think about the long-term impacts of their decisions.

However, the overall picture of Wales' startup ecosystem is mixed. In 2021, Westminster's then Department for Digital, Culture, Media and Sport analysed the value and employment generated by tech across 12 UK regions. This study painted a striking picture: Wales had fewer people working in tech, the lowest proportion of digital sector employees (2.1% compared to London's 8.4%)⁵ and a smaller tech economy than many other areas. Tech's Gross Value Added (GVA) to the Welsh economy was also found to be the lowest of all the UK's regions.

But despite this, the same report found that Wales had overall faster tech growth than the UK average. Wales also has a higher proportion than the UK average of high growth companies: roughly 1,215, over a quarter of which are tech. A December 2022 report by R3 found a 143% increase in the number of startups founded compared to the same period last year.⁶ This shows a tech ecosystem with serious potential.

But that potential needs investment. Wales is seeing record levels of investment year after year,⁷ but it is still too low: a 2021 report by business data platform Beauhurst found that, despite having 3.5% of high growth companies, Wales has just 2.5% of the UK's total equity investment deals.⁸

Wales' Startup Geography at a Glance

South Wales

As Wales' urban centre, South Wales is home to its biggest cities and universities and the six most populated unitary authorities. It is here that we can see the tech sector's most striking growth, with Cardiff home to 426 Welsh high growth companies, a quarter of the total.⁹

Transport links make Cardiff the closest capital city to London, Europe's biggest tech ecosystem. Swansea University is first in Wales for Computer Science and seventh best in the UK.¹⁰ Cardiff University also offers wide areas of specialisation in topics like Computer Science and Cyber Security and is an active collaborator in larger scale projects offering research, talent and finance into the ecosystem, detailed below. Newport's tech scene has exploded in recent years, from the world leading compound semiconductor industry to startup support organisations like Tramshed Tech and the Alacrity Foundation.

Cardiff is Wales's most developed tech ecosystem, but the whole South Wales region offers huge opportunities for future growth: the creative industries, FinTech and Cyber making up a few pillars of a rapidly developing ecosystem.

North Wales

North Wales has a smaller overall tech ecosystem, but this didn't dampen the enthusiasm of the founders we spoke to. Startups here benefit from close connections with Ireland and England, and the more rural environment also benefits the development of an increasing number of ClimateTechs which frequently need access to land or sea to develop. In October 2022, Economy Minister Vaughan Gething MS announced the launch of a new Net Zero incentive - headed up by the the Development Bank of Wales - offering favourable terms to firms looking to decarbonise their business.¹¹ Welsh local authorities are also involved in huge renewable energy projects like Hynet, which involves over 40 private and public organisations,¹² making ClimateTech a potential area of specialism for North Wales.

Bangor University supports a burgeoning ecosystem, offering research positions and courses in Data Science and AI, Applied Cyber Security and Computer Science. Bangor is also emerging as a hub in Digital Signal Processing - a process used in nearly all modern audio devices, as well as AgriTech. In 2021, Bangor University launched an AgriTech cluster based at their Menai Science Park (M-SParc), complementing their pre-existing School of Computer Science and Electronic Engineering. This cluster is specifically to support startups, tech and innovation. M-SParc also offers a funded, five month placement in a startup sector relevant to a graduate's degree.

“Moving our organisation to Wales has been hugely beneficial to our journey. The support network around us has been invaluable, from the government to the universities and the innovative start-up culture at M-SParc. The diversity of the ecosystem has also been a major asset, providing new perspectives and opportunities for growth. We are able to collaborate with a brilliant network of other tech companies, in addition to listening and learning to those further on in their journey. There is also a real desire to support one another in Wales, which has made me feel incredibly welcome.”

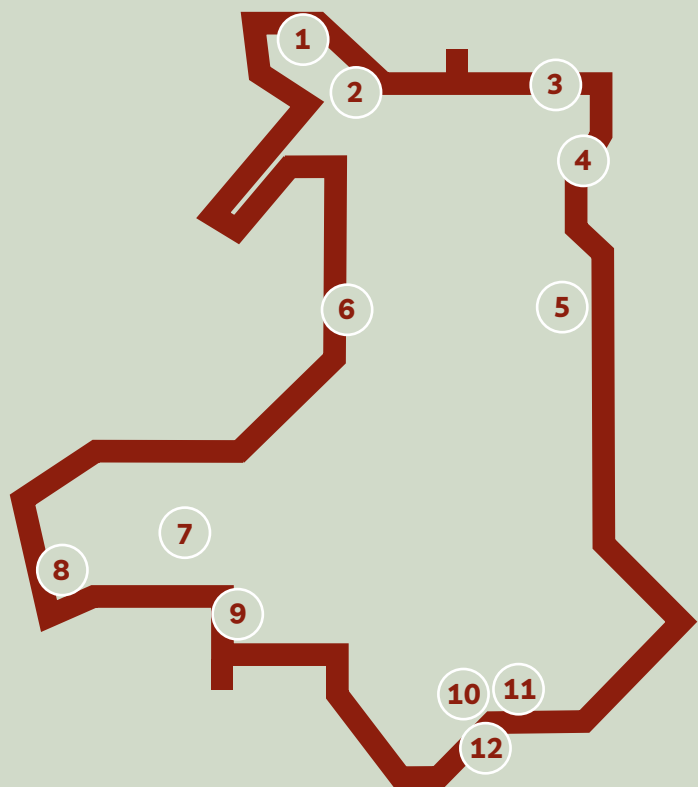
Mark Makin - Founder, Spontza

Wrexham's Glyndwr University also offers degrees in fast growth areas including Cyber Security and Game Design. The Glyndwr OpTIC centre in St Asaph also provides highly specific support for opto-electronic companies operating in both Health and Aerospace.

Welsh Accelerators, Incubators and Co-Working Spaces

As can be seen in this map the bulk of incubators, accelerators and co-working spaces are in the South Wales cluster, with developing initiatives in the North, such as Townsq in Rhyl:¹³

1. Anglesey - 1 location
2. Bangor - 2 locations
3. Rhyl - 1 location
4. Wrexham - 3 locations
5. Newtown (Powys) - 1 location
6. Aberystwyth - 3 locations
7. Carmarthen - 1 location
8. Pembroke Dock - 1 location
9. Swansea - 3 locations
10. Caerphilly - 1 location
11. Newport - 2 locations
12. Cardiff - 14 locations



Startup Sectors that Wales Already Excels At

Wales has thriving and world leading startup hubs in a diverse number of sectors.

The list below outlines the sectors most often raised by founders and ecosystem members as the hubs of startup activity that they were most excited about in Wales. It covers Compound Semiconductors, FinTech, Life Sciences, Cyber and Gaming - but is not exhaustive.

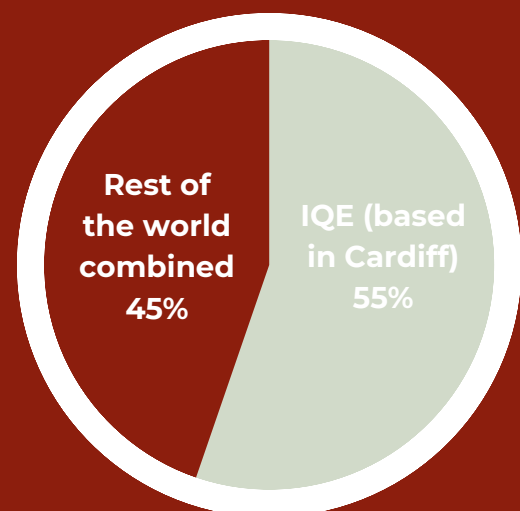
Compound Semiconductors

Compound semiconductors are essential components to the development of both everyday and next generation tech including smartphones, 5G technology, satellites, internet of things and robotics. IQE, a Welsh global leading supplier of materials to the semiconductor industry, summarised the technologies as “almost guaranteed to be in every handset”.¹⁴

In 2015, the Welsh Government provided £12m in investment to develop a compound semiconductor cluster.¹⁶ This proved to be incredibly successful with Wales now leading in a technology projected to be worth £230bn by 2024.¹⁷ Startups, Government and academia all have spaces to collaborate - hubs, accelerators and research institutions including Cconnected, The Compound Semiconductor Centre Institute, Manufacturing Hub, Centre for Integrated Semiconductors, Translational Research facility, Compound Semiconductor Applications Catapult and the OpTIC Centre are all driving compound semiconductor innovation across the region.

Wales' compound semiconductor startup cluster members are estimated to generate more than £600m in revenue each year between them, while the sector and its supply chain employs more than 2,000 people.¹⁸

Global share of Compound Semiconductor Technology Production¹⁵



FinTech

FinTech is one of Wales' most prolific and well known areas of startup growth. The 2021 Kalifa Review into UK FinTech, identified Cardiff as a notable regional centre alongside London. A cluster of major insurance

and price comparison services including Admiral, GoCompare, confused.com and moneysupermarket.com, all headquartered in Wales, has given FinTech's an existing ecosystem to use as a springboard. Welsh FinTech juggernauts include Coincover, which provides security and insurance to digital assets and raised \$30m in its most recent round in February 2023;¹⁹ Yoello, a mobile payment startup and winner of Startup of the Year 2021; and Delio, which connects users with investment opportunities around the world.

FinTech Wales, a non-profit which offers business support including networking, mentoring and its own accelerator -The Foundry - estimated that Welsh FinTechs generated £3.6bn in value to the Welsh economy over 2021.²⁰ In 2022, Trade and Invest Wales estimated the FinTech sector in Wales employed just under 16,000 people, with another 22,000 students enrolled onto FinTech related courses.²¹

Life Sciences

Wales has a well developed Life Science sector which, including HealthTech, BioTech and pharmaceutical research, is estimated to employ over 12,000 people and contribute over £2bn to the Welsh economy.

The ecosystem is supported by Life Science Hub Wales and MediWales, facilitating academic and business, offering marketing intelligence insights and connecting businesses with NHS Wales. The Life Science Hub supports over 300 organisations, both public and private, from startups to public services, including Digital Health and Care Wales and all seven Welsh Local Health Boards. This covers the entire Life Science ecosystem, and the Hub also offers support with bid writing, business development and cooperation between stakeholders. Swansea University spinout CanSense, who used Life Science Hub's expert bid writing support in 2021, credit this in shaping their £1.2m award from the Invention for Innovation programme.²²

The largest Brain Research Imaging Centre in Europe is hosted by Cardiff University, and this is available to use for both research and commercial purposes, drawing world class research and talent to Cardiff's doorstep. Meanwhile, both Bangor University's BioComposite Centre and Aberystwyth University's Aberinnovation offer world leading facilities for research and commercial testing of BioTech and Agtech innovation.²³

With roughly three-quarters of the Welsh Life Sciences market export focused, Wales has the potential to make significant contributions to the future of Life Science technologies worldwide.²⁴

Cyber

Cybersecurity breaches cost businesses millions each year and the risk of an attack is ranked nationally by many Governments as a major national security threat. Wales' Cybersecurity sector is rapidly growing and is home to over 400 cyber companies including Awen Collective and PureCyber. Global defence giants including Airbus, Thales, Oracle, QinetiQ and General Dynamics all have established hubs in Wales that feed into its startup Cyber clusters. Wales has seven dedicated Cyber research centres and internationally recognised Cybersecurity courses at both its universities and colleges.

University South Wales has a particularly well developed Cyber offer, as one of only 14 universities in the UK to receive a prestigious certification from GCHQ and the only university in the UK to be specially recognised for its MSc Computer Forensics course. It has also created a National Cybersecurity Academy, a

joint initiative with the Welsh Government and industry leaders aimed at helping address a shortage of Cybersecurity skills.

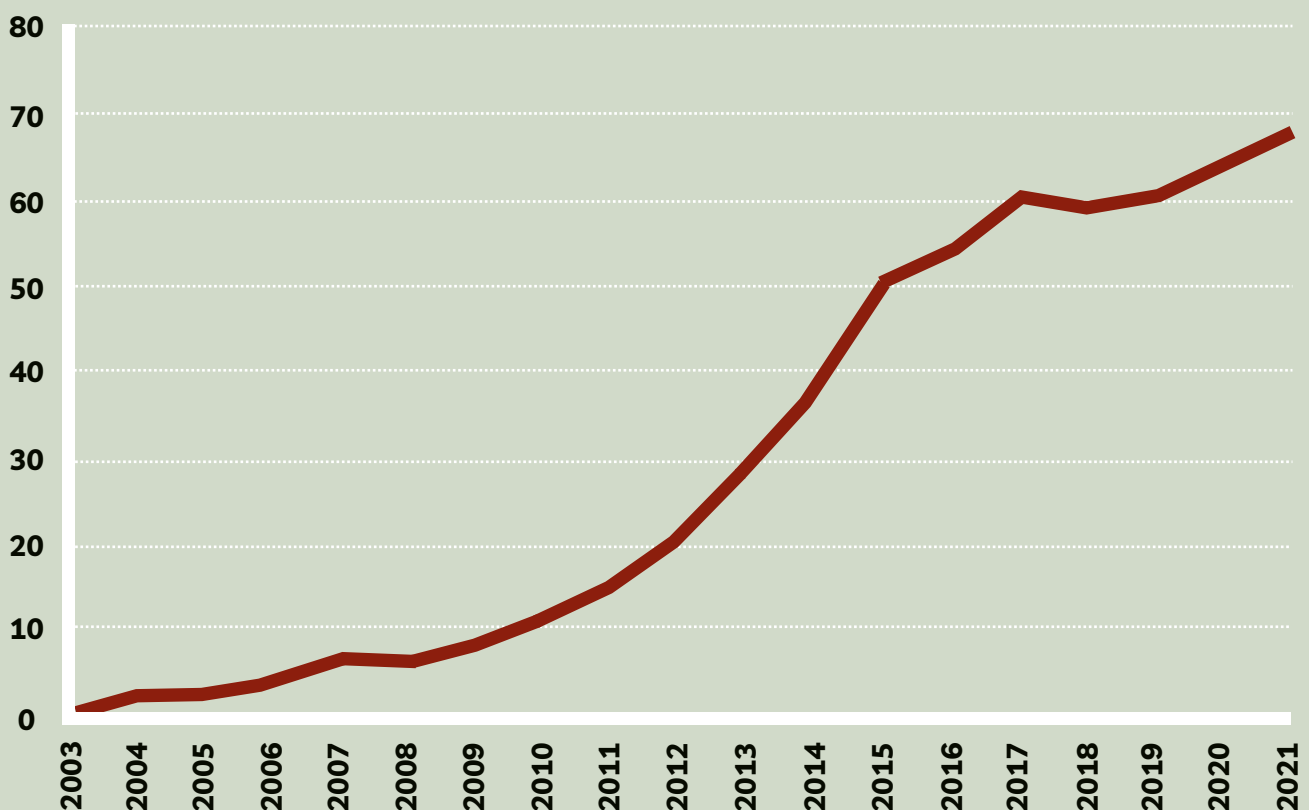
In 2022, the Government announced it would support the development of a new Cyber Innovation Hub. This aims to train over 1,000 new high skilled members of the Cyber ecosystem, increase the number of Welsh Cyber businesses by over 50% and attract over £20m in private investment.²⁵

Gaming

The Gaming sector often acts as an “umbrella industry”, one that supports the development of other innovations such as AI and data analytics. The Gaming sector is set for massive expansion globally and the potential ROI of the industry is also notable - a successful game development studio can achieve a 5x return on a new title within its first 18 months of release. According to a 2022 report by the Clwstwr Programme, Wales’ gaming sector had almost doubled since 2014 to a total of 69 active companies. The startup ecosystem is supported by organisations including Games Wales and leading companies like Games Interactive.²⁶

And, beyond its contribution to the economy and exports, the nature of Gaming means it can be a potent driver of cultural soft power on the world stage. As many as 30% of companies surveyed in the most recent Clwstwr Programme reported that they had deliberately incorporated the Welsh language and culture into their products. Notably, the well reviewed Maid of Sker, published in 2020 by Wales Interactive, stands out in the international market by centering Welsh culture in its gameplay, including Welsh history, folklore and traditional hymns.

Cumulative Welsh video games company count (up to May 2021)²⁷



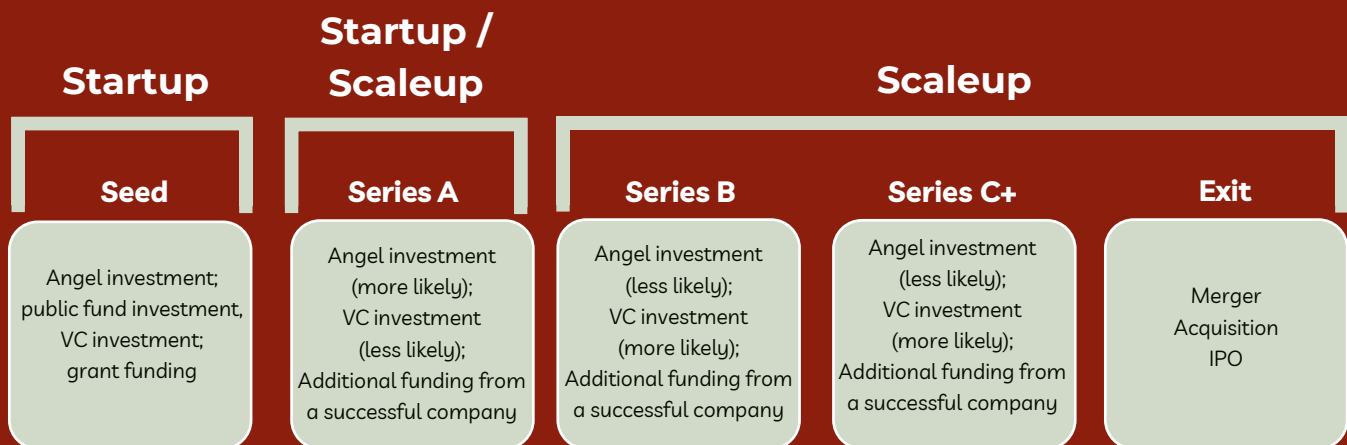
Challenges for Welsh Startups

'Raising finance is still an uphill struggle'

Access to the right investment at the right time is critical to the survival of startups. Beyond ensuring a startup lives to fight another day, investment at the right time and amount is also critical to enabling a startup to start scaling.

Thriving startup ecosystems which support a variety of types of startup - from deeptech AI to B2B SaaS - will be able to connect startups with a mixture of investment routes including grant funding and private investment. But here Wales' ecosystem members could not be clearer - access to finance in Wales is not nearly diverse enough.

The Start-up to Scale-up Journey



Angel investment: an Angel is a private individual who invests venture or debt capital in start-ups, generally early stage startups. Experienced Angels may also play a mentoring role, either formally or informally. While investment size will vary; the median for initial investment is c.£25,000. Often, Angels are successful business people who invest as a hobby.

Venture Capital: the "catch-all" term for all equity investment including Angel investment, it is generally used to cover investment by investment funds into startups. Venture Capital is often characterised by its high-risk, high-reward nature. Once a startup scales beyond initial Angel investment, they are likely to go to Venture Capital funds to take the business to the next level.

Most founders and ecosystem members we talked to highlighted the difficulty raising funding from Angel investors and VC's in the Welsh startup ecosystem, and identified this as the ecosystem's most serious and pressing weakness. Multiple founders who moved to Wales from London, either to attend an accelerator or for personal reasons, noted the investment scene in Wales was quite a 'shocking' contrast.

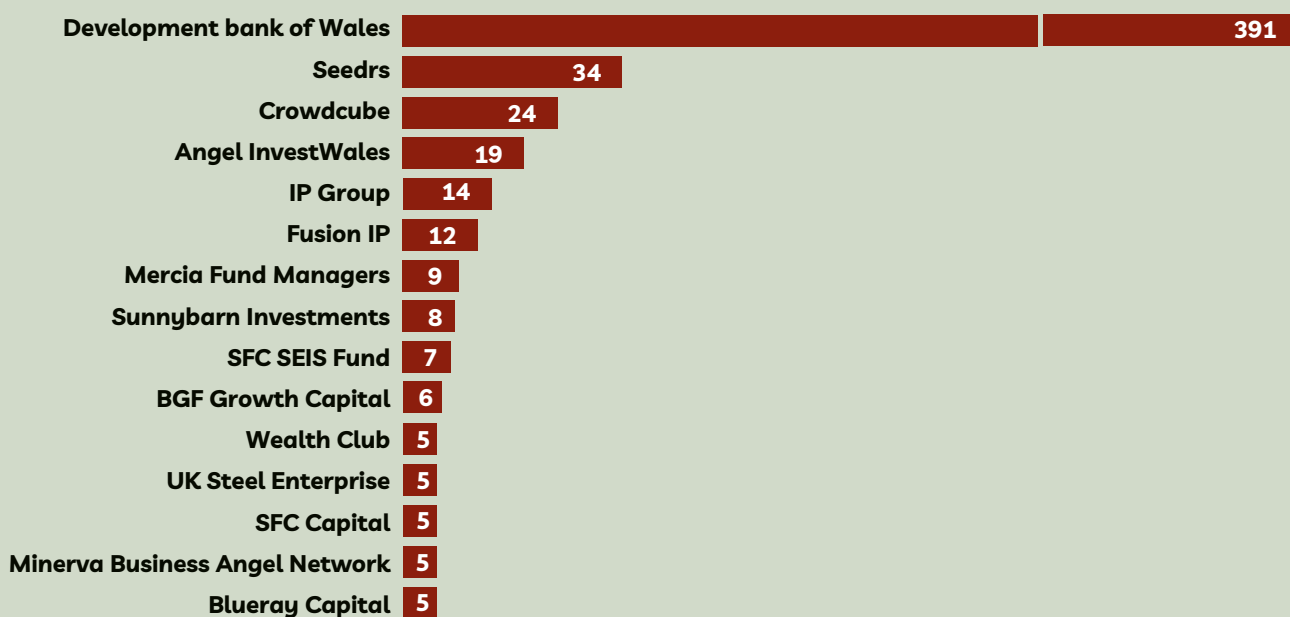
The Welsh Government created the Development Bank of Wales in 2017 to replace the previous responsibilities of Finance Wales. The Development Bank of Wales offers loans, equity investment, co-investment and seed finance to high growth to early stage startups and those looking to expand. The Development Bank of Wales is Wales' largest startup investor judging by participation in equity deals: 391 between 2011-2020 and far surpassing the second most common source of investment - crowdfunding from Seedrs at 34 equity deals during the same time period. Looking at the same report, VC firms are comparatively far less active. The IP Group, a London based technology investor, for example only ranks 5th place, investing in 14 deals across nine years.

The Development Bank of Wales dominates Wales' startup funding landscape. This has meant some founders felt trapped by it. Many founders regularly highlighted their frustrations with the bank's bureaucracy. Some founders also told us they felt the dominance risked creating a culture of 'grant dependency' amongst Welsh startups. They were concerned that good ideas were beginning to skew in favour of only fitting into a grant-giving process rather than the merits of the innovation or what the market wanted.

Founders also repeatedly raised their concerns about a lack of Angel investors in Wales - both that there are not enough Angel investors, and that not enough Angel investors understand or are interested in tech. Wales's largest Angel network also only numbers around 300 - by contrast the largest network for Angel investors in the UK has over 4000 Angels.²⁸ Angel investors are often the first to put in money to a very early stage startup and will typically also contribute strategic advice and networking help. This makes Angel investors a special category of investor whose presence in sufficient numbers is essential to the success of a startup ecosystem: a scaling company can afford to travel to find VC investment, but for pre-seed startups Angels often are the only ones enabling a startup's first steps.

Many founders told us they also found it difficult to attract the attention of VCs. A common frustration of founders was the feeling that, while they might settle in Wales, they have to travel to London to find funding.

Investors by number of participations in equity deals in Welsh firms (2011-2020)²⁹



However, our interviews with investors and other members of Wales' startup ecosystem also revealed some frustration with startup founders. Certain investors wanted to see extra business skills support given to startups, pointing out that some Welsh founders struggled to answer basic questions about their plans. One investor told us that 'basic business literacy' was holding back investment. They gave a recent example where they sat through a pitch and discovered the founder did not know what their customer acquisition cost was. The founder did not receive investment. As we explore further in this report, we feel the value in having places founders can network and swap advice and experiences is easily demonstrated when compared to investor anecdotes like the one above.

'Connectivity has affected our growth'

The Covid-19 pandemic normalised and accelerated trends towards more hybrid and remote working. Founders felt Wales's startup ecosystem is well positioned to capitalise on this with its beautiful landscapes and a low cost of living - as long as Wales focused on improving connectivity.

Clusters of startups in Wales are fractured geographically. The North and South of the country are not well integrated, with infrastructure problems in both transportation and sometimes even internet access, leaving founders feeling isolated. Progress has been made through the investment from the Welsh Government into improving infrastructure, but travelling between the North and the South of Wales remains a lot harder than travelling west into England.

“Currently around 94% of homes and businesses in North Wales can access fibre based broadband services at 30Mbps or above. This number may sound good, but it's not good enough as coverage of the latest gold standard of broadband, gigabit capable, has surged in the UK to 68% from 36% in 2021, while in Wales this has risen from 29% to 51%, and in North Wales this is currently at around only 44%, up from 30% in 2021.

More needs to be done in order to provide for the innovative and forward looking digital and tech businesses based here and ensure that we can attract digital and tech based businesses in.”

Alwen Williams - Portfolio Director, Ambition North Wales

This matters because investors are known to prefer deals with partners in close proximity. In 2020-21 the British Business Bank found that in 61% of equity investments, the recipient business was within one hour's travel from the investor, over 50% of the deals were made where the investor was within 30 minutes travel.³⁰

“Hwyl.Ventures as a venture builder is in a privileged position to get a ringside seat on the growth of the ecosystem, especially from a seed to Series A perspective.

We think the strong FinTech, Cyber and MedTech sectors are currently gaining phenomenal traction especially given the success of programs like the Foundry and those from Tramshed Tech. However, as sectors collide, collaboration between them is going to be increasingly important to both help the growth of new ventures and create efficiencies.”

Eamon Tuhami - Founder of Hwyl.Ventures and investor

“Having the right connections, technical capabilities, funding in place and access to publishing and global commercial business expertise support is a must if you want to succeed. Unfortunately, all these important ingredients are in short supply here in Wales.”

Mark Hindmarsh , Chairman, Wales Interactive

‘There is a lack of targeted long-term support’

While there is no doubt amongst founders that the Welsh Government is incredibly committed to supporting businesses, many founders and wider startup ecosystem members felt that this support could be improved and more targeted to ensure that the policy delivery matched the policy intent.

A common sentiment amongst founders was that the Welsh Government's spending would benefit from a more long-term vision. Founders felt that, in some cases, a laudable attempt to be equitable across Wales' regions and sectors has meant resources are diverted from the areas where Wales has genuine opportunities to become global leaders. In this the sentiment echoed a 2019 Welsh Review of Digital Innovation for the Economy and the Future of Work which concluded that Wales “shouldn't be afraid to double down on what it's good at, and stop pursuing areas that aren't scalable for Wales”.³¹ One stakeholder who was deeply embedded in the ecosystem and works regularly with the Welsh Government described its support as being, in their words, “faddy”.

Other founders also raised frustrations with the support offered by Business Wales, the Welsh Government's business support and advice service. Information was called “outdated” and “unhelpful”, by one founder of a mobile app service. Other founders said they felt the only advice on offer had been written with people starting a bakery or fashion company in mind, rather than a digital service.

“I think the relevance of business support is still massively lacking. We don't have a significant number of first-generation tech entrepreneurs who have scaled and sold businesses and who are now active in terms of investing, advising, and being "visible".”

Neil Cocker - Startup founder, advisor, mentor and accelerator consultant

Founders were generally aware that there can be a lot of support available to startups, but that they could find the process of finding and confirming specific details - or the process of trying to secure the support - was too often overly difficult and draining on both time and resources. A 2021 Games Survey Wales report noted there is “poor take-up of public funding from the Welsh games sector”, with only 8.7% of video game startups successfully obtaining Creative Wales Development Fund grants.³² This point is impossible to separate from the consideration about networks: startups consistently told us that while support was out there it was not always easy to find. Founders typically wanted Government support to adhere to three main principles; accessible, relevant and long-term. Multiple founders felt Government support in its current form required a large dedication of time and effort to navigate through. They also pointed to the risk that when the skills and business support offered to startups is not relevant, this risks disillusionment and disengagement from founders in the long run, kneecapping ecosystem collaboration.

‘The talent pool remains too shallow’

Tech startups need highly skilled workers. Being unable to hire developers and coders suppresses growth. Founders regularly identified finding the right talent - often including workers with the right experience - was consistently a significant challenge.

Put bluntly, demand is outstripping supply. Whilst this is a problem across the entire tech sector, Life Sciences startups seemed to feel this pain most consistently. BioTechs spanning Bangor, Newport and Cardiff all identified skills shortages as specific scaling blockers.

And, while Wales can be good at training homegrown talent at its universities, many founders identified brain-drain as a serious issue. An estimated two thirds of Cardiff's Computer Science graduates leave Wales after graduating. In one revealing conversation, a founder based in Newtown, Powys, who had spent time and resources fostering local tech talent told us retaining it had become so difficult that, when asked where Wales' greatest opportunities lay, they remarked “Liverpool, Birmingham, Bristol.”

So desperate are they for talent that many startup founders told us they were yearning for more work to be done - and funding set aside - to help people upskill into the tech sector from other industries.

“In our early days, Delio was tremendously fortunate to find and secure outstanding talent, who had a willingness to grow and evolve with the company. The supply pool of talent, particularly in the tech space, continues to be far too shallow.”

Gareth Morgan - Advisor and former COO, Delio

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Higher Education and Industry Collaboration

Welsh universities are major deliverers of research and innovation activity for the startup ecosystem in Wales. They also play a vital role in attracting and retaining talent and securing investment into Wales.

When asked how effective founders felt higher education in Wales was at preparing graduates for industry, many founders felt there needed to be more done to help graduates gain the right experience. Multiple founders thought that, while graduates often had great theoretical knowledge, their practical experience was severely lacking. This issue was raised regardless of geography or sector, though those in BioTech and manufacturing were often particularly frustrated.

“Investment in key research areas and skills needs to be focused. This will require higher education itself to radically evolve and work with the private, public and third sectors far more closely. It will also necessitate higher education to offer its skills programmes in a very different way; far more engaged with practice and change.”

Wil Williams - Alacrity Foundation

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One founder, who had been working with a university for some time, felt more hard targets or incentives should be offered to universities and academics based on how well they engage their students with industry. Founders who had experience with M-SParc's Skills Academy, a paid five month placement into a tech startup for students and graduates, reported this as a fantastic initiative. They were enthusiastic about this scheme's potential to de-risk hiring and training. Interestingly, a couple of founders, who weren't aware of M-SParc, effectively described the same scheme when asked how they would want to give students industry experience. If students are engaged more with local industry, becoming aware of the job opportunities within promising sectors and forming the links to find them, this is good for the students' future employability and for talent retention within Wales: a win-win.

Incentivising More Spinouts

In the most successful ecosystems the barriers between academia and commercialisation are porous. Commercialising vital research will play an increasingly important role in any startup ecosystem that wishes to retain an edge over competitors so it is vital the process to spinning out works as well as it could. However, university spinout founders who talked to us had very mixed views of their experiences.

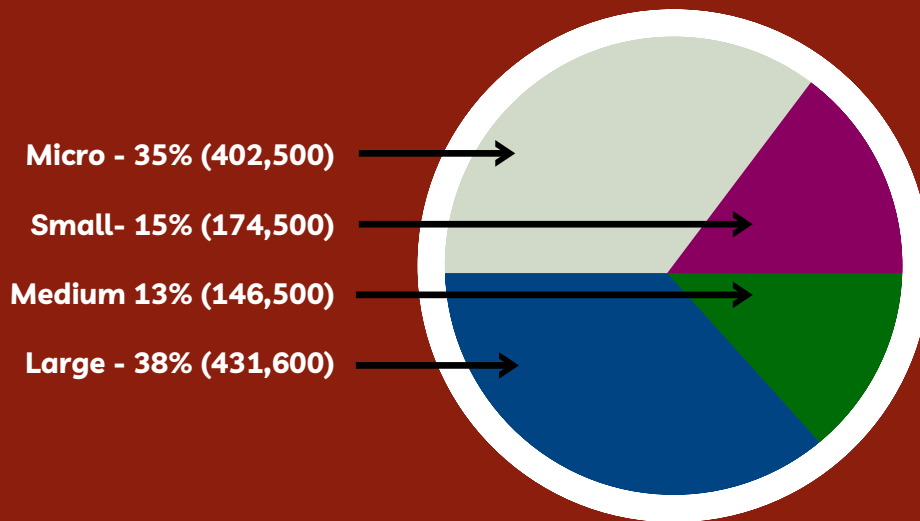
A common frustration repeatedly raised to us was that the universities erected barriers between them and the ecosystem with poor negotiation, inadequate support and unclear spinout terms. One founder told us the University had pressed them for 60% equity. This is the sort of stake that will all but ruin a startup's chances of securing other investment. Two US universities that are famous for the spinouts they have fostered - MIT and Stanford - ask for stakes of about 5 - 6%. Spinouts that forfeit large amounts of ownership place the founder in a hugely disadvantaged position. Future fundraising rounds become increasingly difficult as founders' ownership is depleted, and less equity can be leveraged to present to investors.

'There's not enough scaling success stories'

Some of Wales' most successful startup sectors, such as FinTech, have clustered and grown around Welsh sectors that have decades of sector maturity. However, this pattern is not replicated nationwide. Wales, as well as the wider UK, suffers from a dumbbell economy in which employment is disproportionately tilted towards very small or very big companies.³³ In 2021, The Welsh Government's analysis of active businesses revealed just 12.7% of employees were part of medium sized companies. The vast majority of firms in the UK are very large and this data is almost unmoved over the last 10 years.

Many founders told us they worried about there being a scaleup gap. Views differed on its causes. The most popular concern was that Series A funding can be its own valley of death - Government support can taper off after the early-stages, and VC investment to get to the next stage is difficult to access. Another sizable group of founders felt the brain drain and lack of easy access to talent meant relocating and scaling elsewhere was the only way to take their startup to the next level.

Cumulative Number of Employees by Enterprise Size



Many founders expressed concern that this scaleup drain could stymie the development of clusters and risked creating a culture that encourages founders to leave if they want to scale. Other founders felt it was because the ecosystem - still relatively in its infancy - didn't have enough successful founders the younger generation could look up to. One interviewee also felt that the low cost of living in Wales meant exiting with £1m 'seemed great' which might mean there was less drive from other founders to become a unicorn.

A common sentiment among many founders was that Welsh businesses need to know how to scale. A 2021 study into Welsh microbusinesses, companies with fewer than 10 employees, found that only 8% had invested in management training for their staff. Wales had 438 management training courses to England's 31,938.³⁴ A report by the Open University found that 69% of Welsh employers reported skills shortages, a critical impediment to scaling a startup.³⁵

'Wales need a business rebrand'

Founders, investors and other figures across Wales' startup ecosystem repeatedly raised two concerns: that Wales' business culture is too often 'risk averse' and that this feeds into a wider international perception of Wales as having not much to offer. Founders and other ecosystem members worried that this affected the perceptions of Wales as an attractive place to invest.

“Getting serious investment into Wales faces a host of negative stereotypes or complete ignorance of what we have to offer and yet we are only a couple of hours down the road from one of the financial capitals of the world. There is an urgent need to rebrand Wales as a dynamic, exciting and profitable place to do business. We must shake-off outdated perceptions, after all who would want to invest in what they think is an economic backwater?”

Adrian Morris - Co-Founder, Sportsviz

Some founders felt this discrepancy could be most clearly seen when comparing Wales to Ireland and Scotland. Ireland transformed itself from one of the poorest areas of Europe into one of the wealthiest over the course of a decade, fuelled largely by foreign investment.³⁶ Both Ireland and Scotland have also been successful at leveraging their diaspora networks, attracting jobs and investment as well as effective cultural promotion on the world stage. One founder bemoaned that Wales had nothing comparable to the soft power of St Patrick's Day. In 2022, the 12 days across St Patrick's Day saw Dublin airport welcome over 800,000 foreign visitors - in a nation of only 5 million.³⁷

Whether due to a cultural gap in entrepreneurial spirit, or a modest and self-deprecating wider culture, a common theme from founders was that Wales does not broadcast its successes loudly enough. This is beginning to change, with organisations like GlobalWelsh and Tramshed Tech working hard to boost Wales' image overseas, as well as dedicated government organisations like Wales in MENA (Middle East and North Africa). However, founders felt more needed to be done to rebrand Wales and Welsh entrepreneurialism.

Unleashing Wales' Startups

Having spent time exploring the state of Wales' startup scene with founders, investors and other ecosystem members - including the challenges that, as they see it, prevent the full power of the ecosystem from being unleashed - we have identified the following recommendations. These are themed around widening access to investment for startups and targeting support to parts of the ecosystem that need it.

Unlock Further Angel Investment

Angel investors are often a critical source of finance for early stage startups. Alongside equity finance, Angel investors typically also bring business experience, strategic advice and networking opportunities.

Over the last decade Angels Invest Wales has been the fourth largest investor in Welsh businesses. The network of roughly 300 Angel investors, Wales' largest, is funded entirely by the Development Bank of Wales and connects investors with entrepreneurs, sometimes also acting as a co-investor. Being part of the network enables investors to access a range of carefully selected and - in the network's own words - 'quality controlled' investment opportunities. It also helps investors identify EIS and SEIS approved opportunities alongside curated networking with startups and other investors.

In order to join Angels Invest Wales, the Development Bank of Wales requires investors to meet certain financial criteria. This includes confirming the potential angel is a High-Net-worth Individual and has an annual income of over £100,000. Without being an official member of the network potential Angel investors cannot access its benefits.

Recommendation: Broaden the entry requirements to Angels Invest Wales and more actively flag the network to industry experts at home and abroad in order to help widen the range of Angel investors for Welsh startups.

Significantly Broaden Wales' Investment Environment with Support for Additional Venture Builders

Venture builders, sometimes referred to as startup factories, are an established venture model that can be found in the most successful startup ecosystems. A venture builder is a business that exists to build successful businesses, creating teams to take its product ideas to market. Famously the social media platform, Twitter, and Covid-19 vaccine creator, Moderna, both originated out of US venture builders.

Venture builders can look similar to incubators and accelerators but they play a unique role in a startup ecosystem. Incubators and accelerators help entrepreneurs develop existing ideas and business plans. In

contrast, venture builders typically reverse the process - generating ideas and recruiting teams to rapidly create and iterate Minimum Viable Products. If an MVP gains meaningful traction with early adopters, venture builders will then move quickly to develop and launch the product as its own startup.

The venture builder model effectively leverages shared resources, infrastructure and experienced networks to work at speed and increase the likelihood of success. Like venture capital firms, venture builders will hold equity in their startups, but they will also typically be deeply involved with the daily management of teams and companies. This includes providing strategic and legal support, marketing and back office functions.

Venture builders help de-risk startup ideas, but they can also help diversify the tech sector by recruiting and training talented people who might not have initially thought about working at a startup. Once they have exited or left a venture builder startup many of these people will remain in the startup ecosystem at other companies or found their own startups. By sharing technical expertise across teams, as well as providing support to launched startups, venture builders can also end up helping to upskill startup ecosystems, effectively training CEOs and other tech talent such as developers and coders.

Recommendation: Through the Development Bank, the Welsh Government should establish a programme that backs venture builders in Wales.

Champion Welsh Co-Investment Funds

UK startups raised record amounts of capital in 2021 but 49% of those deals - effectively 67p in every £1 invested - went to startups based in London. One proven mechanism to help attract innovation funding to startups outside of London is through co-investment funds. These facilitate public investment into business that the private sector has previously identified as good candidates for growth. Co-investment funds match funding with private VCs, providing further investment opportunities to a local area as well as additional investment incentives. This helps promote local entrepreneurship, growth and job creation whilst local authorities can gain from future share value.

The London Co-investment Fund (LCIF) is by far the most successful regional innovation fund in the UK. In areas like AI, it ranks as the 4th most active investor in Europe - just below the national Irish and French investment schemes. The LCIF is an £85m fund - £25m was provided by the Mayor's office and £60m from private investors. Since its creation in 2010 the fund has invested in over 150 companies, creating over 2,000 jobs. During the Covid-19 pandemic the Scottish Government launched its own £25m Early Stage Growth Challenge Fund, Liverpool City Region launched a £3m Future Innovation Fund. Cardiff City Region also recently launched a £10m SME Finance Fund aimed at early stage startups.

By providing public capital to existing regional startup hubs the Welsh Government could drive up existing private investment and output in the short term, while also establishing long term assets to support regional growth.

Recommendation: Commit to supporting and expanding regional co-investment funds across Wales so that local authorities can benefit from and more easily provide support to the high growth sectors.

Review how to Leverage Government Funding to Provide Better Engagement With Startups

Meaningful engagement with startups from corporates and other established businesses is not common in Wales. This is despite many startups clustering around established and fast growing industries such as Wales' successful financial services sector. The leading Welsh brands in these sectors often end up becoming 'umbrella' companies to the startups that cluster around them. However, it is the startup clusters that often end up being a magnet for the talent and innovative ideas that the umbrella corporations benefit from.

In 2017 the Welsh Government gave Admiral Insurance a grant of over £650k to expand its operations. At the time this was criticised in the media and the Welsh Assembly, including by University of South Wales Professor, Dylan Jones Evans, who said he found it hard to believe taxpayers' money was given to a "firm that makes a substantial profit every year".³⁸ The Welsh Government responded by saying it made "no apology" for helping to create jobs.

Given the importance of many established corporations acting as umbrella businesses to startup hubs around Wales, we believe there is scope for the Welsh Government to review and consider how any funding given to these bigger businesses could be leveraged to include engagement and collaboration with startups.

Support for startups could also come in the form of better procurement. Startup founders frequently mentioned not being able to compete with large incumbents when bidding for Government contracts. One startup, for example, told us they had struggled to access a recent procurement contract that they described as effectively 'pay to win', it went to a large incumbent that did not have in place the capabilities the startup had.

Recommendation: Launch a review into ways in which Welsh Government funding into organisations could be leveraged to provide better engagement with startups.

Invest in New Co-Working Hubs

Co-working spaces have been critical to the success of the UK's tech boom over the last decade. There are hundreds of independent organisations across the UK, including Wales, that run flexible spaces that have become the bedrock of the UK's startup ecosystem.

Not only do they provide a cheap, easy way for startups to get going as businesses, but they also often provide the kind of wraparound support, advice and guidance that is so critical to the success of early-stage entrepreneurs. This includes the sort of critical-but-difficult-to-observe network effects that happen when startups are able to collaborate and share their experiences and advice.

A 2015 impact report into Caerphilly's Welsh ICE startup hub found that, since its founding in 2012, it had added a net £53m GVA to the Welsh economy. The report also found ICE startups had a 77% three-year survival rate compared to the UK average of 61%.³⁹

Organisations like Indycube and Townsq have renovated unused spaces into new startup hubs and, given the cultural shift towards hybrid working, we believe the Welsh Government should double down on this goal, dedicating further funds to renovating unused high street spaces. This should benefit sustainability and tech as well as town centre economic development. The Welsh Government has previously committed to restoring town centres with its Transforming Towns loan. This could be used to expand co-working hubs in more sparsely populated counties.

Moreover, we believe the Welsh Government should use support for new co-working hubs to explore ways it could use these places to signpost and facilitate access to more targeted business skills support. This could include entrepreneurial education programmes that could help target scaling support to specific fast growing sectors such as FinTech.

Recommendation: Invest in new co-working hubs that can act as centres of advice and guidance.

Consider how to Further Leverage Enabling Remote Working as a Startup Draw

The Covid-19 pandemic inspired acceleration towards remote and hybrid working should benefit Wales - a country that can boast beautiful landscapes, strong communities and a relatively low cost of living.

A 2022 Zoom report that examined the experiences of hybrid working revealed that 85% of workers wanted to keep the model once they had tried it.⁴⁰ A similar survey by the Institute for Directors suggests 79% of bosses around the UK intend to use hybrid and remote working models for the long term. The same survey also found 86% of large UK employers have already introduced hybrid working models.⁴¹

Zoom's report found hybrid working could benefit high streets by increasing local spending and footfall, while a Demos study found people's relationship with 'place' strengthened during the pandemic and, as a

result, 47% of respondents working remotely for at least some of the time told Demos they now intended to spend more money in their local area. Zoom estimated three quarters of jobs listed as 'remote' pay above the UK average £31,000 annual salary.⁴²

The Zoom report found the trend towards hybrid and remote working has also contributed to a demand for 'third spaces' - like coworking hubs - which enable people to work from in their own communities as an alternative to the home or office. Anecdotally we heard founders tell us coworking spaces had helped make the transition between working model seamless as their space enabled fully remote teams provided they could occasionally access the coworking space's affordable in-person meeting spaces.⁴³

To really capitalise on this however, startups need access to high-speed fibre optic networks. The Welsh Government has made incredible strides in superfast broadband coverage

The next step to making Wales a highly connected nation perfect for quality jobs is the pursuit of the superior Full Fibre and Gigabit broadband coverage. Ambition North Wales has a campaign to connect "The Last Few %" and the Welsh Government also currently offers an "Access Broadband Cymru" grant for homes and businesses to install an upgraded connection speed. Access to Superfast broadband has practically doubled over the last 10 years and we are on the right track with access to Full Fibre - and just need to make the last final steps.

Recommendation: Review and incentivise a faster broadband rollout, and consider how to further help incentivise remote working.

Launch a Review into Spinout Reform

Welsh universities are major deliverers of research and innovation activity in Wales. For the startup ecosystem they also play a vital role in attracting and retaining talent and securing investment into Wales. As part of their role in the startup ecosystem, some academics and university students can choose to spin out their research into a startup. Commercialising vital research will play an increasingly important role in any startup ecosystem that wishes to retain an edge over competitors. Strategies to encourage successful spinouts will be vital to the future of Wales startup ecosystem.

However, as explored in this report, some founders we spoke to faced significant and unnecessary barriers to spinning out - a concern CoadeC has seen replicated across the UK's universities.

There is growing anger amongst the startup ecosystem with how UK universities - including Welsh universities - can treat founders. At their worst, spinouts - and their founders - can be so badly mismanaged by universities that VCs and other investors are put off contributing investment and the company can be out-innovated before it has had a chance to properly get going.

The mindset of many UK universities has been described to CoadeC as one of 'sitting on a gold-mine that has to be defended'. The perception from founders around the UK is that, when it comes to spinouts, many universities are too risk averse and do not understand how to best prepare a startup to be resilient and successful. Many founders feel this mindset has incentivised damaging behaviour towards fledgling companies. This is no different across Welsh universities.

Recommendation: The Welsh Government should launch a review into the state of Welsh spinouts, considering how to better support the commercialisation of Welsh research.

Review how Existing Welsh Trade Envoy and Diaspora Networks Could be Leveraged to Help Startups in Wales

As explored in the Challenges section of this report, a common complaint amongst Welsh startups is the difficulty in finding private investors. Many founders raised their concern about Wales' international image lacking any recognition as a hub for tech and innovation.

The UK Government's 31 trade envoys contain only one Welsh representative, and the Welsh Government has only four trade envoys. There is a Welsh FinTech Envoy - but this was a position created by the UK's Chancellor. There are no Welsh startup envoys, nor envoys for other tech sectors in which Wales is increasingly internationally recognised - such as Cyber.

In its 2020 strategy the Welsh Government recognised the global Welsh diaspora have a crucial role to play in promoting the country and raising its international profile but have historically been an under-utilised asset. A central element of the strategy is the recruitment of Welsh champions, including internationally recognisable Welsh celebrities. Many of the founders and ecosystem members we spoke to were unaware of the diaspora strategy though all were positive when told about it.

Recommendation: The Welsh Government should create trade envoy roles that focus on championing Wales as a tech hub - as well as specific tech sectors it excels in.

The Welsh Government should also review how its next diaspora strategy, particularly its Business Diaspora strategy, could better champion its growing tech ecosystem.

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